S. HRG. 113–519

MID-SESSION HEARINGS FOR FISCAL YEAR 2015

HEARINGS

BEFORE THE

COMMITTEE ON THE BUDGET UNITED STATES SENATE

ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

April 1, 2014–OPPORTUNITY, MOBILITY, AND INEQUALITY IN TODAY'S ECONOMY
APRIL 8, 2014–SUPPORTING, BROAD-BASED ECONOMIC GROWTH AND FISCAL RESPONSIBILITY THROUGH A FAIRER TAX CODE
MAY 1, 2014–INVESTING IN WHAT WORKS: EXPLORING SOCIAL IMPACT BONDS
MAY 13, 2014–EXPANDING, ECONOMIC OPPORTUNITY FOR WOMEN AND FAMILIES
JUNE 4, 2014–THE IMPACT OF STUDENT LOAN DEBT ON BORROWERS AND THE ECONOMY
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CONTENTS

HEARINGS

STATEMENTS BY COMMITTEE MEMBERS

WITNESSES

QUESTIONS AND ANSWERS AND ADDITIONAL MATERIALS

OPPORTUNITY, MOBILITY, AND INEQUALITY IN TODAY'S ECONOMY

TUESDAY, APRIL 1, 2014

UNITED STATES SENATE,
COMMITTEE ON THE BUDGET,
Washington, D.C.

The committee met, pursuant to notice, at 10:06 a.m., in Room SD–608, Dirksen Senate Office Building, Hon. Patty Murray, chairman of the committee, presiding.

Present: Senators Murray, Sanders, Whitehouse, Merkley, Kaine, King, Sessions, Crapo, and Johnson.

Staff Present: Evan T. Schatz, Majority Staff Director; and Eric M. Ueland, Minority Staff Director.

OPENING STATEMENT OF CHAIRMAN MURRAY

Chairman MURRAY. This hearing will come to order.

I want to thank my Ranking Member, Senator Sessions, and my colleagues who are joining us here today, and I especially want to thank our panel of distinguished witnesses for being here, Nobel Laureate Joseph Stiglitz and Senior Research Fellow at Mercatus Center, Dr. Keith Hall. We have a third witness. He is John Bates Clark Medal Recipient Dr. Raj Chetty. His flight was canceled coming in today. I believe he is landing at National shortly, so he will join us as soon as he can get here.

Today's hearing is really going to focus on mobility, inequality, and opportunity, but really at the heart of the discussion is the basic promise of America, the idea that no matter where you come from or who you are or your circumstances, if you work hard and play by the rules, you have the chance to live out the American dream.

That basic promise is why I sit in this chair today. When I was 15, my father was diagnosed with multiple sclerosis, and within just a few years, he could not work anymore and all of a sudden, without any warning, my family fell on very hard times. But the country did not turn their back on us. For several months, we relied on Food Stamps. With the help of a government program, my mom was able to attend Lake Washington Vocational School so she could get a job, help put food on the table, and take care of my dad. My brothers and sisters and I were all able to go to college and stay in college because of student loans and support from what we now call Pell Grants. We had lost our footing, but because of this great country, we never lost hope that with hard work, we would have the opportunity to live out that American dream.

But, something happened to our economy over the last three decades or so. Instead of rewards from hard work and innovation being shared broadly, those rewards began to flow overwhelmingly to those at the very top while everyone else was getting left behind. But stagnant economic mobility and soaring inequality are not inevitable. We can expand opportunity to more Americans and ensure people have the tools that they need to succeed, and that is what Congress should be focused on in the coming years.

We know that our economy thrives when America's middle class can earn enough to raise a family and save up for their kids' college and put some money away for a secure retirement. But in recent decades, the middle class has been squeezed. Wages have stagnated. Workers cannot find jobs. Homeowners worry about making their next mortgage payment. That has happened even as incomes for the country's top earners have increased. That trend is simply unsustainable and unhealthy for our economy.

A recent study by the International Monetary Fund shows that countries with higher inequality have slower growth and more turbulent business cycles. As you have written, Dr. Stiglitz, the United States has one of the highest levels of inequality among the advanced industrial countries.

Making matters worse, as inequality has grown, it has not gotten any easier for people to climb the economic ladder, as we will hear from Dr. Chetty, who is joining us as we speak. Thank you very much for being here. That research finds that the birth lottery, or a child's parents' socio-economic standing, matters more today than it used to because economic mobility is stagnant while inequality is on the rise.

That is a very alarming trend because it goes against America's basic promise. Right now, there could be a child with the potential to go on to make new medical breakthroughs or start a new business or innovate new technologies, but even if she did not win that birth lottery, our economy and the world might never benefit from her talents and skills. But, Dr. Chetty, you also found in your research that some areas in the U.S. have greater economic mobility, notably places that have less inequality and good school systems.

So, we can overcome these challenges. Government alone cannot solve the problem of inequality. Of course, businesses that create good-paying jobs help people reach the middle class and build a stable and secure life. But we in Congress can create the conditions so that all Americans, from the top income earners to those in the middle class and those struggling to get there, can succeed, and to do that, we need to do some foundational things to help today's workers.

I believe that starts a with a minimum wage increase. Working full time should not leave a family in poverty. Congress can and should act to ensure that hard work pays off by raising the minimum wage for millions of workers.

Last week, I introduced the 21st Century Worker Tax Cut. That bill would update our tax code to help today's workers and families keep more of what they earn. It would give working families with children a 20 percent deduction on a second earner's income and expand the Earned Income Tax Credit, or EITC, for workers without dependent children who are just starting out or whose children have already left home. Based on estimates from the Treasury Department and

the Joint Committee on Taxation, those simple changes to our tax code would help more than 13 million childless workers and more than seven million working families climb the economic ladder.

My bill is paid for by closing corporate tax loopholes that both sides have proposed closing. I know there are differences when it comes to our parties, how we would use those savings. My bill would close those loopholes to give workers and families some tax relief, while Chairman Camp has proposed closing those loopholes to pay for lower rates for corporations. I am hopeful that, especially when they consider the kinds of challenges we are discussing today, my Republican colleagues will rethink their approach and join our effort to give a tax break to struggling workers who really need it.

We also need to address all of our deficits fairly and responsibly. Our country faces serious long-term fiscal challenges. So while this year our deficit is expected to be about a third of what it was just five years ago, I want to continue to build on the $3.3 trillion in deficit reduction we have already put in place. But at the same time, creating opportunity means we cannot lose sight of the other deficits that our country faces. Too many people cannot find work. Our economy is still recovering after the worst economic downturn since the Great Depression. So, we have to do more for people who are struggling to find a job.

We have to also address our infrastructure deficit. Infrastructure is what makes our economy move. It helps our businesses grow. It makes our communities thrive. We need to make those investments to spark economic growth and to create more jobs for more workers.

We have to also give our kids the best education and training they need to compete and lead the world, and that means investing in early learning all the way up to college and job training programs.

And, we have to maintain a strong safety net. Programs like food assistance and affordable housing help make sure families do not fall into deep poverty or hunger or homelessness. Instead, it gives families more opportunity to climb the economic ladder.

And the last point I will mention is the need to reform our tax code. Our system is riddled with tax loopholes and special interest carve-outs that benefit the wealthiest Americans and biggest corporations, and that is unfair. Instead of spending billions on those tax loopholes, we should be investing in national priorities that benefit American families.

We have lots of work to do for families in our country, and in our divided government, getting anything done is going to take bipartisanship and compromise. Thankfully, here in Congress, we proved just a few months ago that is possible. Democrats and Republicans can break through the bitterness and rancor, work together, and reach an agreement.

When Chairman Ryan and I sat down together after the government shutdown last year, we faced a lot of skepticism that we would be able to get anything done. But, we listened to each other, we searched for common ground, and we made some compromises. We knew we were never going to agree on everything, but we did not think that should mean that we could not agree on anything. And when we got a deal just a few months ago, the vast majority of the Congress put partisanship aside to do the right thing for the American people.

Our two-year budget deal was a strong step in the right direction. It rolled back some of the damaging across-the-board cuts and prevented a government shutdown. It restored some certainty by setting budget levels, not just for 2014, but also for 2015, so our Appropriations Committees in the House and Senate can do their work on time using bipartisan numbers.

Now, we need to build on that. We should not relitigate our bipartisan budget deal or create needless uncertainty again in a budget process that should finally be free of crisis. And I will certainly fight back against any attempts to move our country backwards, with deeper cuts to investments for our families and seniors or unfair and irresponsible budget proposals that protect the wealthiest Americans and biggest corporations from paying a penny more of their fair share.

But, we do owe it to our constituents to keep working together towards policies that create jobs, increase economic mobility, and gives more people opportunity. Every child growing up today deserves the same shot at the American dream that my family had, and I am ready to work with anyone, Democrat or Republican, to get that done.

With that, I will turn it over to my counterpart, Senator Sessions, and then we will hear from our experts on this.

OPENING STATEMENT OF SENATOR SESSIONS

Senator SESSIONS. Well, thank you. Thank you very much, Senator Murray, and for your leadership.

This is an important discussion, an important issue that we are facing, and I would note that the Ryan-Murray spending limits that we agreed on was violated again yesterday, $6 billion more spent in 2014 than we agreed, to in that legislation that you worked hard on to pass.

So, a sober review of the data reveals that the economic situation for too many Americans remains unacceptable. Household incomes have declined for five years. The number of households at the lower end of the distribution grew by 1.7 percent, while the number of households in the middle income decreased by 0.7 percent. In other words, the middle class lost members to the lower-income group. That is not the trend we want. I think we do need to understand that and recognize it.

Our unemployment rate remains stuck around seven percent, but this statistic obscures much of the real picture. Millions of Americans have left the workforce entirely, bringing the workforce participation rate to its lowest level since 1978. We were told that massive debts accumulated over the last five years would lead to prosperity, but we are now left with none of the prosperity and all of the debt. Growth last year was half what the White House predicted it would be, and the White House estimates have consistently been too high.

So, I agree, Dr. Stiglitz, with one of the remarks that you have in your statement that what matters is whether citizens see their living standard rise year after year. A pure GDP analysis is not sufficient. We are government officials. We have responsibilities to the people of this country and it is appropriate to consider what is happening and what policies might be exacerbating this condition.

Both the President and Chairman Murray have proposed as one remedy to expand the Federal support for adults without children. However, the President's proposal to expand the Earned Income Tax Credit—and this is a real tax subsidy, colleagues, not a tax deduction—it interacts with the Obamacare subsidies in a way that surely would, contrary to expectations, penalize work. Because the Earned Income Tax Credit and the Affordable Care Act phase-out schedules correspond with one another, an adult without children whose income goes from $14,700 to $17,700 would lose 75 cents in higher taxes and reduced benefits for every dollar they earn. So, this creates an incentive not to earn. To grow employment, we need to affirm work rather than punish it.

So, it is time for a compassionate reform, indeed. First, EITC would appear to be a better method of helping the poor than straight government assistance. I agree with that. This can be a point of bipartisan agreement. But, it cannot be one more program that traps Americans in poverty, and we do not have the money to create a new welfare program, colleagues. We do not have the money. So, any new program can and should be paid for out of savings from existing welfare programs.

The government spends more than $750 billion a year on a maze-like welfare bureaucracy. This money is spread across more than 80 programs in dozens of agencies with little oversight and no guiding vision. Imagine how much better it would be if we combined these programs into a single credit with strong oversight and a greater emphasis on job training and work placement, where an individual prosperity plan could be developed for each unemployed or underemployed worker that would help move them into a better life financially.

So, we continue to hear about many of the government spending projects our friend on the other side would like to fund. But, a major reason there is no money for these new projects is because of the huge rising interest payments on our massive debt. We have squandered our financial inheritance and are fast moving to destroy the American self-reliance and work ethic that has made our nation so dynamic.

Let us put things in perspective. Last year, we paid out $221 billion in interest, but the Congressional Budget Office says that payment will rise in 2024 to $880 billion. The President says it will rise in his budget to $812 billion. That single year's interest payment is 300 times what we spend today on our National Parks. It is 20 times what we spend today on highways. It is enough to fund our Federal education programs for ten years. And the President and many in the Senate, in a time of slow growth and low job creation, want to double the number of guest workers to take jobs that are needed for our unemployed. If we care about economic growth, if we care about prosperity, than we have got to recognize these rising interest payments threaten to drown our economy.

We need to create more growth, more jobs, and better pay. Some, I think, in this country believe higher wages are bad. I do not believe higher wages are bad. It seems to me we have a surplus of labor because wages are falling. In this economy, if we actually have a shortage of labor, a tight labor market, wages would be going up.

Here is how to get this economy on the right track, it seems to me, without adding to the debt. Produce more American energy, creating jobs right here in America, keeping wealth at home. Eliminating all costly and non-productive regulations, and there are lots of them. Make the tax code simpler and more growth oriented. Ensure fair trade for U.S. workers by holding our foreign trading partners accountable. We cannot allow this continued massive currency manipulation, either. Adopt an immigration policy that serves our national interests and the interests of working poor in America. And last week, our House Democrats endorsed a plan that would double the flow of new immigrant workers into America—double the flow—which would further reduce wages and job prospects.

We need to turn the welfare office into a job training center. Streamlining the government itself, make our government leaner and more productive to lessen the wealth it extracts from America. And, finally, let us balance the Federal budget and create confidence in our financial future and security for our children.

All of these steps would create jobs and growth without adding to the debt. All of these steps would create rising incomes and wages. All of these steps would grow the middle class, not the government.

Thank you, Madam Chair.

Chairman MURRAY. Thank you.

With that, we are going to turn to our three witnesses, and again, thank you all for coming here today.

Dr. Stiglitz, we will begin with you.

STATEMENT OF JOSEPH STIGLITZ, PH.D., UNIVERSITY PROFESSOR OF ECONOMICS, COLUMBIA UNIVERSITY

Mr. STIGLITZ. Well, thank you very much. It is a great pleasure for me to discuss with you one of the critical issues facing our country is growing inequality, the effect it is having on our economy, and the policies that we might undertake to alleviate it.

America has achieved the distinction, as you pointed out, of becoming the country with the highest level of income inequality among the advanced countries. Matters have become worse in every dimension. More money, more than a fifth of all income, goes to the top. More people are in poverty at the bottom. And the middle class, long the core strength of our society, has seen its income stagnate. Median household income adjusted for inflation today is lower than it was a quarter-century ago. There is a vicious circle. Our high inequality is one of the major contributing factors to our weak economy and our low growth.

Data describing the other dimensions of America's inequality are even worse. Inequalities in wealth are even greater than income, and there are marked inequalities in health. The most invidious aspect of U.S. inequality, however, is the inequality of opportunity that you referred to earlier.

America has become the advanced country not only with the highest level of inequality of outcomes, but is among those with the least equality of opportunity. The statistics show that the American dream is a myth. The life prospects of a young American are more dependent on the income and education of his parents than in other advanced countries. We have betrayed one of our most fundamental values. The result is that we are wasting our most valuable resource, our human resources. Millions of those at the bottom are not able to live up to their potential.

This morning, I want to make eight observations concerning this inequality. The first is that this inequality is largely the result of policies, of what we do and do not do. The laws of economics are universal. The fact that in some countries, there is so much less inequality and so much more equality of opportunity, the fact that in some countries, inequality is not increasing, it is even decreasing, is not because they have different laws of economics. Every aspect of our economic, legal, and social frameworks helps shape our inequality. In virtually every domain, we have made decisions that help enrich the top at the expense of the rest.

The second observation is that much of the inequality at the top cannot be justified as just desserts for the large contributions that these individuals have made. Disproportionately, they are those who have excelled in rent seeking and wealth appropriation, in figuring out how to get a larger share of the nation's pie rather than enhancing the size of that pie.

Thirdly, the idea that one should not worry about inequality because everyone will benefit as money trickles down has been thoroughly discredited. While the top has been doing very well, the rest has been stagnating.

Fourthly, this recession has, in turn, made inequality much worse. Ninety-five percent of the gains since the so-called recovery have gone to the top one percent.

Fifth, it is not the case that our economy needs this inequality to continue to grow. One of the popular misconceptions is that those at the top are the job creators and giving more money to them will, thus, create more jobs. America has both creative and entrepreneurial people throughout the income distribution. What creates jobs is demand. When there is demand, America's firms will create the jobs to satisfy that demand. This growing inequality is, in fact, weakening demand, one of the reasons that inequality is bad for economic performance.

Sixth, we pay a high price for this inequality, for the extremes to which inequality has grown in the nature of inequality in America, both in outcomes and opportunities. A divided society does not function well. Our democracy is undermined as economic inequality translates into political inequality. America's politics are increasingly better described as a result of a system not of one person, one vote, but of one dollar, one vote.

Greater inequality leads to lower growth and more instability. These ideas now have become mainstream. Even the IMF, as you mentioned, has embraced them. We used to think of there being a trade-off. We could achieve more equality, but only at the expense of giving up on overall economic performance. Now, we realize that greater equality and improved economic performance are complements.

This is especially true if you focus on appropriate measures of growth, focusing not on what is happening on average or to those at the top, but how the economy is performing for the typical American, reflected, for instance, in median income. For too many, perhaps even a majority, the American economy has not been delivering.

And if our economy is not delivering, it not only hurts our people, it undermines our position of leadership in the world. Will other countries want to emulate an economic system in which most individuals' incomes are simply stagnating? We pay a price, not only in terms of weak economy today, but lower growth in the future. With nearly one in four American children growing up in poverty, many of whom face a lack of access to adequate nutrition and education, the country's long-term prospects are being put into jeopardy.

The seventh observation is that the weaknesses in our economy have important budgetary implications. The budget deficits of recent years are a result of our weak economy, not the other way around.

The final observation I want to make is that the role of policy in creating inequality means there is a glimmer of hope. There are policies that could reduce the extremes of inequality and increase opportunity. In the last chapter of my book, The Price of Inequality, I outline 21 such policies affecting both the distribution of income before taxes and transfers and after. Most of the policies are familiar: More support for education, including preschool; increasing the minimum wage; strengthening the Earned Income Tax Credit; giving more voice to workers in the workplace, including through unions; more effective enforcement of anti-discrimination laws; better corporate governance; financial regulations and antitrust laws more effectively enforced; and a fairer tax system.

The special provisions for capital gains and dividends not only distort the economy, but with the vast majority of the benefits going to the top, increase inequality. At the same time, they impose enormous budgetary costs of the kind that Mr. Sessions has emphasized, almost $2 trillion, if we include the provisions of step-up of basis from the special provisions for capital gains and dividends. If we are to avoid the creation of a new plutocracy in the country, we have to retain a good system of inheritance and estate taxation. We need to make sure that everyone who has the potential to go to college can do so, no matter what the income of his parents, and to do so without undertaking crushing loans.

In the past, when our country reached these extremes of inequality at the end of the 19th century, in the Gilded Age or in the Roaring '20s, it pulled back from the brink. It enacted policies and programs that provided hope that the American dream could return to being a reality. We are now at one of those pivotal points in history. I hope we once again will make the right decisions. You and your committee and the budget decisions that you will be making play a vital role in setting the country in the right direction.

I would like to also submit for the record the paper that I wrote on reforming taxation to promote growth and equity, where I show that we can actually raise the revenue that we need to address the problems of inequality and address the problems of the budget deficit in ways, as I say, that will reduce inequality and promote economic growth.

Chairman MURRAY. Okay. Thank you very much. Without objection.

[The prepared statement of Mr. Stiglitz follows:]

Testimony to the United States Senate
Budget Committee
Hearing on Opportunity, Mobility, and Inequality in Today's Economy
April 1, 2014

Joseph E. Stiglitz
University Professor
Columbia University

The Price of Inequality: Why inequality matters and what can be done about it

Joseph E. Stiglitz[1]

It is a great pleasure for me to discuss with you one of the critical issues facing our country, its growing inequality, the effect it is having on our economy, and the policies that we might undertake to alleviate it. America has achieved the distinction of becoming the country with the highest level of income inequality among the advanced countries. While there is no single number that can depict all aspects of society's inequality, matters have become worse in every dimension: more money goes to the top (more than a fifth of all income goes to the top 1%), more people are in poverty at the bottom, and the middle class—long the core strength of our society—has seen its income stagnate. Median household income, adjusted for inflation, today is lower than it was in 1989, a quarter century ago.[2] An economy in which most citizens see no progress, year after year, is an economy that is failing to perform in the way it should. Indeed, there is a vicious circle: our high inequality is one of the major contributing factors to our weak economy and our low growth.

As disturbing as the data on the growing inequality in income are, those that describe the other dimensions of America's inequality are even worse: inequalities in wealth are even greater than income, and there are marked inequalities in health, reflected in differences, for instance, in life expectancy. But perhaps the most invidious aspect of US inequality is the inequality of opportunity. America has become the advanced country not only with the highest level of inequality, but is among those with the least equality of opportunity—the statistics show that

[1] University Professor, Columbia University. Testimony prepared for presentation to Senate Budget Committee, April 1, 2014.
[2] For large segments of the American population, matters are even worse. The inflation adjusted median income of a male worker with only a high school degree has fallen by 47% from 1969 to 2009. For additional data sources and explanation of these trends, see my "Reforming Taxation to Promote Growth and Equity," forthcoming as a Roosevelt institute working paper, which is submitted along with this written testimony. Inequality is discussed in even greater detail in my 2012 book, *The Price of Inequality: How Today's Divided Society Endangers Our Future*, New York: W.W. Norton.

the American dream is a myth; that the life prospects of a young American are more dependent on the income and education of his parents than in other developed countries. We have betrayed one of our most fundamental values. And the result is that we are wasting our most valuable resource, our human resources: millions of those at the bottom are not able to live up to their potential.

This morning, I want to make eight observations concerning this inequality. The first is that this inequality is largely a result of policies—of what we do and don't do. The laws of economics are universal: the fact that in some countries there is so much less inequality and so much more equality of opportunity, the fact that in some countries inequality is not increasing—it is actually decreasing—is not because they have different laws of economics. Every aspect of our economic, legal, and social frameworks helps shape our inequality: from our education system and how we finance it, to our health system, to our tax laws, to our laws governing bankruptcy, corporate governance, the functioning of our financial system, to our anti-trust laws. In virtually every domain, we have made decisions that help enrich the top at the expense of the rest.

The second observation is that much of the inequality at the top can't be justified as "just deserts" for the large contributions that these individuals have made. If we look at those at the top, they are not those who have made the major innovations that have transformed our economy and society; they are not the discoverers of DNA, the laser, the transistor; not the brilliant individuals who made the discoveries without which we would not have had the modern computer. Disproportionately, they are those who have excelled in rent seeking, in wealth appropriation, in figuring out how to get a larger share of the nation's pie, rather than enhancing the size of that pie. (Such rent seeking activity typically actually results in the size of the economic pie shrinking from what it otherwise would be.) Among the most notable of these are, of course, those in the financial sector, who made their wealth by market manipulation, by engaging in abusive credit card practices, predatory lending, moving money from the bottom and middle of the income pyramid to the top. So too, a monopolist makes his money by contracting output from what it otherwise would be, not by expanding it.

Thirdly, the idea that one shouldn't worry about inequality because everyone will benefit as money trickles down, has been thoroughly discredited. In some ways, I wish it were true, for if it were, it would mean that the average American would be doing very well today, because we have thrown so much money at the top. But the statistics I gave a few minutes ago shows that it is not true: while the top has been doing very well, the rest has been stagnating.

Fourthly, this recession—while in no small measure caused by the financial sector which itself is responsible for so much of our inequality today—has in turn made inequality so much worse. 95% of the gains since the so-called recovery have gone to the top 1%.

Fifth, it is not the case that our economy *needs* this inequality to continue to grow. One of the popular misconceptions is that those at the top are the job creators; and giving more money to them will thus create more jobs. America is full of creative entrepreneurial people throughout the income distribution. What creates jobs is *demand*: when there is demand, America's firms (especially if we can get our financial system to work in the way it should, providing credit to small and medium-sized enterprises) will create the jobs to satisfy that demand. And unfortunately, given our distorted tax system, for too many at the top, there are incentives to destroy jobs by moving them abroad. This growing inequality is in fact weakening demand—one of the reasons that inequality is bad for economic performance.

Sixth, we pay a high price for this inequality, in terms of our democracy and nature of our society. A divided society is different—it doesn't function as well. Our democracy is undermined, as economic inequality inevitably translates into political inequality. I describe in my book how the outcomes of America's politics are increasingly better described as the result of a system not of one person one vote but of one dollar one vote. One of the prices we pay for the extremes to which inequality has grown and the nature of inequality in America—both inequality in outcomes and inequalities of opportunities—is that we have a weaker economy. Greater inequality leads to lower growth and more instability. These ideas now have become mainstream: even the IMF has embraced them. We used to think of there being a trade-off: we could achieve more equality, but only at the expense of giving up on overall economic performance. Now we realize that, especially given the extremes of inequality achieved in the US and the manner in which it is generated, greater equality and improved economic performance are complements.

This is especially true if we focus on appropriate measures of growth, focusing not on what is happening on average, or to those at the top, but how the economy is performing for the typical American, reflected for instance in median income. For too many—perhaps even a majority—the American economy has not been delivering. And if our economy is not delivering, it not only hurts our people, it undermines our position of leadership in the world: will other countries want to emulate an economic system in which most individuals' incomes are simply stagnating?

We pay a price not only in terms of a weak economy today, but lower growth in the future. With nearly one in four American children growing up in poverty,[3] many of whom face a lack of access to adequate nutrition and education, the country's long-term prospects are being put into jeopardy.

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[3] See http://www.childstats.gov/americaschildren/eco1a.asp (accessed March 30, 2014).

The seventh observation is that the weaknesses in our economy have important budgetary implications. The budget deficits of recent years are a result of our weak economy, not the other way around. If we had more robust growth, our budgetary situation would be far improved. That's why investments in decreasing inequality and increasing equality of opportunity make sense not only for our economy, but for our budget. When we invest in our children, the asset side of our country's balance sheet goes up, even more than the liability set: any business would see that its net worth is increased. In the long run, even looking narrowly on the liability side of the balance sheet, it will be improved, as these young people earn higher incomes and contribute more to the tax base.

The final observation I want to make is that the role of policy in creating inequality means there is a glimmer of hope. Policy created the problem, and it can help get us out of it. There are policies that could reduce the extremes of inequality and increase opportunity—enabling our country to live up to the values to which it aspires. There is no magic bullet, but there are a host of policies that would make a difference. In the last chapter of my book, *The Price of Inequality,* I outline 21 such policies, affecting both the distribution of income before taxes and transfers and after. We need to move more people out of poverty, strengthen the middle class, and curb the excesses at the top. Most of the policies are familiar: more support for education, including pre-school; increasing the minimum wage; strengthening the earned-income tax credit; giving more voice to workers in the workplace, including through unions; more effective enforcement of anti-discrimination laws; better corporate governance, to curb the abuses of CEO pay; better financial sector regulations, to curb not just market manipulation and excessive speculative activity, but also predatory lending and abusive credit card practices; better anti-trust laws, and better enforcement of the laws we have; and a fairer tax system—one that does not reward speculators or those that take advantage of off-shore tax havens with tax rates lower than honest Americans who work for a living. If we are to avoid the creation of a new plutocracy in the country, we have to retain a good system of inheritance and estate taxation, and ensure that it is effectively enforced. We need to make sure that everyone who has the potential to go to college can do so, no matter what the income of his parents—and to do so without undertaking crushing loans. We stand out among advanced countries not only in our level of inequality, but also on how we treat student loans in our bankruptcy loans. A rich person borrowing to buy a yacht can get a fresh start, and have his loans forgiven; not so for a poor student striving to get ahead. The special provisions for capital gains and dividends not only distort the economy, but, with the vast majority of the benefits going to the very top, increase inequality—at the same time that they impose enormous budgetary costs: $2 trillion dollars over the next ten years, according to the CBO.[4] While the elimination of the special

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[4] See Congressional Budget Office, 2013, *The Distribution of Major Tax Expenditures in the Individual Income Tax System,* May, p.31, available at http://cbo.gov/sites/default/files/cbofiles/attachments/TaxExpenditures_One-

provisions for capital gains and dividends is the most obvious reform in the tax code that would improve inequality and raise substantial amounts of revenues, there are many others that I discuss in the attached paper which I would like to submit for the record.

A final point is that we must be careful of how we measure our progress. If we use the wrong metrics, we will strive for the wrong things. Economic growth *as measured by GDP* is not enough—there is a growing global consensus that GDP does not provide a good measure of overall economic performance. What matters is whether growth is sustainable, and whether *most* citizens see their living standards rising year after year. This is the central message of the International Commission on the Measurement of Economic Performance and Social Progress, which I chaired. Since the beginning of the new millennium, our economy has clearly not been performing in either of these dimensions. But the problems in our economy have been manifest for longer. As I have emphasized, a key factor underlying America's economic problems today is its growing inequality and the low level of opportunity.

In the past, when our country reached these extremes of inequality, at the end of the 19th century, in the gilded age, or in the Roaring 20s, it pulled back from the brink. It enacted policies and programs that provided hope that the American dream could return to being a reality.

We are now at one of these pivotal points in history. I hope we once again will make the right decisions. You and your committee, in the budget decisions that you will be making, play a vital role in setting the country in the right direction.

Column.pdf (accessed March 28, 2014). This figure includes the effects of the "step-up of basis at death" provision, which reduces the taxes that heirs pay on capital gains. Not including this provision, the ten-year budgetary cost of preferential treatment for capital gains and dividends is $1.34 trillion.

Chairman MURRAY. Dr. Chetty, thank you very much.

STATEMENT OF RAJ CHETTY, PH.D., WILLIAM HENRY BLOOMBERG PROFESSOR OF ECONOMICS, HARVARD UNIVERSITY

Mr. CHETTY. Chair Murray, Ranking Member Sessions, and members of the committee, it is my pleasure to speak to you today about opportunity and inequality in the United States.

As you know, America is often hailed as the land of opportunity, a society in which children can succeed regardless of their family background. However, opportunities for upward income mobility in the U.S. are actually lower than in other countries.

To take one statistic, a child born to parents in the bottom fifth of the income distribution in America has a 7.5 percent chance of reaching the top fifth of the income distribution, as you see here on the slides. In contrast, if you look at Denmark, a child born in the bottom fifth of the income distribution there has an 11.7 percent chance of reaching the top fifth. So, that is, children in Denmark have a 50 percent higher rate of realizing the American dream than children growing up in America.

Now, this low social mobility in the U.S. is not a new or temporary problem. Mobility has been low in the U.S. for the past several decades. However, because of the increase in inequality discussed by Professor Stiglitz, the lack of mobility is a much more pressing problem today. In a society without much inequality, mobility would not matter very much because everyone would have similar incomes regardless of whether they moved up or not. But in a society with very high levels of inequality, a lack of opportunity is a severe problem and can substantially hamper economic growth.

Now, the stability and mobility over time has led some to question whether social mobility can be meaningfully influenced by policy. I think the answer to this question is, yes, mobility can be improved by changes in policies that you can shape. The reason I am confident that mobility is malleable is that there are substantial differences in mobility across communities within America, as illustrated in this map here, which I am going to turn to next.

So, this is a heat map which shows you the chance that a child born to parents in the bottom fifth of the distribution, the income distribution, reaches the top fifth across areas of the United States. Lighter colors are areas with higher levels of upward mobility. So, what you can see from this map is that in some parts of the U.S., such as the Southeast or the Rust Belt, children who are born in the bottom fifth of the distribution have less than a five percent chance of reaching the top fifth. In contrast, in other areas, such as the Great Plains and the West Coast, the odds exceed 15 percent.

Now, one thing you have to remember is no matter what policies you enact, you are never going to have more than 20 percent of people in the top 20 percent, right. So, the fact that you have odds of 15 percent versus five percent, you know, these are really big differences in rates of upward mobility across places within the U.S.

Now, there is substantial variation in upward mobility even among the largest cities. So, to take some examples here shown in this table, in cities like Salt Lake City and San Jose, you have rates of mobility that are comparable to Denmark and the most mobile countries in the world. But in contrast, if you look at other cities, like Milwaukee or Charlotte, North Carolina, the odds of reaching the—rising from poverty to the upper parts of the income distribution are much, much lower, lower than any developed country for which we currently have statistics.

Now, this variation in economic mobility across areas in the U.S., in my view, is actually some reason for optimism, because if we can make every city in America have mobility rates like San Jose or Salt Lake City, the United States would become one of the most upwardly mobile countries in the world and this would dramatically change economic growth and the structure of the economy.

So, this naturally leads to the next question which we have investigated in our research. What makes some places in America have much higher rates of upward mobility than others? So, we find five key factors that are correlated with differences in upward mobility across areas.

The first is segregation. Areas with more racially integrated neighborhoods and more mixed-income neighborhoods tend to have higher rates of upward mobility.

The second, as Senator Murray mentioned, is inequality. Areas with greater inequality, in particular, a smaller middle class, have less opportunity for mobility, as well.

Third, as you might expect, areas with better schools, for instance, better teachers, smaller classes, better funding, tend to have higher levels of upward mobility.

Fourth, areas with greater social capital, which are proxies for the strength of social networks and community involvement in an area, also tend to have higher levels of upward mobility.

And finally, mobility is much higher in areas with stronger family structures, areas with fewer single parents, for example. Now, a very important thing to note there is that even children of married parents have higher rates of upward mobility if they live in a community with fewer single parents. So, this is something about the structure of the community and not, per se, whether you have single or married parents.

So, these correlations do not necessary tell us what causes the differences in mobility across areas, but the results of the research that I have been describing point to certain types of policy solutions, and that is the last set of issues that I would like to discuss.

First, since rates of upward mobility vary widely across cities, as I have shown you, place-based initiatives that focus on specific areas, for instance, improving mobility in Charlotte or Milwaukee, may be more effective than addressing the problem at a national level. Such policies might include targeted tax credits, efforts to revitalize local communities such as Promise Zones, or funding for improvements in local schools and investments in infrastructure.

Second, much of the spatial variation in children's outcomes emerges before they start working. We find that children in areas with low-income mobility also have higher teenage birthrates and lower college attendance rates. So, by the time they are in their teenage years, you are seeing children in Charlotte and in Milwaukee falling behind if they are from disadvantaged families. This tells me that it is important to improve childhood environments rather than focusing exclusively on providing jobs and ladders for opportunity as adults. I think both are very important.

Third, there is clear evidence that improving primary education can have substantial effects on mobility. For example, in a recent study tracking one million students over 25 years, my colleagues and I find that a high-quality, excellent teacher generates more than $1.4 million in earnings gains for a single classroom of students over their lives. Hence, programs that increase teacher salaries and provide incentives for local school districts to retain and recruit higher-quality teachers are likely to have very large payoffs. Importantly, such investments in education have substantial returns throughout childhood, not just in the earliest years.

Finally, perhaps the simplest and most cost effective way to improve mobility may be to construct and publicize local statistics on economic mobility. For instance, offering awards or grants to areas that have substantially improved their rates of upward mobility could spark local policy changes. I think that shining a spotlight on the communities where children do have opportunities to succeed can enable others to learn from their example and increase opportunities for economic mobility throughout America.

Thank you.

[The prepared statement of Mr. Chetty follows:]

Improving Opportunities for Economic Mobility in the United States

Testimony for the

Budget Committee
United States Senate

Hearing on "Opportunity, Mobility, and Inequality in Today's Economy"
Dirksen Senate Office Building, Room SD-608
April 1, 2014

by

Raj Chetty
Professor of Economics, Harvard University

The United States is often hailed as the "land of opportunity," a society in which a child's chances of success depend little on her family background. However, opportunities for upward income mobility in the U.S. are lower than in other countries (Corak 2013). For example, a child born to parents in the bottom fifth of the income distribution has a 7.5% chance of reaching the top fifth of the income distribution in the United States. But in Denmark, a child born in the bottom fifth has an 11.7% chance of reaching the top fifth – a 50% higher rate of realizing the "American Dream" of moving up the income ladder than children in America.[1]

Improving the rate of upward income mobility is an important issue for policy makers not just because it is one of the core principles of American society but also because improving mobility can have substantial economic payoffs. Unlike other issues that involve sharp tradeoffs, increases in absolute upward income mobility are likely to benefit everyone in society. Children from disadvantaged backgrounds naturally benefit directly from higher levels of upward mobility. But affluent individuals benefit as well, because upward mobility contributes to economic growth and reduces the number of individuals receiving transfers from the government, saving taxpayers money.

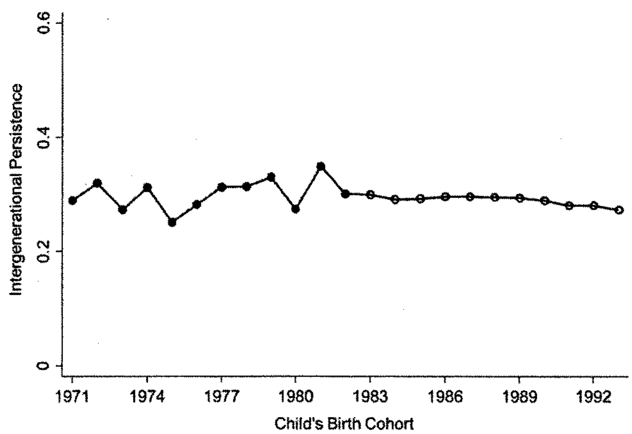
This testimony discusses recent research that offers lessons about how to improve economic mobility in the United States. It draws primarily on evidence from the Equality of Opportunity Project, which presents comprehensive statistics on mobility in the United States based on millions of anonymous earnings records. These statistics reveal that mobility has been low in the U.S. relative to other developed countries for the past several decades. While mobility has been stagnant over time, there is substantial geographic variation in mobility within the U.S., with some areas offering rates of upward mobility comparable to the most mobile countries in the world, such as Denmark. Based on this evidence, I discuss a set of policies – including place-based initiatives and investments in improving the quality of primary education – that can increase upward mobility.

Trends in Mobility

I begin by discussing trends in intergenerational mobility in the U.S. In a recent paper (Chetty et al. 2014a), we find that percentile-based measures of intergenerational mobility have not changed significantly between the 1971-1993 birth cohorts (see Figure 1 below). For example, the probability that a child reaches the top fifth of the income distribution given parents in the bottom fifth of the income distribution is 8.4% for children born in 1971, compared with 9.0% for those born in 1986. Children born to the highest-income families in 1984 were 74.5 percentage points more likely to attend college than those from the lowest-income families. The corresponding gap for children born in 1993 is 69.2 percentage points.

[1] Other measures of mobility – such as the probability of reaching the middle class or the correlation between parent and child income – exhibit similar patterns to those discussed in this testimony. I focus on the probability of moving from the bottom to top fifth for simplicity.

Figure 1. Time Trends in Intergenerational Mobility in the U.S.



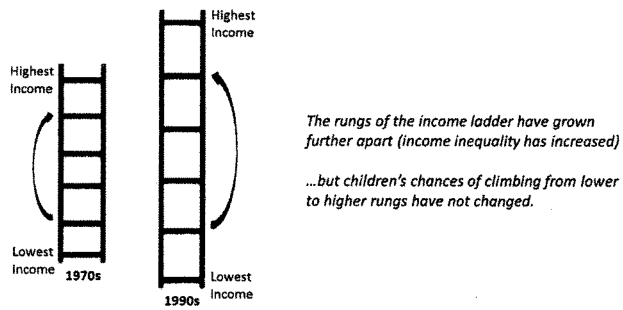
This figure plots the difference in average income percentiles for children born to low vs. high-income parents in each year from 1971-1993. On average, children from the poorest families grow up to be 30 percentiles lower in the income distribution than children from the richest families, a gap that has been stable over time. For children born after 1986, estimates are predictions based on college attendance rates.

Putting together these results with evidence from Hertz (2007) and Lee and Solon (2009) that intergenerational mobility did not change significantly between the 1950 and 1970 birth cohorts, we conclude that rank-based measures of social mobility have remained stable over the second half of the twentieth century in the United States.

Although rank-based measures of mobility remained stable, income inequality increased substantially over the period we study.[2] Hence, the consequences of the "birth lottery" – the parents to whom a child is born – are larger today than in the past. A useful visual analogy (shown in Figure 2) is to envision the income distribution as a ladder, with each percentile representing a different rung. The rungs of the ladder have grown further apart (inequality has increased), but children's chances of climbing from lower to higher rungs have not changed (rank-based mobility has remained stable).

[2] This result may be surprising in light of the well known cross-country relationship between inequality and mobility, termed the "Great Gatsby Curve" by Krueger (2012). However, much of the increase in inequality has come from the extreme upper tail (e.g., the top 1%) in recent decades, and top 1% income shares are not strongly associated with mobility across countries or across metro areas within the U.S. (Chetty et al. 2014b). Moreover, other countervailing trends – such as improved civil rights for minorities, greater access to higher education, and the war on poverty – may have offset the impacts of increased inequality.

Figure 2. Changes in the Income Ladder in the U.S.



Combined with the increase in inequality, the stability in rates of mobility means that children's economic prospects depend more heavily on their parents' income today than in the past. The fact that mobility is significantly lower in the U.S. than in most other developed countries (Corak 2013) is thus a more imperative problem today than it was half a century ago.

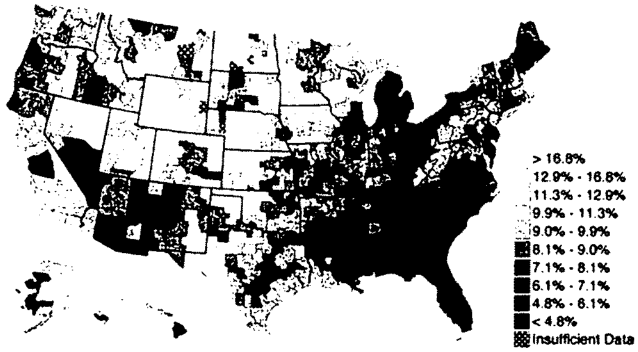
The stability in mobility over time had led some to question whether social mobility can be meaningfully influenced by policy (Clark 2014). Is mobility in the U.S. destined to be low relative to other countries because of its unique characteristics? Next, I turn to evidence on differences in mobility across communities within the United States, which paints a much more positive picture and suggests that mobility can in fact be improved in the U.S.

Geographical Differences in Mobility

In Chetty et al. (2014b), we characterize geographical variation in intergenerational mobility across the United States. We construct measures of intergenerational mobility for 741 "commuting zones" (CZs). Commuting zones are geographical aggregations of counties that are similar to metro areas but also cover rural areas. We assign children to a CZ based on their location at age 16 (no matter where they live as adults), so that their location represents where they grew up. When analyzing local area variation, we rank both children and parents based on their positions in the national income distribution. Hence, our statistics measure how well children do relative to those in the nation as a whole rather than those in their own particular community.

We find substantial variation in mobility across areas, as illustrated in Figure 3. This heat map shows the probability that a child who grew up in a bottom-quintile income family reaches the top-quintile of the income distribution across areas of the U.S. In some parts of the U.S. – such as the Southeast and the Rust Belt – children in the bottom quintile have less than a 5% chance of reaching the top quintile. In other areas, such as the Great Plains and the West Coast, children in the bottom quintile have more than a 15% chance of reaching the top quintile.

Figure 3. The Geography of Intergenerational Mobility



This map shows the probability that a child who grew up in bottom-quintile income families reaches the top-quintile of the income distribution across areas of the U.S. Lighter colors represent areas where children from low-income families are more likely to move up in the income distribution.

Table 1. Upward Mobility in the 50 Largest Metro Areas: The Top 10 and Bottom 10

Rank	Commuting Zone	Odds of Reaching Top Fifth from Bottom Fifth	Rank	Commuting Zone	Odds of Reaching Top Fifth from Bottom Fifth
1	San Jose, CA	12.9%	41	Cleveland, OH	5.1%
2	San Francisco, CA	12.2%	42	St. Louis, MO	5.1%
3	Washington DC	11.0%	43	Raleigh, NC	5.0%
4	Seattle, WA	10.9%	44	Jacksonville, FL	4.9%
5	Salt Lake City, UT	10.8%	45	Columbus, OH	4.9%
6	New York, NY	10.5%	46	Indianapolis, IN	4.9%
7	Boston, MA	10.5%	47	Dayton, OH	4.9%
8	San Diego, CA	10.4%	48	Atlanta, GA	4.5%
9	Newark, NJ	10.2%	49	Milwaukee, WI	4.5%
10	Manchester, NH	10.0%	50	Charlotte, NC	4.4%

There is substantial variation in upward mobility even amongst large cities that have comparable economies and demographics. Table 1 lists upward mobility statistics for the 50 largest metro areas, focusing on the 10 cities with the highest and lowest levels of upward mobility. Cities such as Salt Lake City and San Jose have rates of mobility comparable to Denmark and other countries with the highest rates of mobility in the world. Other cities – such as Charlotte and Milwaukee – offer children very limited prospects of escaping poverty. These cities have lower rates of mobility than any developed country for which data are currently available.

In ongoing work, we find that if a child moves from a city with low upward mobility (such as Milwaukee) to a city with high upward mobility (such as Salt Lake City), her own income in adulthood rises in proportion to the time she is exposed to the better environment. This finding shows that much of the difference in upward mobility across areas is driven by a causal effect of differences in the local environment rather than differences in the characteristics of the people who live in different cities.

The variation in economic mobility across cities in the U.S. is reason for optimism. If we can make every city in America have mobility rates like San Jose or Salt Lake City, the United States would become one of the most upwardly mobile countries mobile in the world. This naturally leads to the next question: what makes some places in America have much higher rates of upward mobility than others?

Correlates of the Spatial Variation in Mobility

To understand the determinants of mobility, in Chetty et al. (2014b), we explore the correlations between upward mobility and various factors that have been discussed in prior work by sociologists and economists.

The first pattern we document is that upward income mobility is significantly lower in areas with larger African-American populations. However, white individuals in areas with large African-American populations also have lower rates of upward mobility, implying that racial shares matter at the community rather than individual level. One mechanism (among many others) for such a community-level effect of race is segregation. Areas with larger black populations tend to be more segregated by income and race, which could affect both white and black low-income individuals adversely. Indeed, we find a strong negative correlation between standard measures of racial and income segregation and upward mobility. Moreover, we also find that upward mobility is higher in cities with less sprawl, as measured by commute times to work. These findings lead us to identify *segregation* as the first of five major factors that are strongly correlated with mobility.

The second factor we explore is *inequality*. CZs with larger Gini coefficients have less upward mobility, consistent with the "Great Gatsby curve" documented across countries (Krueger 2012, Corak 2013). In contrast, top 1% income shares are not highly correlated with intergenerational mobility both across CZs within the U.S. and across countries. Although one cannot draw definitive conclusions from such correlations, they suggest that the factors that erode the middle class hamper intergenerational mobility more than the factors that lead to income growth in the upper tail.

Third, proxies for the quality of the K-12 *school* system are also correlated with mobility. Areas with higher test scores (controlling for income levels), lower dropout rates, and smaller class sizes have higher rates of upward mobility. In addition, areas with higher local tax rates, which are predominantly used to finance public schools, have higher rates of mobility.

Fourth, *social capital* indices (Putnam 1995) – which are proxies for the strength of social networks and community involvement in an area – are very strongly correlated with mobility. For instance, high upward mobility areas tend to have more religious individuals and greater participation in local civic organizations.

Finally, the strongest predictors of upward mobility are measures of *family structure* such as the fraction of single parents in the area. As with race, parents' marital status does not matter purely through its effects at the individual level. Children of married parents also have higher rates of upward mobility if they live in communities with fewer single parents. Hence, single parenthood itself is not a key predictor of differences in upward mobility; rather, living in a community with many single parents is associated with lower upward mobility.

We find modest correlations between upward mobility and local tax and government expenditure policies and no systematic correlation between mobility and local labor market conditions, rates of migration, or access to higher education.

While these correlations suggest that differences in local policies and community structures could have important effects on upward mobility, it is very important to recognize that the correlations cannot be interpreted as causal effects. For instance, areas with high rates of segregation may also have other characteristics that could be the root cause driving the differences in children's outcomes. Hence, one cannot draw policy lessons directly from these correlations without further research into causal pathways. However, the evidence discussed above does shed some light on the types of policies that can improve mobility. I turn to these implications in the next and final section.

Policy Implications

Combined with other evidence from research, the results summarized above yield several lessons for policies to improve upward mobility in America.

1. *Place-Based Initiatives*. Since rates of upward mobility vary widely across cities, place-based policies that focus on specific cities – such as Charlotte or Milwaukee – may be more effective than addressing the problem at a national level. Such policies may include targeted tax credits, efforts to revitalize local communities via efforts such as "promise zones," or funding for improvements in local schools and investments in infrastructure. For example, the federal government could provide matching grants to local communities that undertake specific initiatives to improve mobility in their area with demonstrable impacts.

2. *Focus on Childhood Environments.* The data show that much of the spatial variation in children's outcomes emerges before they enter the labor market. In particular, children in areas with low income mobility also have higher teenage birth rates and lower college attendance rates. These findings indicate that the differences in mobility are driven by factors that affect children while they are growing up. Hence, it is important to prioritize investments that change childhood environments rather than focusing exclusively on providing jobs and ladders of opportunity for adults who are already working.

3. *Invest in Improving the Quality of Education.* Among the factors correlated with mobility discussed above, improvements in the quality of education have the clearest causal effects on

upward mobility. For example, in a study that tracked more than 1 million children from childhood to early adulthood (Chetty, Friedman, and Rockoff 2013), we find that better teachers – as measured by test-score based value-added metrics – substantially increase students' earnings and college attendance rates. We estimate that an excellent teacher generates more than $1.4 million of earnings gains for a single classroom of students over their lives. These findings imply that programs that increase teacher salaries and provide incentives for local school districts to recruit and retain higher quality teachers are likely to be valuable. Similarly, other studies have presented evidence from randomized experiments showing that investments in improving pre-schools (e.g., Heckman et al. 2010) and reducing the size of classrooms (e.g., Chetty et al. 2011, Fredriksson et al. 2013, Dynarski et al. 2013) can also have significant long-term payoffs. Importantly, such investments in education have substantial returns throughout childhood, not just in the earliest years.

4. *Disseminate Information on Local Performance.* Perhaps the most cost-effective way to improve mobility may be to publicize local statistics on economic mobility and other related outcomes. Simply drawing attention to the areas that need improvement can motivate local policy makers to take action. Moreover, without such information, it is difficult to determine which programs work and which do not. The federal government is well positioned to construct such statistics at minimal cost with existing data. The government could go further by offering awards or grants to areas that have substantially improved their rates of upward mobility. Shining a spotlight on the communities where children have opportunities to succeed can enable others to learn from their example and increase opportunities for economic mobility throughout America.

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Chairman MURRAY. Thank you very much.
Dr. HALL.

STATEMENT OF KEITH HALL, PH.D., SENIOR RESEARCH FELLOW, MERCATUS CENTER

Mr. HALL. Chairwoman Murray, Ranking Member Sessions, and members of the committee, thank you for the invitation to discuss income and equality and today's economy. I appreciate the opportunity to testify today.

Nearly five years after the end of the Great Recession, the labor market today is still far from full recovery. The share of the working-age population with employment remains lower today than at the end of the recession in 2009. At the heart of this poor labor market recovery lies weak economic growth.

I want to talk about three things in my testimony. First, I want to talk about disengagement from the labor force. I believe that our unprecedented disengagement from the labor force is the biggest ongoing economic challenge that we face today.

Second, I want to talk about jobs and income inequality. Because of the impact of employment on income inequality, particularly on poverty, I believe that our current disengagement from the labor force is a real concern for income inequality in the U.S. in the near term and we should not lose sight of this fact.

Third, I want to talk about economic policy and income inequality. We need to be keenly aware of what impact current policies and proposed policy changes are likely to have on the size of the U.S. labor force and, therefore, on income inequality in the United States, and this is in the near term, in particular.

First, labor force disengagement. We have had an unprecedented disengagement from the labor force in the United States. This is, I believe, the biggest ongoing economic challenge that we face today. We should, therefore, be very cautious about how our current policy choices may contribute to this problem.

Since the beginning of the recession, participation in the labor force has fallen to a 35-year low of just 63 percent. While some of this decline was expected and is due to an aging population, most was not. In 2013, labor force participation was at a 20-year low or longer for every age range between 20 and 54 years old. If you look at my written testimony and see Figure 1, you will see the data on that.

The adverse effects of this are real for American families. It is well established that individuals experiencing job loss will have large and persistent earnings losses for years afterwards. Also, the young graduating from school into a bad labor market will remain behind in their careers for well over a decade. Further, the longer an individual is out of the labor force, the less likely they are to return to employment. With four million long-term unemployed and likely millions more long-term jobless, this disengagement may already be permanently affecting the size of our labor force going forward.

Fully eliminating the effect of our aging baby boomers reaching retirement, I estimate that the labor force is currently short over 4.5 million people. Last year alone, this amounted to a loss of $500 billion in potential national income.

Second, jobs and income inequality. Let me start with a simple statement. Government spending does not move people out of poverty. Jobs do. I am not suggesting that the government social safety net is not important. However, despite a dramatic increase in government spending on means tested programs, there were a record 46 million people living in poverty in 2012. Lack of employment is the primary cause of this poverty. Most of those aged 18 to 64 years old who were in poverty did not have as much as a single week of employment during 2012. Only about 11 percent had full-time employment.

Further, we have never had a decline in the poverty rate that was not associated with a rise in the rate of employment. And, since the late 1990s, employment appears to be the only thing that reliably reduces poverty. If you look again at my written testimony, Figure 2 shows this relationship. For this reason, I believe that this disengagement from the labor force is our biggest threat to improving income inequality in the United States in the near term.

Third, I want to talk about economic policy and income inequality. Because of the current state of the labor market and its impact on income inequality in the short run, I want to emphasize that policies that either raise the cost of hiring or make it more difficult for individuals to return to the labor force are counterproductive to our labor market recovery. They can even contribute to income inequality through encouraging continued disengagement from the labor force.

I want to briefly mention three examples. First, the proposal to raise the Federal minimum wage from $7.25 to $10.10 an hour may have the perverse and unintended effect of increasing income inequality. It is, of course, a laudable goal to see wages increase, particularly for those who could benefit the most from the raise. However, forcing employers to pay more to low-skilled workers could mean job losses for a group that is already having trouble finding work and fewer hours for a sector of the labor market that mainly works part-time.

No matter what you have heard about the effects of raising the minimum wage, there is a significant amount of economic research that finds raising the minimum wage only benefits some workers at the expense of jobs for others, particularly the least skilled and experienced workers.

The current proposal represents a huge 39 percent increase in the hourly wage cost of hiring for many. Common sense dictates that raising the cost of hiring the least skilled workers will force employers to look to substitutes like higher skilled workers or rapidly advancing technology. The Congressional Budget Office recently agreed, estimating that half-a-million people will lose their jobs as a result. The least skilled and experienced workers will pay this price in job loss.

A second example is the Affordable Care Act. CBO's recent finding that the Affordable Care Act will significantly reduce the incentive to work by the equivalent of more than two million full-time workers in just a few years is deeply concerning.

And, third, a broader example of a counterproductive policy is raising the regulatory burden for companies while we still have a struggling labor market. While new regulation may be important, they raise the cost of production and, therefore, the cost of hiring production workers. Many of those workers have below-average wages to begin with, and in a bad labor market, job loss is much costlier for affected families.

So, in conclusion, our current very low rate of labor force participation needs to be a central focus of policy makers. We should focus on what the government is doing that makes it harder for companies to increase hiring and avoid policies that discourage individuals from reentering the labor force. Government assistance to the low-income and jobless is important, but the reemployment of the jobless is what we need to reduce poverty and lower income inequality.

Thank you.

[The prepared statement of Mr. Hall follows:]

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TESTIMONY

OPPORTUNITY, MOBILITY, AND INEQUALITY IN TODAY'S ECONOMY

BY KEITH HALL
Senior Research Fellow

Testimony before the Senate Budget Committee

April 1, 2014

Chairwoman Murray, Ranking Member Sessions, and members of the Committee: Thank you for the invitation to discuss income inequality and today's economy. I appreciate the opportunity to testify today.

Nearly five years after the end of the Great Recession, the labor market today is still far from full recovery. At just 58.8 percent, the share of the working-age population with employment is still below what it was in 2009. Inadequate growth is at the heart of this poor recovery. We have, in fact, been very fortunate to get a relatively modest level of job creation given the fact that the economy has grown at an average annual rate of just 1.6 percent over the past three years.

The problem of this inadequate job growth for everyone in America can be explained as follows:

- We have seen an unprecedented disengagement from the labor force since the end of the recession. Last year, labor force participation was at its lowest level in 35 years. This is, I believe, the biggest ongoing economic challenge that we face today.
- Unless we stop this trend and begin to bring back the millions of Americans who are no longer in the labor force, we will have permanently lower economic growth, slower income growth, and rising income inequality.
- In order to assist American families to escape poverty, we must focus on policies that support employment by encouraging economic growth, lowering the cost of hiring for employers, and increasing incentives to re-enter the labor force.

LABOR FORCE DISENGAGEMENT

The adverse effects of joblessness are real for American families. It is well established that individuals experiencing job loss have large and persistent earnings losses for years afterwards. Recent estimates find that,

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on average, lower earnings will continue for nearly 20 years. Further, the impact on the long-term jobless is even more severe and millions of jobless today stand the real risk of never returning to the labor force.

Since the beginning of the recession, participation in the labor force has fallen to just 63 percent. This is the equivalent of a withdrawal of nearly 7.5 million people. While some of this decline was expected and is due to an aging population, most was not. In 2013, labor force participation was at a 20-year low or longer for every age range between 20 and 54 years old. (See figure 1.) Fully eliminating the effect of our aging baby boomers reaching retirement, I estimate that the labor force is currently short over 4.5 million people.

This unprecedented disengagement from the labor force has serious implications for the economy. Using CBO's methodology, this 4.5 million-person shortfall in the labor force last year alone was equivalent to a $500 billion shortfall in potential national income. This is a 3.0 percent loss of income for American families.

The problem of disengagement from the labor force needs urgent attention. It has always been true that the longer an individual is out of the labor force, the less likely they are to return to employment. With four million long-term unemployed and likely millions more long-term jobless, this disengagement may already be permanently effecting our labor force, and we could have a permanently smaller workforce. This, I believe, is the biggest threat to improving income inequality in the United States.

EMPLOYMENT AND POVERTY

Despite the end of the recession in 2009 and a dramatic increase in government spending on means-tested programs, there were still a record 46 million people living in poverty in 2012. Federal spending alone on these programs was $750 billion in FY 2011, up over 30 percent from FY 2008. Lack of employment is the primary cause of this poverty. Most of those aged 18 to 64 years old who were in poverty didn't have as much as a single week of employment in 2012. Only about 11 percent had full-time employment.

Government spending does not move people out of poverty—jobs do. We have never had a decline in the poverty rate that wasn't associated with a rise in the rate of employment. Since the late 1990s, employment appears to be the only thing that reliably reduces poverty. (See figure 2.)

We should focus on jobs if our goal is to have a significant impact on income inequality in the United States in the near term. We should be encouraging hiring by helping to lower the cost of hiring to firms. Similarly, we should be encouraging disengaged workers to re-enter the labor force. Policies that either raise the cost of hiring or reduce the incentive for work are counterproductive. They often can even contribute to income inequality by contributing to disengagement from the labor force.

For example, the proposal to raise the minimum wage from $7.25 to $10.10 an hour may have the perverse and unintended effect of increasing income inequality in the United States. It is, of course, a laudable goal to see wages increase, particularly for those who could benefit the most from the raise. However, forcing employers to pay more to low-skilled workers could mean job losses for a group that is already having trouble finding work and fewer hours for a sector of the labor market that mainly works part-time.

No matter what you've heard about the effects of raising the federal minimum wage, there is a significant amount of economic research that finds raising the minimum wage only benefits some workers at the expense of jobs for others—particularly the least skilled and experienced workers. The current proposal represents a huge, 39 percent increase in hourly wage cost of hiring for many. Common sense dictates that raising the cost of hiring the least skilled workers will force employers to look to substitutes like higher skilled workers or rapidly advancing technology.

In 2013, there were 8.8 million people making between $7.25 and $8.25 an hour. I'll call these the "near-minimum-wage" earners. These are the least experienced and least skilled of our workforce. Most are under the age of 25 and have no more than a high school diploma. The biggest economic problem for this group is securing employment of any type. Less than half are even in the labor force, and for those that are, the unemployment rate is 21.7 percent—well over three times the national average.

The Congressional Budget Office also recognizes that raising the minimum wage would only benefit some workers at the expense of jobs for others. They estimated that half a million people will lose their jobs as a result of increasing the minimum wage to $10.10. These "near-minimum-wage" earners would be the ones paying the price of job loss because we raised their cost of hiring by nearly 40 percent.

Another example of a policy that will contribute to our problem of disengagement from the labor force is the Affordable Care Act. CBO's recent finding that the Affordable Care Act will significantly reduce the incentive to work by the equivalent of more than 2 million full-time workers in just a few years is deeply concerning.

More generally, raising the regulatory burden for companies while we have a struggling labor market is counterproductive. While new regulations may be important, they raise the cost of production and therefore the cost of hiring production workers. Many of these workers have below-average wages to begin with, and in a bad labor market, job loss is much costlier for affected families.

Raising the rate of labor force participation needs to be a central focus of federal policymakers, in order to strengthen our economy and raise the prospects of low-income Americans. To do this, we need to make it easier, not harder, for companies to increase hiring. We also need to encourage individuals to re-enter the labor force, not discourage them. Government assistance for the jobless is important, but the re-employment of the jobless is what we need to reduce poverty and lower income inequality.

ABOUT THE AUTHOR

Keith Hall is a senior research fellow at the Mercatus Center at George Mason University. From 2008 until 2012 he served as the thirteenth Commissioner of the Bureau of Labor Statistics. In this role, he headed the principal fact-finding agency in the Federal Government in the broad field of labor economics and statistics. The BLS is an independent national statistical agency that collects, processes, analyzes, and disseminates essential statistical data to the American public, the US Congress, other Federal agencies, State and local governments, business, and labor.

ABOUT THE MERCATUS CENTER AT GEORGE MASON UNIVERSITY

Figure 1. Change in labor force percentage rate since 2007.

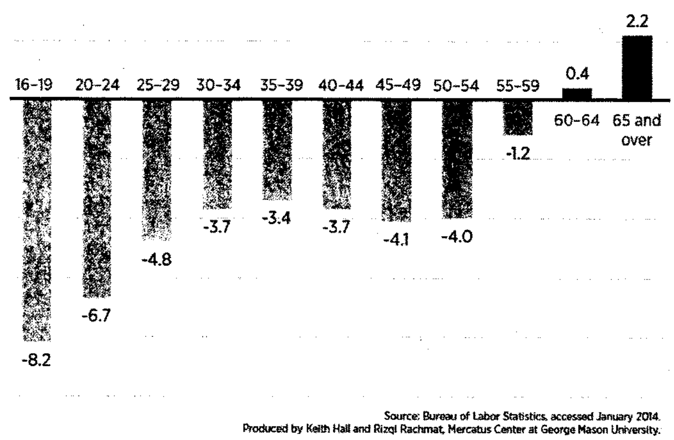
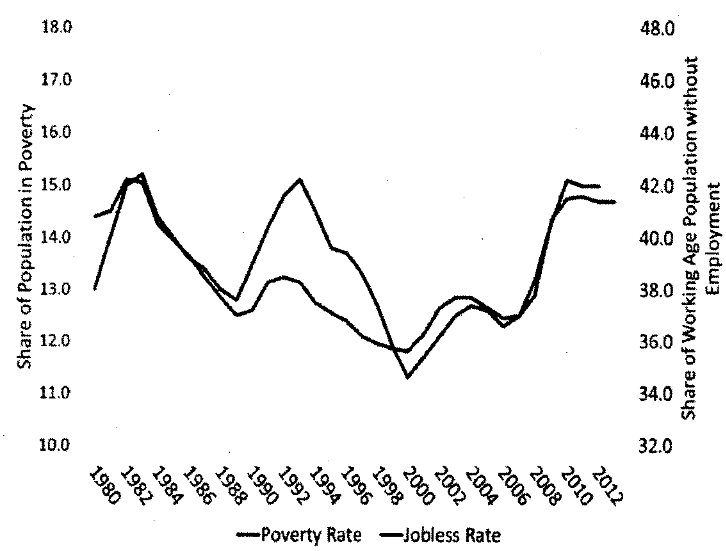


Figure 2. The relationship between jobless rate and poverty.



Chairman MURRAY. Well, thank you, all of you, for your testimony today.

I want to start with a question about the types of policies that we here in Congress should consider if we want to create more opportunity and improve economic mobility and strengthen our middle class.

Over the last several years, we have made significant progress towards addressing our medium-term budget deficits, and while I certainly believe that we need to build on the foundation we laid with the Bipartisan Budget Act and continue to address our long-term debt challenges, I also really worry that we have not done nearly enough to address the many other deficits that our country faces today, which I believe are a big part of the reason why economic opportunity is so scarce for so many families these days. I know my colleagues on the other side of the aisle tend to argue that rather than invest in education or fix our crumbling infrastructure or patch the holes in our social safety net, that we should reduce taxes for those at the top and cut back on those services.

So, Dr. Stiglitz, I want to ask you your thoughts today on the importance of public investments—education, infrastructure, scientific research—and ask you if these types of public investments are an important part of improving economic mobility in this country.

Mr. STIGLITZ. Yes, I very strongly believe they do. Let me try to emphasize a couple points. One, if we focus—we need to focus on both sides of the nation's balance sheet. When we talk about the debt, every company looks at both its liabilities, what it owes, and its assets. And the fact that in the government, you only look at one side, is a big mistake. We should be looking not only at what we owe, but also the assets. And what are the assets? The assets are human capital, the investments in people, our infrastructure, investments in technology.

So, if we were looking at this like a company, it would be clear that these were good investments. We can borrow today at a negative real interest rate, and there are lots of studies that show that the returns on these investments are enormous. So, that is one aspect.

The second one is that in making those investments, we would create demand. The real problem today with our economy is lack of aggregate demand. That is why there are not jobs. In the sectors of our economy where there is demand, jobs are being created. So, it is lack of demand that is really holding the economy back.

So, if we started investing in areas like you mentioned, infrastructure, education, we would increase demand in those areas. We would create jobs. And that would strengthen our economy.

Now, what is very clear is that one of the sources of inequality is the lack of demand. It is hurting the poor, people in the middle, because both directly because of the unemployed, but indirectly, the unemployment is driving down wages. It is one of the things. But we have to remember, this is a quarter-century problem. It is not just something that has been post the recession. It has gotten worse. That is what I emphasize. But, it has been there for a long time.

And part of the reason it is there for a long time is the underinvestment in education. Professor Chetty pointed out the importance of, for instance, those childhood investments, preschool education, recognized by Professor Heckman in his research.

So, it is the failure to make these investments that both lead to the weak economy today, will contribute to a weak economy tomorrow, and both through the macroeconomic and through the effects on the children, are going to create more inequality.

Chairman MURRAY. Dr. Chetty, you have been studying the relationship between different factors in economic mobility. Let me ask you sort of the same question, and in your research, have you found that lowering taxes for the wealthiest Americans helps improve mobility?

Mr. CHETTY. Thank you. No. So, we have studied, as I mentioned, various factors that are correlated with differences in mobility across areas and over time, and we do not find any evidence that lowering tax rates on the wealthiest Americans would increase mobility. In fact, I would say to the contrary, as Professor Stiglitz was saying. You have got to think about where you are spending the revenue that you collect.

So, if you raise taxes and collect additional revenue that you then invest in better schools or better infrastructure, given the rates of return that we found on such investments, I would think, actually, precisely the opposite, that in a situation such as the one we are in today, where many people think we are under-investing in basic infrastructure that is going to have a huge long-term payoff for the American economy, we need to find, as Senator Sessions said, we need to fund those investments in some way. And, on net, I would say, increasing the taxes on the wealthiest and closing certain loopholes, for instance, in the corporate tax system, as you suggested, would, if invested well, have very large returns.

Chairman MURRAY. Okay. Thank you. My time is up.

Senator SESSIONS.

Senator SESSIONS. Thank you.

Dr. Hall, I did not realize that your chart shows something surprising to me, and that is that the dropout or the decline in the workforce participation is much higher from the historical average among younger workers than it is among the older workers. You actually have, from 60 to 65 and over, about a two percent increase in participation, whereas from age 20 to 24, there is a 6.7 percent decline in workforce participation. From 50 to 54, a four percent decline in workforce participation. You expressed concern about all this. Would you share with us a little more your thoughts on those numbers.

Mr. HALL. Well, sure. You know, there has been lots of talk about the effect of the aging baby boomers, that that is the reason for labor force—

Senator SESSIONS. Madam Chairman, Senator Johnson needs to go, and I told him I would let him go first and I just blithely went right on in asking questions. Could I yield to him, and I will try to reduce my time by a minute when I get to my time?

Chairman MURRAY. Absolutely. Of course.

Senator SESSIONS. He has another meeting, and I am glad he could be here.

Senator JOHNSON. Thank you, Senator Sessions and Madam Chair.

I would like to go to Mr. Hall right off the bat, a similar type of question. Mr. Hall, you talked about our workforce being 4.5 million people short. Can you just tell me where you are getting that from and explain that.

Mr. HALL. Well, sure. If you look at what is typical participation rates by age, for example, the participation rates in 2007 were rather different than they are right now, and so, really, what I just did is I look at every single age and look at what the participation rate was in 2007 and what the participation rate is right now, and you find that we are short in terms of the average participation at every single age rage between 20 and 54 right now, and this is pretty significant.

So, the part of the issue, I think, that we really need to face is getting people back engaged in the labor force. It is not just baby boomers that are retiring. This is every age. The young in particular, actually, have really dropped out of the labor force, and I think that is a real concern going forward.

Senator JOHNSON. Okay. You are just talking about a shortage in the labor force. You are not saying that there are 4.5 million jobs available that are not being filled.

Mr. HALL. Well, that is right. That is right. In fact, if you were to look at where we are short in jobs, we are short in jobs probably 10.5 million people—jobs, actually.

Senator JOHNSON. We had a pretty interesting witness before the Budget Committee here last year, Gary Alexander, who is the Secretary of Public Welfare in Pennsylvania. He had a pretty interesting study that he conducted on single moms which showed the disincentive nature—disincentivizing nature of all the assistance programs. Basically, his conclusion was that a single mom was better off only earning up to $29,000 because her combination of earnings plus benefits, a total of $57,000, versus earning $69,000 where her combination income and benefits would be the same amount, basically, $57,000 after tax. In other words, she had a 100 percent maximum tax rate from $29,000 to $69,000 with increased taxes as well as reduction in benefits. Can you just speak to that type of problem in terms of the incentives not to continue working.

Mr. HALL. Sure. You know, I do not want to—we need a social safety net. That is an important thing. But we need to be very aware of what sort of incentives that creates with our policies. Keeping people—making it hard for people to reenter the labor force and making it hard for businesses to rehire people, I think, really creates a problem. And so many people out of the labor force for so long is a problem because the longer people are out, the less likely they are to ever return to the labor force. So, to some degree, we can make people unemployable by keeping them out of the labor force for a long period, like we have seen.

Senator JOHNSON. You know, I agree. We are a compassionate society. We all want a strong social safety net. But the problem is, how do you design that social safety net where it really stays confined to those people that really need it and does not start creeping into populations where it creates this kind of disincentive for participation in the labor force.

My final question really has to do with mobility. We are always talking about income mobility. What about geographic mobility and what effect—there are jobs going wanting up in North Dakota, up in those energy fields. In the State of Wisconsin, we have 18,000 welding jobs that are unfilled. So, what is the effect—I mean, why do we no longer have that mobility? Why do people feel like they really should not go to the areas where there really are lucrative jobs for the taking?

Mr. HALL. Well, certainly, sort of fiscal location mobility would be something that would slow down a recovery and make it difficult for folks to recover, and that is really a good point, that we have a very weak labor market, but not everywhere in every industry. There are industries where you can see some real issues with difficulty finding workers, qualified workers. That is the sort of thing we ought to worry about, is mobility of all different types, because that is a real strength for an economy.

Senator JOHNSON. I would just like to ask the other witnesses, do you have any comment on that lack of mobility, or the fact that we simply—people are not moving to where the jobs are.

Mr. STIGLITZ. Yes. One of the problems is that when people have very little wealth, because the people at the bottom have no wealth—in fact, a lot of them have negative wealth—they cannot afford to just take the risk of moving somewhere else. There is a piece of legislation, I do not know whether it is in the House or the Senate, that has been introduced to try to provide assistance to help people move, mobility assistance, and it has gotten bipartisan support and I think it is an important kind of measure, because people do not have the resources to up and move.

Part of the reason is the severity of the housing crash. People at the bottom had a very large fraction of their wealth in their housing—always—but then the house prices came down. They were over-indebted. They had been sold wrong mortgages. And so this has exacerbated, which is something that is always a problem—the Great Recession has exacerbated, and the data that has recently come out from the Fed about the wealth at the bottom has really highlighted this particular problem, and I think it is something that Congress ought to be doing something about.

Senator JOHNSON. Okay. Well, thank you.

Thank you, Madam Chair and Senator Sessions.

Chairman MURRAY. Thank you very much.

Senator KAINE.

Senator KAINE. Thank you, Madam Chairwoman, and to the witnesses, thank you for your testimony.

We are in an interesting centennial that I just discovered this morning, and I just want to read something before I ask a couple of questions. Quote, "After the success of the moving assembly line, Henry Ford had another transformative idea. In January 2014 [sic], he startled the world by announcing that Ford Motor Company would pay $5 a day to its workers. The pay increase would also be accompanied by a shorter workday. While this rate did not automatically apply to every worker, it more than doubled the average auto worker's wage. Henry Ford had reasoned that since it was now possible to build inexpensive cars in volume, more of them could be sold if employees could afford to buy them. The $5 day helped better the lot of all American workers and contributed to the emergence of the American middle class. In the process, Henry

Ford had changed manufacturing forever." That is from a Ford Motor Company press release issued earlier this year celebrating the 100th year anniversary of that wage increase.

The question I want to ask all of you is really about tax policy. As a general matter, we have made the policy decision to tax salary from labor at significantly higher rates than earnings from investments. To what extent does that contribute to inequality, and to what extent does it affect our economy? I would like to hear from all of you about that.

Mr. STIGLITZ. Okay. Well, very briefly, it obviously creates a lot of—contributes to inequality, because the distribution of capital, wealth, is much more concentrated than the distribution of wage income. So, what you are doing—if you look at the data in the CBO study that recently came out, if you look at the data of who benefits from that lower taxes of capital gains, who benefits from the lower preferential treatment of dividends, who benefits from the step-up of basis on death, it is disproportionately money all at the top. So, this is a provision that creates more inequality.

At the same time, the next one I referred to, the cost over ten years of these special provisions is basically $2 trillion. That is a lot of money that would go a long way to putting our budget in better shape.

The evidence that this leads to more investment just is not there. You know, when they are keeping their money in the Cayman Islands or, you know, it is not there because of the greater sunshine makes the money grow faster than for the lack of sunshine, and they often take that money and are not reinvesting it in America. So, we could have a tax program that would incentivize investment in America, job creation in America, but that is not what these special provisions are really doing.

Senator KAINE. Dr. Chetty.

Mr. CHETTY. Yes. I would agree with everything Professor Stiglitz said. I think the key issue here is that capital income is much more concentrated than labor income.

Another point that adds onto that is because you have to meet a given budget, if you have lower capital income tax rates, you naturally have to have higher labor income tax rates and that potentially leads to more of the disincentive effects that were mentioned before, where people feel like their net return to working is smaller and it is harder—it is more costly for companies to hire workers.

So, in my view, a reform that moved towards increasing capital income tax rates, either investing that money, again, coming back to infrastructure, education, or lowering labor income tax rates, would likely improve the strength of the American economy.

Senator KAINE. Dr. Hall.

Mr. HALL. I am not an expert in tax policy. I will not speak too much on it, other than I do feel like we try to do too much with our tax policy. You know, I think when you try to conduct policy through taxes, you create a lot of incentives and you create a lot of problems with that.

Just in general for me, I think, I would rather see tax policy there to generate revenue and not try to manipulate things in the economy. Just simplify the tax code. Get rid of loopholes. Make it basic.

Senator KAINE. You know, I think the history would show that we taxed earnings from capital at higher rates than earnings from labor for a very long time, and then we attempted to begin to manipulate and moved the taxation on capital and labor to approximately an equivalent, and now we have moved the taxation on earnings from capital to significantly less. So, I think there has been a manipulation of the tax code in the ways you described.

The traditional answer has been that education is one of the great lifters and levelers in that opportunity. What are the barriers to that being the case today, and answer quickly, because I have pretty much used up my time.

Mr. STIGLITZ. Okay. I mean, really, we focus on higher education. It is getting very expensive, particularly with the recession, the cutback in State aid. Tuition has soared. We mentioned before that median income is at a quarter-century low, so incomes are going down. Tuition is going up. The only way to make it is debt. And the form of debt the United States has is really crushing, because bankruptcy law, you cannot get forgiveness of that even in bankruptcy. Other countries, like Australia, have come up with really good proposals like income-contingent loans, where the amount you repay depends on your income. So, it is not the crushing effect, and it has worked very well. It is one of the reasons why they have succeeded in getting more equality of opportunity in Australia than in the United States.

Senator KAINE. Thank you, Madam Chairwoman.

Chairman MURRAY. Thank you very much.

Senator Sessions, we will go back to you.

Senator SESSIONS. All right. Thank you.

Dr. Hall, you indicated three things that would actually—I think it is indisputable—would reduce jobs in America. That is the minimum wage increase that the CBO has told us. There is no doubt, I think, that the Affordable Care Act has been a detriment. Two-thirds of the jobs last year that were created were part-time. Some of that clearly was Affordable Care Act. And that more regulations, excessive regulations. Maybe regulation is good for one industry, but it applies to too many industries. That is unhealthy.

Let me ask you a few things that might be healthy and helpful without adding to our debt. If the United States were to exploit this new ability to produce energy, both onshore and offshore and on Federal lands, would that help create jobs and wealth in America and tax revenue for the government?

Mr. HALL. Absolutely, and actually, it already has. The job growth in, for example, the natural gas industry has really been pretty impressive, despite the job loss in the rest of the private sector since 2006.

Senator SESSIONS. And you mentioned the tax code simpler, and I agree with that. It needs to be more growth oriented and simpler, it seems to me. Can we do that? Could we retain this current level of revenue and create a tax code that is, in fact, simpler and help create more growth than we are seeing today?

Mr. HALL. Well, absolutely. I do not want to go too far beyond my expertise, but I think that is right. I think the efforts to look at the tax code and look at just sort of simplifying it, getting rid of loopholes and getting a simpler basic tax code whose real goal is just to collect taxes, not to do all sorts of things, has real potential benefit.

Senator SESSIONS. Dr. Stiglitz, the problem about loopholes is something we have gone around about a good bit here. I think there is not support in Congress to close loopholes to fund new spending, but there is a belief that we can create a tax code that is more growth oriented. In fact, Chairman Baucus was clear that we ought to close loopholes, have a simpler system, but use that to keep the rates more competitive worldwide. How would you analyze that issue?

Mr. STIGLITZ. Actually, mean, obviously, we need a better tax system. I referred to the special provisions on capital gains and dividends that, I think, do not lead to stronger growth. The way we treat foreign income of multinationals and American companies that operate abroad, that they can keep the money abroad, reinvest the money abroad and not bring it in the United States, is an incentive to create jobs abroad. So, we have a perverse tax system which encourages job creation abroad.

But, the actual effect of the corporate income tax, lowering that would not help, I believe, because, remember, at the margin, firms can borrow and debt on the part of firms is tax deductible. In fact, most evidence is that most firms finance the marginal investment by debt. It is tax deductible. So, the income is taxed at the same rate that the interest is tax deductible. There is no significant adverse effect, in fact, from the corporate income tax. So lowering the corporate income tax would provide no benefit.

What we should do is to say, if you invest in America, you can get a lower rate. If you do not invest in America, you actually should pay a higher rate. So, I would argue that get rid of the corporate loopholes, raise the corporate income tax, but give a break for those who invest in America.

Senator SESSIONS. Well, that is pretty much the government directing a lot of things that I am not sure we are able to do.

Dr. Chetty, thank you for your participation. I do think moving from the bottom quintile to the top is a big move, and maybe culturally, we have already done so much of that that we will not expect to see that. I would like to see people move from lower income levels to middle income levels, the middle income level to move up a level or two in a system that is fair. I think that would be better for America, and it was within our grasp. My time is up, but—

Mr. CHETTY. If I could just say one thing on that, I absolutely agree. So, the statistics I presented were just one example, focusing on moving from the bottom fifth to the top fifth. But you see exactly the same patterns that I showed you if you look at, say, moving from the bottom fifth to the middle class. The places that look better in terms of helping kids move up all the way to the top also are better in terms of helping kids reach the middle class. And I agree that that would be a great goal. The U.S. falls behind other countries in achieving that goal, as well.

Senator SESSIONS. Well, our numbers that I just said show we are dropping from middle income to lower income, unfortunately, a little bit.

Chairman MURRAY. Senator Sanders.

Senator SANDERS. Thank you, Madam Chair, and thanks for holding this important hearing, and thank you very much for our guests for being here.

I do not have a whole lot of time. Let me just focus very briefly, if I could, on three issues. While we are dealing today with economics and finances, ultimately, we are dealing with a moral issue of what kind of nation we want to become. From a moral perspective, Dr. Stiglitz and other members of the panel, do you have a problem that the top one percent owns 38 percent of the financial wealth of America while the bottom 60 percent owns all of 2.3 percent? Do we have a problem that one family, the Walton family of Wal-Mart, owns more wealth than the bottom 40 percent of the American people, one family? Should Congress begin to address income and wealth inequality from a moral perspective? Dr. Stiglitz, very briefly, because I have a couple of other questions. Yes or no, do you think?

Mr. STIGLITZ. Yes. Yes, but it also has strong economic—

Senator SANDERS. I am going to get to that in a second, within my two minutes here.

Dr. CHETTY.

Mr. CHETTY. Yes. I certainly agree that inequality, and to the extent it creates inequalities in opportunity, which I believe it does, it is a moral issue.

Senator SANDERS. Okay. Dr. Hall.

Mr. HALL. My expertise is in economics, but I will just say, I think we should be focusing more on raising the incomes of the low and focusing on those, increasing mobility for the low. That should be the focus and not so much worrying about whether the wealthy make a lot or not.

Senator SANDERS. So, you do not have a concern that the top one percent own 38 percent—

Mr. HALL. Well, what I want is I want to see a better outcome. I want to see a better outcome for the low-income folks, and I think the way to do that is to focus on their situation.

Senator SANDERS. Let me ask this, and again, I know I am a little bit off subject here and I apologize for that, but it is important. I think, Dr. Stiglitz, you touched on this. When we talk about unfair distribution of wealth and income, what we are seeing, especially in recent years, is the wealthiest people in this country are not simply reinvesting their money in business or putting it under their mattress. They are, in a very significant way, putting that money into politics, to elect politicians who will represent their interests.

Do you have a concern with, say, the Koch family spending what we think will be hundreds and hundreds of millions of dollars on the political process, that Sheldon Adelson just the other day had a primary which he brought potential Republican candidates to audition in front of him? Is that a problem for American democracy?

Mr. STIGLITZ. Very much so, and I think it also is a problem for America's confidence in its political system. If Americans come to believe that the political system is bought, they will lose faith in one of our fundamental values.

Senator SANDERS. Right. Dr. Chetty, is that a problem, do you think?

Mr. CHETTY. Yes, I certainly agree with that view.

Senator SANDERS. Dr. Hall, is that a problem?

Mr. HALL. Well, first of all, again, it is not my area of expertise—

Senator SANDERS. I do realize that.

Mr. HALL. —but this has always been an issue. This has always been part of free speech, is people get to do what they want to do to impact politics and outcomes in government.

Senator SANDERS. Okay. So, you think free speech is the ability to buy elections?

Mr. HALL. Well, I did not say buy elections.

Senator SANDERS. But that is the practical implication of that—

Mr. HALL. No, and—

Senator SANDERS. I appreciate it. Okay.

Mr. HALL. And singling out people—you know, there are lots of folks who contribute—

Senator SANDERS. There are.

Mr. HALL. and lots of folks who try to have an influence.

Senator SANDERS. There surely are.

Third question, which is something you guys do know something about, and that is economics. When so few—my understanding is that about half the American people have less than $10,000 in savings. It is rather extraordinary. That means one car accident, one illness, you are in financial ruin. But, the bottom line is, when so few have so much and so many have so little, can you create—and when 70 percent of the GDP is based on consumer consumption, can you create the jobs you need, or is this really—this inequality an impediment to job creation? Dr. Stiglitz.

Mr. STIGLITZ. Yes. As I said before, one of the major problems in the United States right now is a lack of adequate demand, insufficiency of demand, and people at the top spend less than those at the bottom. And it is one of the problems, not only in the United States but globally, that is contributing to the weak recovery that we are experiencing.

Senator SANDERS. That so many folks have just no money to buy anything and—

Mr. STIGLITZ. Exactly.

Senator SANDERS. Yes.

Mr. STIGLITZ. And before the crisis, remember, what we—the way we kept our economy going was on an artificial life support of a bubble.

Senator SANDERS. Right.

Mr. STIGLITZ. And it was only the bubble that was able to offset the adverse inequality—

Senator SANDERS. That was debt, borrowing money and—

Mr. STIGLITZ. Exactly.

Senator SANDERS. Right. Dr. Chetty, what do you think?

Mr. CHETTY. Yes. So, I think the low savings rates of low-income people is potentially a problem. And coming to your question about what would stimulate jobs and aggregate demand, there is good evidence that if you give a dollar to a person with below-median income, much more of that is spent than if you give a dollar to a person at the top end of the income distribution. So, if you are trying to raise aggregate demand, these things are intricately linked—

Senator SANDERS. Such as extending long-term unemployment, putting money in the hands of people who desperately need that money.

Mr. CHETTY. The marginal propensity to spend out of unemployment benefits is extremely high, so that, I think, would have a stimulative—

Senator SANDERS. Dr. Hall.

Mr. HALL. Well, the thing I want to emphasize is the inverse of that relationship. Economic growth helps reduce income inequality. You do not change the poverty rate unless people get jobs and you get stronger economic growth. That relationship, I think, is clear.

Senator SANDERS. But, let me ask you this on that point. If 95 percent of all new income generated in recent years went to the top one percent, is that, in fact, true, that economic growth is going to impact poverty?

Mr. HALL. Well, let me just talk about just the general facts, okay, about economic growth. We have had very weak economic growth. The last three years, new growth has averaged about 2.2 percent a year, all right. We have been very lucky to get 190,000 jobs a month over that time period. That is actually very strong job growth given that weak economy.

So, I still think at the heart of our labor market problems is a weak economy. It is not—

Senator SANDERS. I think you are right, but my point would be that even if you had more economic growth, if you had this kind of incredible inequality in terms of income, if 95 percent of all new income went to the top one percent, you can have six percent growth and still see an increase in poverty.

Mr. HALL. The sort of thing I am worried about is that we have a very large number of long-term unemployed or long-term jobless and these folks are not just long term, they are very long-term jobless. These folks are going to have a really, really hard time getting back into the labor market unless we focus on these focus and get stronger growth. Actually, what really happens in a typical business cycle is once you get stronger growth, once you get three percent-plus economic growth, then you finally rehire those long-term unemployed—

Senator SANDERS. Do we extend long-term unemployment benefits to help those folks?

Mr. HALL. I do not object to a long-term unemployment benefit. I do not object to that. That is part of the safety net. Now, there are some effects, of course, disincentive effects of that, but you have got to sort of weigh the two things. I am worried about other policies, though, that really do impact this cost of hiring and incentive to work.

Senator SANDERS. Okay. Thank you very much.

Chairman MURRAY. Thank you.

Senator KING.

Senator KING. Thank you, Madam Chair.

A couple of quick observations. One is, this is important. It is important for economics, this distribution, because the middle class are the customers. And the biggest problem with this economy now is a lack of demand, and it is because the middle class does not have money. They masked their declining standard of living in the

1980s and early 1990s by women going into the workplace. It was then masked by debt in the late 1990s and early 2000s and there are no masks left and we are stuck with an economy that is stagnant because of a lack of demand.

It is also important because of an issue of social stability. We do not want to become a country of gated communities, a country where the rich live behind walls with barbed wire. You go to some Latin American countries and that is exactly what you see.

Senator Kaine mentioned Henry Ford. Henry Ford was the ultimate capitalist, but who realized he needed customers. And I worry today that with the concentration of wealth, that those at the top have forgotten that they need customers. So, I think there are very serious implications of this for the long-term strength not only of our economy, but of our political economy, of our political system, which is based on the premise that people have hope of moving up. And if people lose that hope and decide that the system is entirely rigged against them, that is going to produce instability and a level of political and economic resentment that we have never seen in this country and I think it is very dangerous.

Secondly, I want to identify myself with Senator Sessions, his points about interest costs. I think we are whistling by the graveyard on interest costs right now. It is two percent. If it goes to 4.5 percent, just the cost of interest is going to exceed the entire defense budget. It is going to sink all of the priorities of everybody sitting around this table.

Finally, I want to get to a couple of honest to goodness questions, and I do not expect answers now, but I would like to see, Mr. Hall, particularly, data on what is causing lower labor force participation. You know, what are the factors? And, by the way, I believe that is a problem. I talk to tradesmen in Maine, people, plumbers, carpenters. They cannot get help even in a time of high unemployment. They say these guys come to work, they work three days, and then they do not show up on Thursday and they wonder why I fire them. There is a problem. There is a subterranean problem going on about people, particularly young people, who do not seem—now, there are millions that want to work, that desperately are looking for jobs, but there is a problem there and I would love to see some data or studies, at least, on what is causing that.

Second, I am a great believer in regulatory reform and the cost of regulation to our society. It would really help me to have data on that. If you guys could do some case studies or know of studies in real live cases where regulatory drag has significantly impaired economic growth, profitability, ability to hire, I think that is very important.

Mr. Hall, a question for you. I go to a lot of—I am all over Maine on weekends, talk to a lot of people. Put yourself in my shoes. I am at the gates of Bath Iron Works. There is a guy there who works hard every day. It is really backbreaking work, and he pays 35, almost 38 percent on his income tax. And a guy down the street who is getting dividends pays 20. How do you explain to that guy why he is paying almost twice as much taxes as this guy that gets his money out of the mailbox?

Mr. HALL. Well, I will just go back to my general comment about tax policy. Tax policy should be for revenue generation and we should be collecting revenue with that. We should not be trying to do all sorts of little manipulations—

Senator KING. So, does that not argue for the same rate on all forms of income?

Mr. HALL. It does. You know, like I say, I am not a tax expert—

Senator KING. Did you hear him say, "It does." Let the record show.

[Laughter.]

Senator KING. Go ahead.

Mr. HALL. You know, I just—for example, I do not know what the facts are, for example, on tax rates. I could not tell you how much distortion we wind up getting—

Senator KING. Well, it is 39.5 at the top end for income and it is 20 for capital gains. It was—and I just cannot explain that to a working man, why what he is doing gets taxed at almost twice the rate as the other guy. I have never—help me out here.

Mr. HALL. Well, I think the sort of thing that I find bothersome, one of the reasons we have such a low savings rate is our tax policy encourages people to spend. We get a tax break for housing. We get a tax break for a lot of things. And that is almost certainly one of the reasons why the savings rate is so low, is because our tax policy distorts people's behavior with things like that.

Senator KING. Well, I would argue that—

Mr. HALL. Our housing boom—go ahead.

Senator KING. —encouraging people to buy houses is encouraging investment, not spending. I would see that—

Mr. HALL. Well—

Senator KING. That is the source of wealth for most American families.

Mr. HALL. It is hard not to see that a lot of our troubles are a housing bubble where, perhaps, people over-purchased housing. There is too much investment in housing. That is certainly something that differs in the United States to in other countries.

Senator KING. Dr. Chetty, this is a question, I think, for the record, because I am running out of time, but you do a scale of upward mobility by county around the country. I am going to submit a question for the record of we have our--I look at it—counties that are different levels, and I would just like some explanation, background on what that really means, county to county, and how we deal with that.

I think, finally, the question is, how do we as government policy makers improve this issue of income inequality without turning the government into Robin Hood? I do not think we have a responsibility to take from the rich and give to the poor. I think the question is, how do we improve—how do we build policies that provide incentives and also the opportunities for greater growth. I like your ideas about looking at student loans and how we deal with that, because right now, we have thousands and millions of kids graduating from college with what amounts to a mortgage and no house and I would like to see you supply us some—with help. We need proposals for solutions. This is a problem. We need data and we need proposals for solutions.

Thank you very much, gentlemen. Thank you, Madam Chair.

Chairman MURRAY. Thank you very much.

Senator WHITEHOUSE.

Senator WHITEHOUSE. Thank you, Madam Chair.

In any discussion of taxes, I cannot help but point, particularly after we have heard more of the ardent commentary of our Republican friends about the debt and the deficit, that the tax loopholes that contribute to that debt and that deficit, they appear to defend with a rare and special passion, whether it is the carried interest exemption that allows billionaires to pay lower tax rates than brick masons, whether it is the offshore tax havens that allow American corporations to pay essentially no taxes, use our roads, use our courts, enjoy the benefit of a free society that everybody else pays for, and then run their money offshore and avoid the tax man, or letting the richest companies in the history of the planet continue to enjoy oil subsidies.

Every time we try to address those, it is the very same people who like to give these ardent statements on the debt, then defend all of those loopholes, and it causes me to take with a grain of salt how serious we are about the debt if we are willing to—if we would prefer to maintain those tax preferences than to deal with it. And, clearly, they are political. It is very wealthy people and very wealthy corporations and very wealthy interests that are behind all of those.

So, to my friend from Maine, if he wants to explain to the guy at Bath Iron Works why the tax code works that way, I would ask how many people who work at Bath Iron Works are big political donors, whereas the folks who are getting the big capital benefits are the billionaires, and they are the ones who are pouring money into elections and they are getting things their way. And it is important for us, I think, to stand up against that in order to have this run more fairly.

Mr. Stiglitz, I read in your paper on reforming taxation to promote growth and equity the following. "A tax on carbon emissions has even more benefits. It encourages firms to make carbon-reducing investments, to retrofit their firms to reflect the true costs of the pollution that they generate. A tax on pollution has a triple dividend because it leads to a better environment which can itself lead to stronger economic performance, and it raises revenue even as it reduces the bad externalities spilling over on the rest of us. Moreover, it incentivizes firms to retrofit, thus encouraging investment that leads to higher output and employment."

Could you comment a little further on that, and particularly on the value of a revenue-neutral carbon fee.

Mr. STIGLITZ. Yes. The point you quoted is exactly right. This is an example of—

Senator WHITEHOUSE. I should hope you think so, since I was quoting you.

Mr. STIGLITZ. Yes, I know, but—

[Laughter.]

Mr. STIGLITZ. People often say that taxes have to depress the economy, and what I wanted to emphasize there was that this is a kind of tax that can actually stimulate the economy at the same time that it is raising revenues and improving our environment.

Senator WHITEHOUSE. And you won a Nobel Prize.

Mr. STIGLITZ. Yes. This is, you know, very commonly accepted, and—

Senator WHITEHOUSE. Including among economists—

Mr. STIGLITZ. Among economists—

Senator WHITEHOUSE. —who negotiated with Republican Presidents—

Mr. STIGLITZ. Most would say, yes, there is a distortion in our economy because there is something that is imposing a cost on our society and people are not paying for it. It is like a subsidy, in a sense. They are not paying a real cost that they are imposing on the American economy, the American society.

Senator WHITEHOUSE. So, having price match cost actually helps make markets work better, correct?

Mr. STIGLITZ. That is right. So, this is an example of trying to make markets work like markets, and the point is that there is a cost to society that they are getting away with, and if we impose that charge, we would get more revenue and create more employment.

Senator WHITEHOUSE. Well, thank you very much. I am afraid in the same way that concern about the debt seems to vanish in front of the tax benefits for special interests, concern about properly operating markets is going to vanish in the face of the subsidies to those special interests, so wish us luck in getting that done.

[Laughter.]

Senator WHITEHOUSE. Thank you.

Mr. STIGLITZ. Thank you.

Chairman MURRAY. We have all decided that we get a lightning round here, one additional question for each Senator who is remaining, and Dr. Chetty, I wanted to ask you. There has been a lot of discussion here in Congress about whether or not the actual programs that are there to support families who are struggling today are the problem or whether or not the economic downturn and the changes that occurred to that are it, and I wanted to ask you about one example that is very timely and that is the unemployment insurance extension that we are discussing. From your research, what can you tell us about the effect of unemployment benefits on families and the economy?

Mr. CHETTY. So, the concern that many people voice is that when you extend unemployment benefits, as has been voiced here, you potentially reduce the incentive for families to return to work, and that is, theoretically, a concern that economists have noted for a long time. It could be something that is important.

The same exact issue arises in another context that we have been discussing, the EITC. Senator Sessions pointed out that when you have large phase-out tax rates, you potentially create a disincentive for families to work. Now, while theory says that that effect could be small, it could be large, we now have good data that allows us to actually study what happens empirically in practice, and the best data—there are now numerous studies using millions of data points which indicate that these disincentive effects, while they exist, are quite small.

So, when you extend unemployment benefits by, say, ten weeks, you extend the amount of time that people stay out of work quite modestly. And even the small amount of longer time out of work that occurs appears to be driven by things like people trying to find a better job, a job that might work better for their skill set, taking advantage of those longer benefits to find the right match that is ultimately going to help the economy grow rather than just idling their time and living off the system, as some people perceive.

So, I think, theoretically, those issues are important and economists talk about them, empirically, the data says those effects are not nearly as big as you might have worried about.

Mr. STIGLITZ. Could I just add one point to that, which is that, right now, the problem is a lack of jobs. And having more people applying for the same few jobs does not make the labor market work better. So, if you have five applicants per job, or three applicants per job, that is not going to affect the actual level of employment in our economy.

So, right now, the issue is, you know, if we were at full employment, these issues of whether people search for a job would become more important. But right now, they are totally irrelevant.

Chairman MURRAY. Or they are in a different place than somebody is available to get to them, and when you have got a mortgage on a house you have got to pay, it is hard to move, and we had that discussion. I actually met a woman this weekend—you have been watching the mudslides that occurred in my State that has just been devastating, horrible, and was up there this weekend visiting the town at one end of it that has now been cut off from our main economic corridor, and a woman said to me that she is three weeks away from losing her unemployment. She now has no opportunity to get to the employment center, which is down the road, and she is desperate. She is not sitting at home saying, well, I just want to sit on—you know, keep getting this check. She wants a job, but she also wants to be able to put some food on the table for her kids, so a point well taken.

Senator SESSIONS.

Senator SESSIONS. Well, thank you all for a very important discussion, and I believe Congress has gone down the Keynesian road as far as we are going to go. One of the problems is—

Senator KAINE. What is wrong with the Keynesian road?

Senator SESSIONS. Well, we have gone from—

Senator KAINE. I am joking. My name is Kaine, so—

Senator SESSIONS. Oh.

[Laughter.]

Senator SESSIONS. I am a little slow there, Senator Keynesian—I mean, Kaine.

[Laughter.]

Senator SESSIONS. Thank you for correcting me, or helping me. Going down that road of borrowing more has put us at a point where we cannot borrow any more. I remember the former Federal Reserve Chairman testified before—talked to a group of Republicans and he said, "Well, we could borrow more," and we were at 35 percent of GDP. Debt was 35 percent of GDP. Now, it is about 100 percent, gross debt, of GDP. And things changed. And so we have done all these borrowing and spending. The Agriculture Secretary told us, "Oh, if we quadrupled Food Stamps, oh, if we just spend more on Food Stamps, we would get $1.75 in economic growth from it." So, why do we not just quadruple that again? Why do we not provide people free shoes, just borrow the money? We have been told now the interest rate is going to be $880 billion in ten years by the Director of CBO sitting right there. So, this day is over.

We spend $750 billion on welfare programs. We have no vision, no coherence, no driving ability to move people from poverty to productivity. We spend enough money on it. We are just not doing a very good job on it. And we are going to spend more money on education. That is going to fix our future. We know that money does not prove—is not a direct correlation in improving education.

So, I just would have to say to you, there are things we can do. I do think—we have added five million jobs from abroad, and that is about the same number that have been created in the last number of years. So, I would just say we are—you want me to hush and go and wrap this up.

Chairman MURRAY. No, I just want to—

Senator SESSIONS. This is a very good panel and we are talking about something important, and I thank you, Madam Chairman, for doing it, because it is not healthy when we are seeing these things happen in our economy. And the National Review had a piece and said we are a nation with an economy, not an economy with a nation. So, we do have a responsibility to our people. I think that is correct.

So, I think there is a conservative view, too, on how do we help the American people prosper and get back on the road to growth. We should consider all the comments we have had today and keep working on it. But just taxing more, borrowing more, spending more, regulating more, I believe, is the wrong direction, and that is, in some degree, where we have a difference of opinion. Thank you.

Chairman MURRAY. All right. Thank you.

Senator KAINE.

Senator KAINE. Thank you, Madam Chairwoman.

Something I am confused about, and as long as we brought John Maynard Keynes into the conversation, many economists—Keynes, Schumpeter, and others—have written about the capacity of technology to destroy jobs. So, in Virginia, we mine as much coal as we did 50 years ago, but with one-tenth the coal miners. They did not propose that we not be innovative, because they would assume that technology would also create jobs, and hopefully the net creative over destructive would be positive.

Is there any research currently about whether that sort of net result of technological advancements is still for the American economy a positive in terms of creating more jobs than destroying, or is the pace of technological change or productivity advances at a place now where it is destroying more work than it is creating? I am just curious about the status of the research.

Mr. STIGLITZ. Well, I guess it is really an open question. A lot of people would use the metaphor of what happened back with—you were mentioning Henry Ford. The car replaced blacksmiths and buggy whips, but created more jobs with car repairmen. But, we do not know whether the next round, which is pretty fundamentally different—you know, we have robots creating robots creating robots, and the question is, will the job creation be there?

It will not be—well, I mean, the real issue is, it will not be there unless there is some help, and I think from the government, in making the structural transformation. The new jobs will be in areas like the service sector, and people that were in manufacturing will not necessarily have the skills for the new sectors, and they do not have the capital to move into those sectors.

The reason we made the structural transformation from an agrarian economy to a manufacturing economy was through the help of the Federal Government through things like the G.I. Bill that really worked and created real opportunity for Americans. It really transformed the country. It moved people from the rural to the urban sector and created this huge opportunity. For the first time, people could go to college. So, that was a real example of a successful government intervention that, through that whole period of the 1950s, 1960s, we created lots of jobs.

It was a period where we grew faster than any other period and we grew together. Every part of our economy grew, but the bottom grew more than the top. That is, I think, what we should be aspiring for. And the success of that period was based on a strong role for the government to make this structural transformation, which markets do not do well on their own.

Mr. CHETTY. So, just to echo that, you know, I think the answer to that question depends fundamentally on whether workers are reskilled when technology changes. So, clearly, if you have changes in technology and the miners you described are continuing to be in the same profession, if their jobs are being done by machines, then they obviously are not going to be employed at the same rates.

And so the question is whether the economy and the investments we are making give workers the diverse set of skills that they need to be able to transition to changing jobs, and I would say some of that comes from things like job training programs that might help workers adapt to the structural shift, but some of it also comes from earlier investments, echoing a theme we talked about earlier, where when there are more college-educated workers or workers who have had a strong background in school, they are going to be able to adapt more naturally to changes in the demands of the economy. And so I think the answer would be favorable if you have that.

Mr. HALL. Well, once upon a time, I spent some time working at the Council of Economic Advisors and helping with the administration forecasts, and one of our big issues was figuring out when the baby boomers were going to retire and pull out of the labor force, because we are going to have to significantly lower our forecast for economic growth, and that is a big issue. And we had better hope we get a boost in productivity, because the baby boomers are going to retire, and especially if our labor force does not get back to growing, if we are going to maintain our standard of living and our incomes and growth, we need a boost in productivity. We need continued gains in productivity.

Senator KAINE. Thank you.

Chairman MURRAY. Senator—

Senator SESSIONS. Can I ask a follow-up on this point?

Chairman MURRAY. We are going to be here for a long time, but one quick follow-up and then short questions—

Senator SESSIONS. We keep hearing from business that we have got a shortage of labor, but wages are down. You believe, Dr. Hall, in a free market, do you not?

Mr. HALL. Absolutely—

Senator SESSIONS. If there is a shortage of labor, why are wages down?

Mr. HALL. Well, first of all, I do not know that there is a broad shortage of labor. I think there is a shortage of labor in certain areas. I think there is a growing concern that there is a skills mismatch going on that may hold us back. I am not sure I am a believer quite in that yet because we just have not gotten strong enough economic growth to push us to higher hiring. And I think if we had had stronger economic growth and still had this disengagement from the labor force, I would be more worried about that.

Senator SESSIONS. Well, if we had stronger economic growth and the wage market got tighter, maybe we would have some economic growth for working Americans.

Mr. HALL. Well, absolutely. I mean, that would be—

Senator SESSIONS. The problem is, we seem to have this view that, somehow, we have a constitutional right to have low wages among some of our business friends, and I am not for that. I think our job needs to be helping our people in America get higher wages and better jobs.

Chairman MURRAY. Senator King.

Senator KING. Professor Stiglitz, a question about the Affordable Care Act. I had a couple in my office last week for a coffee. They were touring Washington. At the end of our conversation, the lady said, "By the way, thank you for supporting the Affordable Care Act." And I said, "Well, that is very nice. Why do you say that?" And she said, "Because I have been in a job for the last 15 years that I really hate and I have had to stay in it because it had health insurance. My husband does not have it. And the Affordable Care Act has allowed me to leave that job and start my own business, which is something I have always wanted to do."

I understand there is an economics accepted principle called job lock, and I think one of the most significant effects of the Affordable Care Act will be releasing job lock and having people have the ability to start new businesses. And, by the way, those are the job creators. Hedge fund managers are not the job creators. It is people who start businesses. Do you believe that this is—I think this is sort of a hidden benefit that does not get talked about very much. Is there anything to this idea of the ACA unlocking job lock?

Mr. STIGLITZ. Yes, very much so. And, let me say, it also increases productivity because the people can go from employment where they are less productive to where they are more productive. So, not only are they creating jobs, they can be more productive.

And I want to highlight one other thing, that GDP, I have emphasized, is not a good measure of well-being. So, she may have been getting an income, but we were not appropriately taking into account the effect that she was in a job that she was unhappy. She now gets to be more creative in creating a new business, create more jobs, and have a higher income. And the increase in well-being is well in excess of the dollar income that she gets.

So, we do not—one of the benefits of the Affordable Care Act that is not fully appreciated and not reflected in GDP statistics is that and the fact that it gives more security to an awful lot of people. And again, our GDP statistics do not capture the value of this insecurity that so many Americans have felt.

Senator KING. Thank you. Do either of you gentlemen want to comment on that phenomenon?

Mr. CHETTY. Again, just to say that there are empirical studies which show that the job lock phenomenon is important, and people, in particular, when they are in a job previously that provided health insurance, were much less likely to transition out of it for fear of losing health insurance. So, I do think the ACA will have an impact in terms of increasing the flow of workers across jobs and potentially lead to more entrepreneurship, as well.

Senator KING. Dr. Hall, do you accept the idea of job lock and is the ACA going to help with that?

Mr. HALL. It may well. I do not know a lot about the ACA, do not know a lot about the job lock, but just keep in mind that you create all sorts of incentives with this. You know, the one I pointed out was a different incentive and that is the incentive to keep people out of the labor force when, in fact, they probably should get back into the labor force, especially if you want to see long-term improvement in inequality.

Senator KING. But my visitor was not leaving the labor force.

Mr. HALL. Right.

Senator KING. She was changing places.

Mr. HALL. Right. Now, I understand.

Senator KING. And there may be some people, a mom who says, “I do not have to keep this job anymore and I am going to be able to take care of my kids.” I am not sure that is a bad thing.

Mr. HALL. It may not be a bad thing, but it is also—like I say, it is also a concern when you have all these things going on, right. And part of the idea with any sort of policy is try to design it as carefully as you can so you get less of these sort of bad side effects and more of these good side effects.

Senator KING. Right. Thank you. Thanks, gentlemen.

Chairman MURRAY. Last question, Senator Whitehouse.

Senator WHITEHOUSE. Thank you.

I would note that the ancient Egyptians did a pretty good job at getting everybody engaged in the labor force, but they did not do it in ways that I think we would find very humane right now.

[Laughter.]

Senator WHITEHOUSE. Does the term disengagement from the labor force in your testimony, Dr. Hall, include people who were chucked out of their jobs as a result of the recession? It sounds from the terminology that you use as if they all kind of went for a walk in the woods and this was a voluntary disengagement.

Mr. HALL. Right.

Senator WHITEHOUSE. Did you mean to imply that, or am I reading that wrong?

Mr. HALL. No, I will sort of define it for you. These are people who are jobless and they are not currently looking for work. So, they are not considered—

Senator WHITEHOUSE. And they may very well be jobless because they lost their job in the recession involuntarily.

Mr. HALL. Exactly.

Senator WHITEHOUSE. Okay.

Mr. HALL. They may simply be discouraged, and if the labor market improves, they will get back. Or, they may have retired.

Senator WHITEHOUSE. And back to the question of the carbon fee, you put that, Dr. Stiglitz, into the category you call corrective taxes. We have some corrective taxes, like on liquor and on cigarettes, where we tax it and people do less of it, and that is to everybody's benefit, including the taxpayer, because you are paying less for health care and car wrecks and so forth.

But, we also tax work, income, earnings. Could you speak generally about what value difference there is between a corrective tax and a tax on productive activity, just as a general proposition.

Mr. STIGLITZ. Yes. P.S., and it goes back to the previous question I did not fully answer about revenue-neutral taxation. So, the point is, if you tax things that are, quote, "bad," that means you have more revenue which you can then use to reduce the taxes on things that are good. So, you can get—another way of saying the same thing is that you get the benefit of discouraging the pollution, discouraging the externality, the bad activity, and because you can then lower the taxes on work or savings, you get more of the good things, which means more economic growth, more benefits.

So, that is why—and let me emphasize, there is a lot of revenue we are talking about here. The social cost of these environmental externalities—carbon—are very, very large. It will impose a very large cost on our society and our economy in the future years. So, what we are talking about is not a little bottle tax, which is an important tax, but we are talking about something, when we are talking about carbon, that is very large for our economy.

Senator WHITEHOUSE. So, hypothetically, if you were to add—let us just pick round numbers—a trillion dollars in revenue to the country as the result of a carbon fee and you offset that with half-a-trillion reduction in the corporate tax rate and half-a-trillion reduction in the personal income tax rate, either through the EITC or rate reduction or otherwise, you do not end up with a net-zero benefit to the economy. You end up with a positive for the economy because of how you have shifted the tax burden, correct?

Mr. STIGLITZ. Doubly positive, because on the one hand, you have less of the pollution, and secondly, because now you have more work, more savings, more economic growth.

Senator WHITEHOUSE. Thank you.

Chairman MURRAY. Thank you very much. That was one question with five parts, but it was taken.

[Laughter.]

Chairman MURRAY. I want to thank all of our colleagues who are participating today.

I especially want to thank our three witnesses who have traveled here today and for your testimony.

And as a reminder to all of our colleagues, additional questions are due by 6:00 p.m. today.

With that, I close this hearing. Thank you.

[Whereupon, at 11:50 a.m., the committee was adjourned.]

Responses to Questions from Senators for Hearing on "Opportunity, Mobility, and Inequality in Today's Economy"

Raj Chetty, April 7, 2014

Question from Senator Angus S. King, Jr.

On your scale of absolute upward mobility, Maine's sixteen counties fall between 38.9 (Washington County) and 46.1 (Franklin County) on the scale. Can you explain what the scale means, how Maine's counties fared on the scale, and what this could mean for Maine's children?

Absolute Upward Mobility (Chetty, Hendren, Kline, and Saez 2014) is a measure of the average economic outcome of a child from a below-median income family. Statistically, we define absolute upward mobility as the average percentile in the national income distribution of a child who is born to parents at the 25th percentile in the national income distribution. In areas with higher absolute upward mobility, children from low-income parents earn higher incomes on average as adults.

The mean of Absolute Upward Mobility across counties in Maine is close to the mean across all counties in the U.S. (42.4 vs. 43.4). This means that when states are ranked in terms of Absolute Upward Mobility, Maine is near the average – children from low-income households in Maine have chances of moving up the income ladder that are similar to the median state in the U.S. However, some counties in Maine have more mobility than the U.S. on average (e.g., Franklin County), while other counties have less mobility (e.g., Washington County).

Questions from Senator Ron Johnson

<u>*Question 1*</u>

You testified that we should "invest in improving the quality of education." The Department of Education's National Center for Education Statistics calculates that the United States spent $7,301 (in 2012 dollars) per pupil for elementary and secondary education in 1980, while in 2010, it spent $13,692 (in 2012 dollars), an 87 percent increase above inflation. What per-pupil spending figure would bring about a satisfactory level of social mobility?

<u>*Question 2*</u>

You testified that Milwaukee is among the American cities with the lowest level of economic mobility. The Census Bureau calculates that Milwaukee's school district spent $14,244 per pupil in 2010-11, 19.6% above the Wisconsin state average. How much would Milwaukee's per-pupil spending have to increase to achieve an average rate of social mobility?

<u>*Question 3*</u>

You testified that Denmark has a 50% higher rate of economic mobility than the United States and that "investments in improving the quality of primary education" could bring our level of social mobility in line with that of Denmark. According to the Organization for Economic Co-operation and Development (OECD), Denmark's elementary and secondary education expenditures per full time equivalent student were 4 percent below those of the United States in 2010. How much farther above the per-pupil spending in Denmark should our education spending be to achieve Denmark's level of social mobility?

In response to all three of these questions, the solution is not simply to increase expenditure. Although greater resources can help facilitate reforms that improve the quality of education, research finds that school expenditures are not strongly correlated with educational outcomes (e.g., Hanushek 2003). However, policy can "support education" in other ways, which, if done correctly, need not necessarily increase expenditures significantly. For example, increasing teacher quality – by drawing more high-quality people to the profession and retaining more talented teachers – can have large impacts on students' educational outcomes as well as their later life outcomes such as earnings (Chetty, Friedman, and Rockoff, 2013a, 2013b). Countries such as Denmark achieve better educational outcomes than the U.S. not simply by spending more money, but rather by spending money more efficiently, generating less inequity, and attracting better teachers to schools.

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SUPPORTING BROAD–BASED ECONOMIC GROWTH AND FISCAL RESPONSIBILITY THROUGH A FAIRER TAX CODE

TUESDAY, APRIL 8, 2014

UNITED STATES SENATE,
COMMITTEE ON THE BUDGET,
Washington, D.C.

The committee met, pursuant to notice, at 10:36 a.m., in Room SD–608, Dirksen Senate Office Building, Hon. Patty Murray, chairman of the committee, presiding.

Present: Senators Murray, Whitehouse, Sessions, and Crapo.

Staff Present: Evan T. Schatz, Majority Staff Director; and Eric M. Ueland, Minority Staff Director.

OPENING STATEMENT OF CHAIRMAN MURRAY

Chairman MURRAY. Good morning. This hearing will come to order.

I want to thank my Ranking Member, Senator Sessions, and all of our colleagues who are joining us today.

We have a great group of witnesses here to speak with us: John Buckley, who is the former Chief Tax Counsel on the Ways and Means Committee and a former Chief of Staff of

the Joint Committee on Taxation; Dr. Jane Gravelle, a Senior Specialist in Economic Policy at the Congressional Research Service; and Senator Sessions has invited Diana Furchtgott-Roth, a Senior Fellow at the Manhattan Institute for Policy Research.

So, welcome to all of you and thank you so much for being here and participating today. I appreciate the opportunity to hear from all of you about how we can use our tax code to expand opportunity and encourage broad-based growth and tackle some of our budget challenges.

Our country has seen a lot of changes over the last several decades, and one of the most striking is the widening gap between those at the top and everybody else. In the last 30 years, the top one percent of the income distribution has seen their earnings rise by more than 250 percent. But earnings for those in the middle class and those struggling to make ends meet has stayed stagnant or even declined. Costs for everything from health care to college tuition have gone up, and especially coming out of the financial crisis and the Great Recession that began in 2007, the good, middle-class jobs that helped so many families climb the economic ladder in the past are fewer and farther between.

All of this adds up to a 21st century economy where even though those at the very top continue to prosper, it has become more and more difficult for many families to afford the middle-class lifestyle they are working so hard for. I think we can all agree that is not the kind of economy we want now or in the future.

Changes to our tax code cannot solve this problem alone, but there is no question tax reform can and should be a powerful tool in the fight, especially because, right now, inefficiency and unfairness in our tax code is actually making things worse.

Today, our tax code is riddled with wasteful loopholes and special interest carve-outs. In 2014 alone, tax expenditures, or the countless special tax breaks in our code, will cost us $1.4 trillion. That is more than we are expected to spend on Medicare, Social Security, or our national defense this year. And far too many of these tax breaks are skewed to benefit those who need them the least.

There is a real need for reform when it comes to those unfair tax breaks, and I am grateful, in particular, to Senator Whitehouse, who is here today, for his focus on this issue, because by letting them continue, we are spending a lot of money through our tax code on wasteful and inefficient give-aways to people and businesses who do not need help at a time when investing in better schools and infrastructure repairs or medical research would benefit a lot of families who really do. On top of that, we are also missing an important opportunity to help tackle our long-term budget challenges without burdening seniors or the most vulnerable Americans.

Our economic, fiscal, and demographic situation is very different than what it was in 1986, when the last major overhaul of the tax code took place. While the near-term budget outlook has improved significantly, we still need to tackle the long-term debt that grew sharply as the result of two unpaid wars, the massive 2001–2003 tax cuts that were skewed towards the wealthiest, and the lingering effects of this recession. And, as our population ages in the coming decades, more and more seniors will rely on Medicare and Social Security benefits they are owed.

When you add all that up, it is very clear, tax reform that does not ask the wealthiest Americans and biggest corporations to pay their fair share is simply fiscally irresponsible. And, every bipartisan group that has examined our budget situation has reached that same conclusion.

Now, I know many of my Republican colleagues prefer a different approach. Chairman Camp's recent tax reform proposal would put every dollar of savings back into lower rates, primarily for corporations and those at the top of the income scale, and protect the wealthiest Americans and biggest corporations from paying their fair share towards reducing our deficit and boosting our economy.

The House Republican budget that is being debated this week would do all this, as well, but even goes a step further. Their budget would push the top tax rate down to 25 percent, which would mean that middle-class families would have to pick up the tab for the new tax cuts for the wealthy. Giving tax breaks to millionaires while doing nothing to help working families keep more of their hard-earned income is not only wrong-headed in terms of our budget, it is also unfair to families across the country who are up against a decades-long trend of rising costs and stagnant wages.

Now, I know everyone here is well aware of the differences between the two parties when it comes to comprehensive tax reform, and I do want to express my appreciation to Senator Wyden, who in his new role as Finance Chairman will be tackling these very tough issues.

As we look for opportunities to move forward on the larger effort, I am hopeful we can also look for opportunities to compromise in areas where there is some more agreement right now. Chairman Ryan and I were able to reach a compromise on the budget agreement to avoid another government shutdown and create some economic certainty.

Now, I think it is time for the two parties to build on that bipartisan foundation by coming together and finding ways to make the tax code more fair for working families. We can do this by getting rid of some of the wasteful loopholes I mentioned earlier and putting the savings towards helping working families keep more of their money and making job-creating investments in areas like infrastructure and R&D that both sides agree are important.

The 21st Century Worker Tax Cut Act that I recently introduced is a great example. This bill would complement critical reforms like raising the minimum wage by updating our tax code to help today's workers and families keep more of what they earn. It would give working families with children a 20 percent deduction on the second earner's income, and it would expand the Earned Income Tax Credit, or EITC, for workers without dependent children, like those who are just starting out or those whose children have already left home. The proposal builds on work incentives in the EITC that both Republicans and Democrats agree have been effective, and it is paid for by closing wasteful, unfair corporate tax loopholes that Chairman Camp and Democrats have proposed eliminating.

Opinion leaders from across the political spectrum have said it would provide much needed relief to workers and families. One conservative commentator wrote in the National Review that the 21st Century Worker Tax Cut Act is, quote, "a serious proposal that has the potential to better the lives of a large number of workers." And, a New York Times editorial columnist said it would be, quote, "a huge benefit to low-income childless families and two-earner families." So, I am hopeful that here in Congress we will see similar support on both sides of the aisle.

We will also be looking to close wasteful corporate tax loopholes when it comes to addressing the looming shortfall in the Highway Trust Fund. That fund supports transportation projects that ease congestion and make much needed repairs to our roads and bridges. But, in just a few months, at the height of the construction season, the Highway Trust Fund is going to reach critically low levels. That could lead to a construction shut-down across the country this summer, which would halt critical projects and put construction workers out of jobs. Some States are already anticipating this crisis and planning to stop construction projects in their tracks if Congress does not act.

Fortunately, President Obama and Chairman Camp have both proposed using corporate revenue to rescue the Highway Trust

Fund, so we should be able to find a bipartisan solution to that challenge and I am hopeful that we can work together over the coming weeks and months to give the Highway Trust Fund some multi-year certainty and do it in a bipartisan way that also closes wasteful tax loopholes and makes the tax code more fair. In the 21st century economy, these kinds of changes to our tax code, ones that help workers and families in a fiscally responsible way, are opportunities we cannot afford to pass up.

We all know reforming our tax code will not be easy. The difference between Republicans and Democrats when it comes to making these changes are serious. But I also know, when both sides are willing to come together and make some tough choices, we can deliver. So, I am hopeful we will be able to move forward on some of the proposals I have laid out today, and I hope, going forward, we can build on them to achieve the kind of comprehensive tax reform that will offer more workers and families a fair shot and really help us build the foundation for broad-based economic growth in the future.

With that, I want to thank our witnesses for joining us again today and I will turn it over to my Ranking Member, Senator Sessions, for his opening remarks.

OPENING STATEMENT OF SENATOR SESSIONS

Senator SESSIONS. Thank you, Chairman Murray, and thank you for your hard work and for this hearing with good witnesses on economic fairness.

American workers are, indeed, right to believe that Washington actions are stacking the deck against them. As Senator Murray noted, Washington and Wall Street are booming. The greatest growth area in the United States is

Washington, D.C. The highest home values and incomes are in this beltway area, sucking wealth out from middle America. So, finding out what these issues are and how to fix the problem we have is an important and valuable thing, and hopefully, we can reach some bipartisan agreements on a number of areas that can improve our situation.

Over the last five years, Washington has surged our debt from $10 trillion to $17 trillion, promising all the time that this borrowing and spending would create a better economy for the very people that we are now lamenting who are hurting. Now, that is just the bottom line. I do not think these policies are working, will work, or will ever work. You cannot borrow your way to prosperity.

Lobbyists, consultants, and politicians are doing quite well, but median household incomes have declined by $2,268 since 2009. This is a stunning statistic. It is very real. I have not heard it disputed. Both parties seem to agree with that.

What policies have we been using that have created this? Is there anything we could have done better? The Federal Reserve has pursued an aggressive easy money policy that has been great for the investor class, but at last week's hearing, where we heard from Dr. Keith Hall, the former Commissioner of the Bureau of Labor Statistics. He explained, quote, "We have seen an unprecedented worker disengagement from the labor force since the end of this recession." I think that is an undisputed fact.

Among workers without a high school diploma, nearly one in four are unemployed, under-employed, or discouraged from working. And African Americans and Hispanics, as a group, are hurting more than any other groups in America.

Meanwhile, the U.S. logged a trade deficit of $42 billion in February, the highest in six months. Overall, there are 1.7 million fewer manufacturing jobs today than there were in December of 2007. Yes, robotics are a part of that, but we need to have more growth and we are still not seeing the growth that we need. Last year, growth came in at 1.9 percent GDP growth, well below experts' projections and well below what we need to create an economy that is healthy. Yet, Washington continues to place new barriers to work.

It is fundamentally a vision, colleagues, of a redistribution of wealth. Just tax more of people who have wealth and pass out more to people who do not have it and this will somehow fix our problems. I reject that. That will not fix this economy. We need a tighter labor force. We need a growing economy that is creating jobs. And it is hard for us all to agree, but there are ways, I think, we can agree on this.

Now, CBO tells us that the President's health plan will eliminate the equivalent of 2.5 million full-time jobs over the next decade, eliminate those jobs. How can a proposal that is supposed to help America is going to eliminate 2.5 million jobs?

And the President has proposed more subsidies for adults without children. But, this proposal, when interacting with Obamacare, the Affordable Care Act subsidies, creates a disincentive to work. For example, because EITC and the Affordable Care Act have phase-out schedules as your income rises, an adult without children whose income goes from $14,700 to $17,700 would lose 75 cents in higher taxes and reduced government benefits for every dollar they earn. That creates a disincentive to work.

The Federal Government spends more than $750 billion each year on more than 80 means-tested income support programs. We need to consolidate and reorganize these programs in a way that affirms work, that does not punish it. Work is central to life. It is central to character. It is central to self-esteem. It is central to the ability of a nation to provide better things for people. We need to reaffirm work. We need to insist that every American work. It is good for them and good for the country.

We need a tax policy that allows our industries to compete. We have the highest tax rates in the world. How can that be good for business growth in America and job creation? Yet, when it is talked about that we would reduce those rates to a more competitive level, members are attacked. They say, you do not care about poorer people. We want to attack the businesses more. Real tax fairness should remove the competitive disadvantage faced on American workers and businesses.

But, our friends in the majority believe that tax fairness means more money for Washington. They propose to eliminate popular deductions, not for the purpose of lowering rates, as a Democratic witness told us a few months ago, or as Chairman Baucus says, but for new government programs, new government spending.

What we cannot do is borrow our way to prosperity. Our excessive borrowing has already inflicted a painful toll. Right now, it is hurting the economy now, this debt is. It is slowing growth.

Last year, we paid our creditors $221 billion in interest payments on the debt last year. That is five times the entire Federal highway budget that Senator Murray mentioned that we need to work on and see if we cannot fix. Five times that amount of money went to interest on the debt last year alone. But CBO now estimates that annual interest payments will grow to $880 billion in ten years. That means one year's interest payment ten years from now will be almost 12 times greater than what the Federal Government spends on education.

Tax, spend, borrow, regulate is not only dangerous, but it will not create jobs and higher wages. We must act to create more jobs and rising incomes without adding to the debt. Here are things that I think clearly will all improve the situation. Let us produce more American energy. Let us eliminate all wasteful regulations that do not produce benefits. Let us make the tax code more competitive and more growth oriented. Let us ensure fair trade, stand up for our trading partners and insist on fair trade and end the cheating. Let us adopt an immigration policy that serves the American workers' interest, that creates rising wages, not falling wages. We need to turn the welfare office into a job training center, where people come there for help temporarily and they are helped and assisted into a way to produce more and have a higher income. We need to streamline the government to make it leaner and more competitive and productive. We need to balance the Federal budget to restore economic confidence.

All of these would create more jobs for American workers. All of these steps would empower the individual, not the bureaucracy. And all of these steps would grow the middle class and not the government.

Thank you, Madam Chairman. I look forward to hearing from our witnesses.

Chairman MURRAY. Well, thank you very much, and with that, we will turn to our witnesses. Again, thank you all for being here.

Mr. Buckley, we are going to begin with you.

STATEMENT OF JOHN L. BUCKLEY, FORMER CHIEF TAX COUNSEL, HOUSE COMMITTEE ON WAYS AND MEANS, AND FORMER CHIEF OF STAFF, JOINT COMMITTEE ON TAXATION

Mr. BUCKLEY. Thank you, Madam Chairman and Ranking Member Sessions, for the opportunity to participate in your hearing today.

It is clear that tax reform will not be on the agenda this year, but I believe that, ultimately, we will see a reform of our tax system. It is inevitable. How that reform is structured, however, will have a major impact both on our economy and on long-term budget issues faced by this committee. So, clearly, the committee is correct to start examining the impact of tax reform.

For many people, tax reform is defined by reference to the model of the 1986 Tax Reform Act: Lower rates, broadened base, distributional neutrality, and revenue neutrality. I think the Chair quite accurately points out that there are big demographic and fiscal changes since 1986 that no longer make that model the appropriate one for tax reform. Also, I think it is very important to understand that although the 1986 Act was an enormous accomplishment, and I take great pride from being part of that, it failed in two major respects.

First, it did not result in a stable rate structure. Fairly quickly after 1986, there were a series of substantial increases in the top marginal rate, the first one signed by President George Bush. In my opinion, it was the structure of the 1986 Act that made those rate increases inevitable and that offer a caution about tax reform going forward.

In no small part, the rate reductions in the 1986 Tax Reform Act were financed by revenues from timing changes to our tax law. Timing changes do not affect the ultimate size of a deduction or income inclusion. They merely affect the year in which that item is taken into account.

If you repeal a timing benefit, and most tax preferences are timing benefits, you have a one-time temporary increase in revenues during the budget window due to the transitional effects of moving to the new system. If you finance a rate reduction with revenue from a timing benefit, which is exactly what the Camp tax reform plan does, you will end up with a bill that appears to be revenue neutral during the budget window because of those temporary transitional taxes, but will result in large and growing deficits outside the budget window. That is exactly what I believe happened in the 1986 Act.

Second, the economic benefits predicted from the 1986 Act never materialized. In that respect, the 1986 Act was not unique. Almost all of the economic predictions, which are largely based on supply side economics, of the major revenue acts enacted after 1981 were simply wrong. They never provided the economic growth that was predicted when they were being considered. Indeed, the 1993 tax increase was preceded by predictions of extraordinary economic dislocations that simply never happened.

I would argue, instead of following the 1986 model, I think the goal for—there should be three goals for future tax reform.

First, it should result in a stable revenue structure. I think much of the debate over tax reform ignores the fact that the fundamental purpose of our tax system is to raise revenue to cover reasonably expected government expenditures. Tax reform should initially focus on that goal, not an arbitrarily selected top rate. Given the long-term fiscal challenges that we face, I believe that means tax reform must result in additional revenues.

Also, the Congress should not be bound by the ten-year budget window in assessing the impact of tax reform. I assure you, based on my experience, the ten-year budget window is easily manipulated. I think the Camp tax reform plan is a particularly artful manipulation of the ten-year budget window. Proponents of substantial changes to our entitlement programs point to concerns largely outside the budget window. Proponents of tax reform should not be able to avoid the impact of their proposals outside the ten-year budget window.

But, above all, tax reform should not worsen the long-term budget projections. I see no benefit from repeating the 1986 reform example, and that is unsustainably low rates followed by very politically painful decisions to reverse the impact of those rates.

Second, I think tax reform should be designed with the goal of increasing economic opportunities. I have to say that I agreed with much of what Senator Sessions said about the lack of job opportunities in this country. I believe it is the lack of job opportunities that is the biggest challenge facing this government, not the lack of willing and able workers. The projections of economic growth from tax reform are largely based on their expansion of the labor force, not their expansion of work opportunities. Indeed, I think that you should have a different focus in tax reform.

Finally, tax reform should not increase the growing inequality in income and wealth in this country. A tax reform that is based on temporary tax increases to finance rate reductions could become quickly regressive outside the budget window when those temporary tax increases end.

Thank you, Madam Chairman.

[The prepared statement of Mr. Buckley follows:]

U.S. Senate Committee on the Budget

Hearing: Tuesday, April 8, 2014
"Supporting Broad-Based Economic Growth and Fiscal Responsibility through a Fairer Tax Code"

John L. Buckley, J.D.

John Buckley is a well-known D.C. tax policy expert. Now retired, Buckley was a congressional staffer for more than 35 years, most recently serving as Chief Democratic Tax Counsel on the Ways and Means Committee (1995 – 2010). Before that, Buckley was Chief of Staff of the Joint Committee on Taxation (1994-1995) and an Assistant Legislative Counsel in House Legislative Counsel's Office (1973-1993). After his career on the Hill, Buckley spent roughly two years teaching in the graduate tax program at Georgetown University. Buckley received his J.D. from the University of Wisconsin.

Jane G. Gravelle, Ph.D.

Jane Gravelle is a Senior Specialist in Economic Policy at the Congressional Research Service. She is the author of nearly 100 CRS reports on tax and economic issues. Dr. Gravelle is also well-known in tax policy circles, having testified in front of the House Ways and Means Committee, the Senate Finance Committee, and the Joint Economic Committee.

Diana Furchtgott-Roth

Diana Furchtgott-Roth is a Senior Fellow at the Manhattan Institute for Policy Research. She is a contributing editor of RealClearMarkets.com, and a columnist for the Washington Examiner, MarketWatch.com, and Tax Notes. From 2003 to 2005, Ms. Furchtgott-Roth was chief economist at the U.S. Department of Labor. From 2001 to 2002, she served as Chief of Staff of President Bush's Council of Economic Advisers. She also served as deputy executive director of the Domestic Policy Council and associate director of the Office of Policy Planning under President George H.W. Bush from 1991 to 1993, and was an economist on the staff of President Reagan's Council of Economic Advisers from 1986 to 1987.

Written Testimony of John L. Buckley Senate Budget Committee

April 8, 2014

INTRODUCTION

Madam Chairman, Ranking Member Sessions, I want to thank you and the other Members of the Committee for the opportunity to appear before you today.

Madam Chairman, I applaud you for holding this hearing and hope that this hearing is an indication that you and this Committee intend to play an active role in the tax reform debate. Tax reform will not be enacted this year, but I believe that it will happen in the future. How that tax reform is structured could have an enormous impact on our economy and long-term fiscal challenges. Tax reform if properly structured could be a first step in resolving those fiscal issues. But, tax reform as currently proposed in the House could worsen the already bleak long-term fiscal problems. If such a plan were enacted, this Committee and its House counterpart would be the ones charged with the politically difficult task of developing a budget plan to reverse that impact. And the adverse effects are likely to be felt at around the same time this Committee could be dealing with the demographic problems associated with entitlements. This Committee simply cannot ignore the debate.

I strongly believe that our tax system is in need of significant reform and expect that virtually every Member of this Committee would agree. Notwithstanding that consensus, there is little prospect for reform in the near future for one reason. Many of you and other tax reform proponents define tax reform in sharply different ways.

For many, the concept of tax reform is defined by reference to the 1986 tax reform; a significant reduction in rates financed by a broadening of the tax base with the goals of revenue neutrality and distributional neutrality (not altering the current distribution of tax burden). Recently, House Ways and Means Committee Chairman Dave Camp released a comprehensive tax reform plan that in many respects is consistent with the 1986 model. It contains significant marginal rate reductions for most individuals and for corporations.[1] Like the 1986 Act, it is advertised as achieving both revenue neutrality and distributional neutrality. The same type of economic theories that promised increased economic growth from the 1986 reform are now being used to promise increased growth from the Camp plan.

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[1] The most notable exception is the approximately 50 million individuals in the current 10 and 25% brackets who will not see a reduction in their marginal rate. Many single taxpayers with children also may see little rate relief since the Camp draft eliminates current law favorable filing status for those taxpayers.

Surprisingly, the Camp plan, like the 1986 Act, contains a significant net tax increase on business income to finance reductions in personal income taxes.[2]

I believe that the question for this Committee is not whether a tax reform plan is consistent with the 1986 model. The real question is whether tax reform should follow that model.

1986 TAX REFORM

I would argue that the 1986 Tax Reform Act is at best an imperfect model for future tax reform efforts. The 1986 Act was a product of some unique circumstances.

Arguably, the Congress in 1986 had earned the luxury of being able to pursue a revenue- neutral tax reform. It enacted major tax increases in 1982 (the Tax Equity and Fiscal Responsibility act of 1982) and 1984 (the revenue provisions of the Deficit Reduction Act of 1984). The estimated revenue increases from those two laws, signed by President Reagan, were sizable even by today's standards, a combined revenue increase in fiscal 1987 of approximately $90 billion.[3] In terms of its relationship to the then level of the economy, the revenue increases are even more dramatic. Also in 1983, the Congress enacted a major restructuring of the Social Security system that contained both benefit reductions and revenue increases.[4] That law was an extraordinary accomplishment and it has remained in effect without any significant change for the last 30 years.

Perhaps even more important, in 1986, the long-term fiscal problems discussed at length in the recent CBO budget projections were 28 years further in the future than they are now.

Another unique circumstance behind the 1986 Act was the fact that the Congress was able to finance the rate reductions in part by addressing widespread tax sheltering and other "loopholes". Those changes were not without controversy, but their availability reduced the need to address the generally applicable benefits for individuals or incentives for domestic investment that are "on the table" in the current debate. In contrast to 1986, many of the so-called base broadeners or "tax expenditures" under consideration in the current discussion of tax reform are longstanding features of our system embedded in the fabric of our economy.

I do believe that the 1986 reform was an enormous accomplishment in many respects. Its attack on tax shelters was critical to the integrity of the tax system and maintaining the voluntary compliance necessary for the collection of tax liabilities. But, as "past is prologue", most important for this Committee is the fact that the 1986 reform failed in two major respects.

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[2] See JCT macroeconomic analysis of Camp plan, page 6.
[3] See revenue tables appearing at the end of the 1982 and 1984 JCT "bluebooks.
[4] The Social Security Amendments of 1983.

First, it did not result in a stable rate structure. The reversal of the rate reductions started fairly quickly. In 1990, then President George Bush signed legislation increasing the top individual rate from 28% to 31%. Perhaps merely a coincidence, that revenue increase took effect in the last year of the 5-year budget window used in estimating the revenue effects of 1986 reform. The 1993 deficit reduction legislation increased the top rate to its current level of 39.6%.

In my opinion, the structure of the 1986 Act made those rate increases inevitable. The 1986 Act resulted in a net permanent reduction in individual income tax liability. I use the term permanent to describe a provision that results in a change in liability in one year without a reversal in later years. A rate reduction is an example of a permanent benefit; whereas a repeal of an itemized deduction is an example of a permanent tax increase.

In no small part, the permanent individual income tax reductions in the 1986 reform were financed with timing changes that did not alter the ultimate size of a deduction or income inclusion, merely the year in which that item is taken into account. Even the anti-tax shelter provisions were largely timing changes. Repealing a timing benefit can result in a temporary tax increase during the budget window due to transition effects of moving to the new system.

In summary, a rate reduction financed by repeal of timing benefits can be revenue-neutral during the budget window but result in growing and non-sustainable revenue losses outside the budget window when the temporary, transition effects disappear. I believe that is what occurred in the case of the 1986 Reform.

Second, the economic benefits predicted from the rate reductions and base broadening of the 1986 Act simply never materialized. The 1986 Act was not unique in that respect. The cumulative economic data of the last 30 years suggests that that the 30-year experiment with tax policy guided by supply-side economic principles and notions of the primacy of market outcomes has failed. One cannot find in the economic data for the last 30 years any evidence that supply-side-based tax policy has delivered its promised benefits. Also, there is no evidence that the 1993 tax increase had the negative effects predicted by many supply-side economists before its enactment.

TAX REFORM OBJECTIVES

Instead of simply following the 1986 model, I would suggest that a future tax reform plan should have the following objectives.

Stable Rate Structure

Much of the debate over tax reform ignores the fact that the fundamental purpose of our tax system is to raise sufficient funds to cover reasonably expected government expenditures. Tax reform should be based on accomplishing that purpose, not some arbitrarily selected top tax rate. Also, the Congress should not be bound by the 10-year budget window in assessing the impact of reform. I assure you that the budget window is easily manipulated. Proponents of substantial changes to entitlement programs point to problems largely occurring outside the budget window. Proponents of tax reform should not be able to ignore the impact of the legislation outside the budget window.

Most budget analysts support the notion that a combination of additional revenue and spending reductions will be necessary to address long-term budget issues. Tax reform offers the opportunity to begin the necessary response to those issues. With regard to the need for additional revenue, I would note that the last Federal budget to show a modest surplus came in fiscal year 2000 when receipts were approximately 20% of GDP, substantially higher than the current level of 17.5%.

But above all, tax reform should not worsen the long-term budget problems. There seems little benefit in repeating the experience of the 1986 Reform Act, unsustainable low rates followed by politically painful responses to the resulting deficits.

Economic Growth and Expanding Job Opportunities

As with the basic notion of the need for tax reform, few would argue with the proposition that tax reform should be designed with the goal of expanding economic opportunities in this country. But, again there are disagreements on how to accomplish that goal.

During the last 30 years, most major tax legislation has been shaped by supply side principles and the notion that market outcomes not affected by tax incentives offer the best path for economic growth. Underlying those economic principles are the assumptions that the "amount of output is determined by the availability of labor and capital"[5] and the demand for labor and capital will equal supply (ie. no unemployment or unused business capital). The assumption of equilibrium of supply and demand is critical for projections of positive economic growth from tax policy changes designed to increase the supply of labor and capital.

A recent article by Sandille Hlatshwayo and Nobel Laureate economist Michael Spence suggests that those economic theories have little relevance now when "the global economy has an abundance of human resources and they are becoming more accessible as time goes on." [6] Those resources are becoming more accessible because multinationals have become adept at creating and managing global supply chains and they are getting better all the time.

The Spence article looks at employment growth in the US between 1990 and 2008 in what is referred to as the tradable sector of the economy (the sector subject to cross-border competition) and the non-tradable sector. Not surprisingly, virtually all the domestic employment growth during that period

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[5] JCT macroeconomic analysis of Camp plan.

[6] Michael and Sandile Hlatshwayo, "The Evolving Structure of the American Economy and the Employment Challenge", Council on Foreign Relations, March 2011.

(97.7%) occurred in the non-tradable sector, with growth in government, healthcare, and retail accounting for most of that growth. In the tradable sector, there was growth in high end services that balanced declines in manufacturing. The article concludes that continued large employment growth in those non-tradable sectors is unlikely and, therefore, there is "a long-term structural challenge with respect to the quantity and quality of employment opportunities in the United States".

In the opinion of the authors, the domestic employment challenge is not the result of market failures. Multinational enterprises moving jobs overseas are doing exactly what the market is telling them to do. A tax reform based on the primacy of market outcomes will not reverse the declines in domestic manufacturing employment. Indeed, it could worsen the domestic employment challenges by repealing incentives for domestic investment under the guise of economic neutrality and liberalizing tax rules for the foreign operations of US multinationals.

In summary, the question for tax reform is whether the problem facing this country is lack of labor supply or reduced employment opportunities which by itself tends to reduce labor supply. I believe that the Spence article makes a convincing case that the lack of employment opportunities is our main challenge. If that is the case, the Spence article concludes that tax reform could help if "it were to clearly favor investment in a broad range of productive assets of all kinds, including hard and soft infrastructure and human capital". Such a reform might violate notions of economic efficiency, but as the Spence article concludes every good cause is worth some inefficiency.

It is worth noting that many other countries see expanding job opportunities in their country as a "good cause" and pursue non-neutral tax policies to accomplish that goal.

Distributional Neutrality

Few would disagree with the proposition that tax reform should not increase the growing inequality in income and wealth in this country. Ways and Means Committee Chairman Dave Camp has advertised his plan as not altering the current distribution of tax burden. In doing so, he relies on the analysis of the Joint Committee on Taxation (JCT).

In analyzing the distributional effect of changes to tax laws, the JCT uses what I call a "cash flow" method. Its analysis is based on the actual revenue gains or losses in each of the 10 years in the budget window, rather than an attempt to measure the economic burdens or benefits of the changes or do the analysis on the basis of the law in effect after transition effects (the fully-phased- in law).[7] The amount distributed by the JCT will include both purely one-time revenue increases and the temporary revenue increases from repeal of timing benefits.

[7] This means that the benefit or burden for any one year roughly reflects the revenue gain or loss for that year. Discrepancies can occur for amounts allocated to nontaxable persons (foreign persons) or where there is uncertainty about income levels of the persons subject to the changes (repeal of exclusions where there is insufficient data on income levels of individuals receiving those exclusions)

The JCT changed its distributional method last year by including corporate taxes and taxes on the income of pass-through entities in the analysis, but retained its cash flow approach.[8] That change was consistent with the treatment of those taxes by the Treasury and CBO. In the long run which is generally assumed to be the end of the 10-year budget window, the JCT allocates 75% of those taxes to owners of domestic capital and 25% to labor. Initially, 100% of those taxes will be allocated to owners of domestic capital, with ratable changes until the allocation reaches the final 75/25% split. Most of those taxes will be allocated to upper income taxpayers because of income inequality and the fact that the distribution of capital ownership is dramatically more unequal than income.[9]

Most business tax preferences are timing changes, the repeal of which would result in temporary tax increases during the budget window. Most of those temporary tax increases would be allocated to upper income taxpayers because of inequality in both income and wealth. As a result, a tax reform plan that relies on those temporary tax increases for distributional purposes could become sharply regressive as those temporary tax increases disappear after the 10-year budget window.

CAMP TAX REFORM PLAN

It is clear that the tax reform plan released by Ways and Means Committee Chairman Dave Camp will not see action this year. But, some suggest that it will be the model for future reform efforts and I see it as an example of why this Committee should be an active participant in the tax reform debate.

Revenue Neutrality

The Camp tax reform plan is advertised as revenue neutral, but even a brief examination of how it nominally complies with that standard makes it clear that it would result in a substantial reduction in revenues after the 10 year budget window. If the permanent tax benefits and permanent tax increases in the Camp reform plan were netted, it would show a permanent tax reduction over the 10-year budget window of well over $1 trillion. Following are examples of the temporary tax increases used to offset the cost of that permanent tax reduction.

- The Camp draft contains a substantial amount of purely one-time tax increases. One example is the one-time tax of $170 billion on the un-repatriated foreign earnings of US multinationals. Other examples include the estimated $79 billion from repeal of the LIFO accounting method and the estimated $23 billion from limitations on the cash method of accounting. Most of the revenue from those accounting changes reflects one-time tax increases that recapture the previous benefits of using the current law accounting methods.

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[8] See Modeling the Distribution of Taxes on Business Income, JCX-14-13, October 16,2013.
[9] Compare table 1 to table 5 in JCX-14-13.

- The Camp draft contains two provisions that are designed to shift individual retirement contributions from pre-tax, deductible contributions to nondeductible, Roth-type contributions. Those provisions would raise approximately $161 billion in the budget window. Essentially, these provisions are timing changes, but they are extremely favorable timing changes. The taxpayer making the Roth-type contributions is compensated for the acceleration of tax on wage income by an exemption from tax for the investment earnings on the contribution. Depending on the assumed rate of return on the investment of the contributions, these provisions could be a tax benefit masquerading as a tax increase.
- Finally, there a large number of pure timing changes, such as repeal of accelerated depreciation (approximately $270 billion), repeal of expense treatment for research expenses (approximately $192 billion) , repeal of expense treatment for advertising expenses (approximately $169 billion), limitations on the use of net operating losses (approximately $70 billion), changes in reserves and accounting methods affecting insurance companies (approximately $54 billion) and repeal of non-recognition treatment for like kind exchanges (approximately $40 billion) . A substantial amount of those revenue gains reflects temporary tax increases in the budget window as a result of the transition to the new rules.

The JCT revenue table for the Camp plans shows a significant revenue loss in the last year of the budget window, a small indication of its long-term impact on deficits.

Distributional Neutrality

The claim that the Camp plan meets the goal of distributional neutrality depends on the distribution of the one-time and temporary tax increases discussed above. Once those revenues disappear, the Camp plan will contribute to income inequality. The JCT distribution table for the last year in the budget window shows a net tax reduction for individuals earning over $1 million per year, another small indication of things to come.

JCT Macroeconomic Analysis

Chairman Camp has used the JCT macroeconomic analysis in promoting his tax reform plan, but the conclusions reached by the JCT are far more ambiguous than his rhetoric would suggest.

First, the JCT analysis shows the limitations of macroeconomic analysis. There is no consensus on models or assumptions used in making that analysis. As a result, the JCT used two models and sets of different assumptions that provided a broad range of potential results.

Second, the model that showed the greatest growth from the Camp plan (the OLG model) contains a set of assumptions that bear no relationship to the real world. It assumes that there is no unemployment or capital that is not fully invested. It assumes that the federal budget problem has been solved through an assumed set of tax increases and entitlement reductions. It assumes that individuals can predict the future with accuracy. We would all scoff if the JCT did its revenue estimates against such a fictional baseline. I see no reason why we should not scoff at a macroeconomic analysis done against a fictional baseline.

The other model used by the JCT (the MEG model) was developed by them. I may disagree with the supply-side principles used in the model because I agree with the Spence article conclusion that lack of job opportunities is the largest challenge faced by this country. I believe that greater job opportunities will increase labor supply to a greater extent than marginal rate reductions. However, you have to respect the work and intellectual discipline reflected in the model. The model analyzes the Camp plan using a baseline that reflects our actual economy and budget situation. It has the added benefit of not assuming individuals can predict the future with accuracy.

The MEG model shows that the Camp plan rejects the Spence advice that tax reform should clearly favor investment of all kinds. According to the JCT analysis, the Camp proposal "is expected to increase the cost of capital for domestic firms, thus reducing the incentive for investment in domestic capital stock". The MEG model analyzes the effect of those reduced incentives and concludes that in the second half of the budget window, the Camp plan would reduce domestic investment capital under each of 6 different assumptions.

A 2007 Bush Treasury report also suggests that a business tax reform like the Camp plan " might well have little or no effect on the level of real output because the economic gain from the lower corporate rate may well be largely offset by the economic cost of eliminating accelerated depreciation".

Notwithstanding the decreased domestic investment capital, the MEG model shows modest increases in growth due to the increase in labor supply due to the marginal rate reductions and the economic stimulus provided by the net $590 billion reduction in personal income taxes. Essentially, the model projects increased growth by increasing taxes on businesses and transferring that amount to individuals who have a greater propensity to spend.

CONCLUSION

Madam Chairman, I will simply conclude by repeating what I said at the beginning of my testimony. This Committee should be fully engaged in the tax reform process as the form of tax reform ultimately chosen will dramatically affect long-term budget and economic conditions. If you do not, this Committee could find itself in the position of prescribing the politically painful medicine required to respond to even more daunting long-term fiscal issues.

Chairman MURRAY. Thank you very much.
Dr. GRAVELLE.

STATEMENT OF JANE G. GRAVELLE, PH.D., SENIOR SPECIALIST IN ECONOMIC POLICY, CONGRESSIONAL RESEARCH SERVICE

Ms. GRAVELLE. Thank you very much for inviting me here today.

The United States, due to the growth of programs to serve an aging population, which we have known is coming for a long time, faces an unsustainable debt. Now, tax reform might serve as a vehicle to raise revenue to reduce this debt as well as for lower rates or to pay for alternative, more desirable tax benefits. A small change in tax revenue could close much or all of the fiscal gap and prevent the debt from rising as a percent of GDP.

Although raising taxes to reduce deficits might cause a modest initial reduction in GDP in the short run, those effects are expected to be offset by the benefits of reducing the crowding out of private investment. That is, increasing taxes to reduce the debt is expected to contribute to positive economic growth.

Revenue-neutral tax reform is often argued to cause economic growth through rate reduction, however, the same base-broadening provisions that you use to finance these rates can have effects on effective marginal tax rates. Just think of the State and local tax deduction. If you reduce the deduction for it, you have raised the marginal tax rate, and that happens with a lot of provisions. So, the overall effects of this are really very uncertain and probably negligible.

A study by two prominent economists found that the tax reform of 1986, which lowered rates and broadened the base, had little effect on the economy in the aggregate. Pursuing base broadening, because revenues can be used to lower statutory rates, with the objective of spurring economic growth is unlikely to achieve its goals.

Although base broadening simply to permit rate reduction is unlikely to achieve a growth objective, tax reform can potentially improve fairness, efficiency, and simplicity. Tax reform can also eliminate or limit existing benefits, but it might also add or expand provisions. The Tax Reform Act of 1986, for example, expanded the Earned Income Tax Credit. And the provision that Chairman Murray, that you have recently proposed for the EIC and the second worker, there are a lot of merits in this.

I actually wrote a paper about some of this in 2006, where, basically, I showed with my co-author, who is my daughter, that you would improve horizontal equity. The most important thing to increase horizontal equity in the tax law is to increase the EIC for couples, married couples without children and single individuals. There is very little EIC for them.

Despite tax expenditures that are 80 percent of individual tax revenues, potentially enough to decrease rates by 43 percent, a CRS study suggested the difficulties in broadening the tax rate, because these tax expenditures, in most cases, are viewed as serving an important purpose. I mean, among the large tax expenditures are taxing Medicare to the recipients, taxing capital gains at death, and taxing defined benefit pension plans, all of which technically are very difficult to do.

So, we kind of went through the top 20 tax expenditures and found—we suggested that base broadening would—feasible base broadening would be likely no more than six percent to nine percent of revenues. The individual revenues in Chairman Camp's proposal were of this magnitude, about six percent. Now, this amount would not fund significant rate reduction, but if used to raise revenue, would largely close the fiscal gap.

It is particularly difficult to find provisions that would lower the top individual tax rate to 25 percent without shifting the burden of the middle class. In the Tax Reform Act, top rate cuts were financed, in part, by taxing capital gains at ordinary rates and restrictions on tax shelters, options that do not appear to be feasible now. Both of the fully specified tax reform proposals that I mentioned in my testimony both have a top rate of 35 percent.

Corporate tax expenditures are much smaller relative to corporate tax revenue. Setting aside the treatment of foreign source income, repealing every corporate tax expenditure would, according to my estimates, prevent [sic] a reduction in the corporate rate to 29.5 percent. If deferral of foreign source income is eliminated, the rate could be reduced to 27 percent. So, that is every tax expenditure that I am talking about.

While it might be more feasible to eliminate corporate tax expenditures, there are also trade-offs. For example, financing a rate cut with accelerated depreciation, which might be desirable on other grounds, would nevertheless increase the cost of capital. Circumstances are very different for corporate rate reduction than they were in 1986. The 12 percentage point reduction in the corporate rate at that time was financed largely by the repeal of the investment credit. Accelerated depreciation today would allow only a 2.2 percentage point reduction.

One area where I believe revenue could be raised without increasing the domestic cost of capital is increasing the tax on foreign source income. Measures could also be taken against artificial profit shifting, which is not an issue of the treatment of investment but of tax avoidance. There are also some other provisions, both individual and corporate, that might be classified as loopholes—examples are carried interest, inherited IRAs, there is a whole series of these—that might be easier to address than a lot of tax expenditures.

A budgetary risk in tax reform is the use of provisions that have transitory revenue gains to finance permanent tax cuts, which would increase the deficit outside the budget window. I describe in my testimony examples of these practices in the Tax Reform Act of 1986, significant transitory provisions and a number of revenue-raising provisions in current proposals that produce less revenue loss outside the budget window.

The Budget Committee has discussed including macroeconomic estimates. I believe that economic science and research is not at the stage that we could get reliable estimates for macroeconomic effects. However, we are certainly able to get reliable estimates for the steady state effects, and it would be very easy for the JCT to estimate any of these tax proposals as they would appear had they been in place for many years, and that is something I think the Budget Committee might consider.

Thank you.

[The prepared statement of Ms. Gravelle follows:]

Statement of Jane G. Gravelle
Senior Specialist in Economic Policy
Congressional Research Service
Before
The Senate Budget Committee
United States Senate
April 8, 2014
on
Supporting Broad-Based Economic Growth and Fiscal Responsibility
through a Fairer Tax Code

Madame Chairman and Members of the Committee, I am Jane Gravelle, a Senior Specialist in Economic Policy at the Congressional Research Service of the Library of Congress. I would like to thank you for the invitation to appear before you today to discuss tax reform.

In this testimony, several topics are addressed. The first is the effects on GDP of a tax increase to reduce the deficit. The next addresses the expected effects of a revenue neutral tax reform. The following sections discuss overall individual and corporate tax reform design, base-broadening provisions outside of tax expenditures (including so-called "loopholes"), and concerns about timing provisions that raise revenue in the short run but not in the long run.

Tax Increases to Reduce the Deficit

As the economy begins to approach full employment, a major issue confronting policy-makers is how to reduce the deficit to address an unsustainable debt.[1] Despite the slowing of medical cost growth, the increasing share of the elderly in our population means that programs that serve these groups (Social Security and especially Medicare) will grow as a share of output if current service levels continue. The expected growth in spending on these programs has long been recognized, but has yet to be fully addressed either with program cutbacks or additional revenues. Growth in the debt is also due to an expected increase in interest rates and interest payments as the economy recovers, which is exacerbated by the additional debt accumulated during the recession and recovery.

Without either reducing spending or increasing taxes, the debt will continue to grow relative to GDP. The Congressional Budget Office (CBO) has estimated that the cost of closing the fiscal gap (stabilizing the debt to GDP ratio at 73%) through 2038 would require an ongoing reduction in the deficit by 0.9% of GDP ($150 billion); to return the debt to its pre-recession level of 38% of GDP would require a reduction of 2.1% of GDP ($360 billion currently).[2]

Tax reform and base broadening provide an opportunity to raise revenue that could be used to reduce the deficit, as well as an opportunity to finance rate reduction or alternatively, more desirable tax reductions.

There may be some concern about the effect of tax increases on economic growth. However, the evidence suggests that supply side effects of tax changes are uncertain in

[1] During recession and recovery, reducing the deficit can be contractionary; the policy prescription in a recession is to increase spending and/or cut taxes. An unsustainable debt is one that grows as a percentage of GDP.
[2] CBO, *The 2013Long-Term Budget Outlook*
http://www.cbo.gov/sites/default/files/cbofiles/attachments/44521-LTBO2013_0.pdf

direction, although small in magnitude. In any case, over time, decreases in the deficit are expected to lead to increased output through less crowding out of private investment. Based on standard labor supply and savings elasticities, an across-the- board income tax rate increase that closed half the fiscal gap referenced earlier ($75 billion, or 0.45% of GDP) would cause output to fall, via supply side effects, by slightly over 0.1% in the short run and, at the maximum, less than 0.4% in the long run.[3] These numbers are not growth rates but changes in levels, so they reflect a change in output compared to previous levels. With an economy growing at 2.2% typically, the short run effect is the equivalent of a one-time increase in output equal to two weeks of normal growth, and the long run effect is the equivalent of two months.

These estimates are similar to those based on a 2006 study of a tax rate reduction by the Joint Committee on Taxation, although their long run supply side effect (measured at 30 years) was a gain in output of about 0.5% of GDP. However, the JCT study also accounted for crowding out of private investment and found that growth would be reduced in the long run. That is, the effect of crowding out would more than offset supply side effects. Based on their projections, a tax increase equal to 0.45% of output would increase GDP by 0.5% in the long run (30 years).[4] While the supply side effect stabilizes fairly quickly (growth effects from deficit reduction through increases in individual

[3] See CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle. The estimate was for a tax change equal to 5% of output, so the results were scaled back.

[4] The JCT study was for a $500 billion tax cut over four years beginning in 2005, which based on projections at that time was 0.33% of GDP. The results were scaled up. They were also a weighted average of individual rate cut and corporate rate cut effects based on revenue shares. See CBO, The Budget and Economic Outlook: Fiscal Years 2005 to 2014 January 2004, http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/49xx/doc4985/01-26-budgetoutlook-entirereport.pdf.. The slightly larger long run effects in the JCT study may reflect, in part, a substitution from housing to business capital which increases gross domestic product but not necessarily net product because of depreciation differences. Replacement investment is required to maintain the capital stock, so a net product comparison provides better information about well-being.

income tax rates would overcome the supply side effects in about ten years) the effects from reductions in crowding out continue indefinitely. Thus, increasing taxes to reduce the debt is expected to contribute to positive economic growth.

Effects on the Overall Economy in a Revenue Neutral Tax Reform

In a revenue neutral tax reform, it is crucial to recognize that the behavioral response cannot be measured solely by statutory rate changes. The effective marginal tax rate determines this behavioral response and changes in the income base that change the share of income taxed at the margin also affect the marginal effective tax rate. For example, disallowing the deduction for state and local income taxes increases the tax burden at the margin. It is possible for base broadening provisions to raise effective marginal tax rates more than enough to offset the effects of a cut in statutory tax rates, leading to a contraction rather than an expansion in output.[5] For example, although reducing accelerated depreciation in exchange for a corporate rate cut may be a desirable policy, if the exchange is revenue neutral the cost of capital will increase because a corporate rate cut bestows a windfall gain on the return to existing capital. Economists studying the Tax Reform Act of 1986, which lowered tax rates and broadened the base, concluded that there was little real effect on the economy.[6]

This analysis suggests that pursuing base broadening because revenues can be used to lower statutory tax rates with the objective of spurring economic growth is unlikely to achieve its goals.

[5] See CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle.
[6] This conclusion is one that is reached with respect to the Tax Reform Act of 1986 which broadened the base and cut tax rates by Alan Auerbach and Joel Slemrod, "The Economic Effects of the Tax Reform Act of 1986, *Journal of Economic Literature*, Vol. 35, June 1997, pp. 589-632.

Designing a Tax Reform

Although base broadening simply to permit rate reduction is unlikely to achieve a growth objective, this type of tax reform can potentially improve fairness, efficiency and simplicity. Fairness may reflect issues of vertical distribution (how taxpayers at different income levels are treated) and horizontal distribution (equal treatment of similarly situated taxpayers). Tax reform can eliminate or limit existing tax benefits, but might also add or expand provisions. The Tax Reform Act of 1986, for example, included measures to reduce the numbers of low income individuals on the tax rolls and to expand the earned income credit (EIC).

The topic of tax reform is vast, and can only be addressed in a limited way in this testimony. These comments are based on related CRS reports and on tax reform proposals in the Congress and by the Administration, including the comprehensive tax reform proposals by Chairman Camp[7] and in the Wyden-Coats-Begich bill (S.727 from the 112th Congress), the discussion draft proposals from the Senate Finance Committee,[8] the Obama Administration's budget proposals,[9] the recent proposal by Senators Murray, Reed, and Brown, [10] and the House Budget Committee Resolution.[11]

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[7] Documents describing the provisions of this proposal, and providing distributional, revenue, and macroeconomic analysis by the JCT can be found on their website, documents JCX-12-14 through JCX-22-14, at https://www.jct.gov/.
[8] Senate Finance Committee Tax Reform Discussion Drafts, http://www.finance.senate.gov/newsroom/chairman/release/?id=4f681789-343a-401c-a752-516028838040.
[9] The tax proposals in the budget are discussed in the greatest detail in the Treasury Green Book, *General Explanations of the Administration's FY2015 Revenue Proposals*, March 2014. http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2015.pdf
[10]Senator Patty Murray introduces the 21st Century Workers Tax Cut Act, March 26, 2014 .http://www.murray.senate.gov/public/index.cfm/newsreleases?ID=469512e4-8bbe-407f-9de4-b8e7369ca753
[11] The Path to Prosperity, at http://budget.house.gov/uploadedfiles/fy15_blueprint.pdf.

Individual Income Tax Reform: General Issues

Significant base broadening of the individual income tax is challenging because, although individual tax expenditures are large relative to individual income tax revenues (allowing rate reductions of 43% if all could be eliminated), many tax expenditures are unlikely to be altered.[12] In most cases, they are viewed as serving an important purpose, are important for distributional reasons, are technically difficult to change, or are broadly used by the public and quite popular. This study[13] suggested that although tax expenditures are 80% of individual income tax revenue, base broadening was unlikely to yield more than 6% to 9% of individual income tax revenue. The Camp proposal's revenue raisers listed under individual income tax account to 7.4% of individual income tax revenues by 2023. If two provisions that would not gain permanent revenue were omitted, the revenue raisers would be 5.9% of revenues. This amount is not adequate to fund large tax rate reductions, although if used to raise revenue, would largely close the fiscal gap.

Some illustrations highlight the difficulty associated with using individual income tax expenditures to raise revenues capable of financing substantial rate reductions. About 30% of individual tax expenditures are associated with savings incentives; many who wish to reform taxes would not wish to disturb these provisions. Provisions such as the deduction for extraordinary medical expenses provide relief for those with large medical expenses and less ability to pay, a provision that may be justified on equity grounds. Some provisions might be justified on both equity and efficiency grounds. For example,

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[12] See CRS Report R42435, *The Challenge of Individual Income Tax Reform: An Economic Analysis of Tax Base Broadening*, by Jane G. Gravelle and Thomas L. Hungerford, which examines the top 20 individual income tax expenditures, which account for 90% of the total.
[13] Ibid.

the earned income credit (EIC) is a major part of the income support system, but has also been found to encourage labor supply.[14] The exclusion of capital gains on owner-occupied housing prevents this tax from being a barrier to labor mobility and also helps to equalize the treatment of those whose health or financial circumstances require them to sell their home and those who can retain their home until death. Some income is received in kind and may be technically difficult to tax (such as defined benefit pensions, employer health plans, and Medicare benefits).

It is particularly difficult to find base broadening provisions that offset large rate reductions for high income taxpayers, such as the reduction to 25% that some have proposed, without shifting some of the burden to the middle class. The fully specified reforms (the Camp proposal and S. 727) had a top rate of 35%. In the Tax Reform Act of 1986, the lowering of top rates was combined with taxing capital gains at ordinary rates and restrictions on tax shelters. The latter is not available as a revenue raiser, and the former, under current scoring, gains relatively little revenue due to assumed realization responses.[15] No other provision is as concentrated among top earners as lower rates on capital gains.[16]

[14] See Nada Eissa and Hilary W. Hoynes, "Behavioral Responses to Taxes: The EITC and Labor Supply," in *Tax Policy and the Economy* (Chicago: University of Chicago Press, 2006), pp. 73-110 for a review of the evidence and for their own estimates.

[15] It would be appropriate to use static revenue effects to measure burden and estimates incorporating realizations responses for revenue estimates. However, raising taxes on capital gains solely for the purpose achieving more uniform distribution without gaining revenue may not be desirable. At the same time, a survey of research suggests that the capital gains realization responses used by the JCT may be too large. See CRS Report R41364, *Capital Gains Tax Options: Behavioral Responses and Revenues* by Jane G. Gravelle.

[16] Another capital gains provision is the exclusion of gains at death, but that proposal has been historically rejected. Other provisions that tend to be concentrated in higher income levels are tax exempt bond interest and lower rates on dividends. See CRS Report R42435, *The Challenge of Individual Income Tax Reform: An Economic Analysis of Tax Base Broadening*, by Jane G. Gravelle and Thomas L. Hungerford, Table 5, for progressivity indices for major tax expenditures..

Corporate Tax Reform

Corporate tax expenditures are much smaller relative to corporate tax revenues than individual tax expenditures are relative to individual income tax revenues. Setting aside the tax treatment of foreign source income, eliminating all corporate tax expenditures is estimated to allow a steady-state, revenue-neutral reduction of the corporate tax rate to 29.5%, or about a 15% reduction.[17] If deferral of foreign source income were also eliminated, the rate could be reduced to 27%, or a 23% reduction. While it may be more feasible to revise corporate tax expenditures than individual income tax expenditures, there are in most cases some issues about the desirability of these changes. For example, exchanging accelerated depreciation for rate reduction might be desirable for more neutral taxation of equipment and structures, but it will increase the cost of capital.

The current environment for tax reform is dramatically different for corporate tax revisions compared to the Tax Reform Act of 1986. The 12-percentage-point rate reduction from 46% to 34% was offset by the repeal of the investment tax credit.[18] Today, there is no investment credit and returning to the alternative depreciation system that defines the tax expenditure for accelerated depreciation would permit a reduction of only 2.2 percentage points.[19]

There is one area in which revenue increases may be used for revenue gain without increasing the cost of capital in the United States, which is to increase the tax on

[17] See CRS Report RL34229, *Corporate Tax Reform: Issues for Congress*, by Jane G. Gravelle.
[18] The corporate rate cut cost $116 billion over five years while the repeal of the investment credit raised $119 billion. There was also a slowdown in depreciation, but it accounted for only $8 billion. See JCT, *General Explanation of the Tax Reform Act of 1986*, May 4, 1987.
[19] See CRS Report RL34229, *Corporate Tax Reform: Issues for Congress*, by Jane G. Gravelle. The calculation is for depreciation claimed by corporations (not including unincorporated business) and in the steady state.

income earned abroad. One option for increasing taxes on income earned abroad is to repeal the deferral of foreign source income. Much of that deferred foreign income may be income that should be taxed in the United States under arms-length pricing and has been artificially shifted to low tax countries through techniques such as transfer pricing and leveraging (borrowing in high tax countries). Eliminating deferral, according to JCT estimates, would raise about $50 billion in 2014,[20] although the Treasury estimates are about $72 billion.[21] There is some disagreement about the direction which should be taken with respect to international tax reform, with some preferring moving towards a territorial tax where foreign source income would not be taxed and some preferring an elimination of deferral. Others might opt for something in between (such as taxing income abroad at a lower rate). All of these would address concerns about firms retaining funds abroad. Most conventional economic analysis supports a worldwide tax without deferral on economic efficiency grounds, because it tends to equate most closely the tax burden on income from capital invested at home and aboard.[22]

There is general agreement that, regardless of the tax regime, there are significant problems with artificial profit shifting.[23] For example, the Obama Administration's budget proposal projects revenue gains by 2024 equal to 7% of corporate revenues to deal with perceived abuses in the international system.[24] Chairman Camp's proposal would address some of these issues, while also moving to a territorial system that exempts

[20] JCT, Estimates Of Federal Tax Expenditures For Fiscal Years 2012-2017,JCS-1-13, February 1, 2013, p.30, https://www.jct.gov/publications.html?func=startdown&id=4503.
[21] U.S. Budget, *Analytical Perspectives*, p 205, . http://www.gpo.gov/fdsys/pkg/BUDGET-2015-PER/pdf/BUDGET-2015-PER.pdf
[22] See CRS Report RL34115, *Reform of International Taxation: Alternatives*, and CRS Report R42624, *Moving to a Territorial Tax: Options and Challenges*, by Jane Gravelle.
[23] See CRS Report R40623, *Tax Havens: International Tax Evasion and Avoidance*, by Jane G. Gravelle.
[24] Revenues in these and other examples are from CBO, *The Budget and Economic Outlook: Fiscal Years 2005 to 2014 January 2004*, http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/49xx/doc4985/01-26-budgetoutlook-entirereport.pdf.

dividends from foreign subsidiaries, projected to lose about 4% of corporate revenue, outside of the transitory one-time repatriation revenue (see discussion below).

Adding to Tax Benefits: The EIC Expansion and Second Earner Deduction

A proposal has been made by Senate Budget Committee Chairman Murray and co-sponsors, The 21st Century Workers Tax Cut, to expand the EIC for those without children and to allow a 20% deduction for second earners. These provisions would be financed in part by currently taxing income earned abroad in tax havens. An expansion of the EIC for these low income individuals without children is also contained in other proposals, including the Obama Administration's budget outline.

The EIC expansions for singles and married couples without children would contribute to horizontal equity. Currently these benefits are very small and phase out at very low incomes. A study that examined how fundamental elements of the tax code treated families of different sizes with the same ability to pay (that is, incomes adjusted for family size) indicated that the clearest change in the tax code to increase horizontal equity, or equal treatment of equals, is expanding the EIC for families without children.[25]

From 1981 until its repeal as part of the Tax Reform Act of 1986, the tax code had a second earner deduction. This type of provision can be justified, compared to general rate reductions, on efficiency grounds. Secondary earners (typically married women) have a larger labor supply response to wages than primary earners, although this differential has been narrowing in recent years. They also tend to face higher taxes when deciding whether to participate in the labor market than most other workers, because their

[25] Jane Gravelle and Jennifer Gravelle, "Horizontal Equity and Family Tax Treatment: The Orphan Child of Tax Policy," *National Tax Journal*, Vol. 59, September 2006, pp. 631-649. This issue is also discussed in CRS Report RL33755, *Federal Income Tax Treatment of the Family*, by Jane G. Gravelle.

tax rate begins at the rate on the last dollar of income earned by their spouse. There is also an equity argument for the second earner deduction because, compared to one-worker couples, two earner couples do not get the benefit of implicit, but untaxed, labor by the stay-at-home spouse. However, single individuals are taxed more heavily than married couples, and the deduction would increase that difference.

Other Tax Provisions, Including "Loopholes"

Some provisions that might be considered for base broadening might not fall in the tax expenditures list, either because they were not considered departures from a normal system or because they are unintended (one might say "loopholes.). A judgment is made in identifying tax expenditures about whether a provision is a departure from a "normal" tax system. There are several examples of base broadening provisions among the various tax reform proposals that do not fall into the tax expenditure list, such as disallowing deductions for moving expenses, capitalizing advertising costs, extending the amortization period for acquired intangibles, restricting interest deductions that reflect inflation, and disallowing deductions for alimony. These provisions are reminders that tax expenditure lists do not exhaust possibilities for base broadening, although there is a strong justification for deducting alimony payments.[26]

Also of interest are tax provisions not identified in the tax expenditure list, or subsumed in other provisions, that might be considered "loopholes." What distinguishes a provision as a loophole is not precise, but it often means either an unintended consequence or an apparent anomaly. For example, part of the revenue loss from deferral,

[26] When a couple divorces, they lose the income splitting benefits of marriage; deducting alimony (and taxing it to the recipient) helps to offset that loss. Divorce decrees are also based on the current tax treatment.

to the extent that it arises from profit shifting, would be considered a loophole. Other foreign related provisions may be viewed as loopholes (such as allowing foreign tax credits for payments that are essentially royalties on oil and mineral extraction). There may be more agreement on addressing a provision regarded as a loophole, than one that is a tax expenditure.

In addition to foreign provisions that address loopholes and raise $35 billion by 2024, the President's budget outline includes four provisions it specifically identifies as "loophole closers," which in total would raise about $10 billion in revenue by 2024. One provision is carried interest, which allows partnership interests in connection with the performance of personal services (such as hedge-fund managers) to receive substantial amounts of income taxed as capital gains.[27] (A carried interest provision that excludes real estate is also included in the Camp draft.) The second is to change the provision that allows those who have inherited IRAs, and who are not spouses, to receive distributions over their lifetimes. Children who inherit IRAs from parents often have significantly longer lives than the parent's original expected lifetime. In addition, retention of earnings in the IRA were intended to cover the parent's retirement, not the child's. A third provision would put an aggregate limit on the benefits of retirement plans, where defined benefit, defined contribution, and IRA plans have separate limits and where large accumulations from multiple plans are possible.

A final provision proposed stems from what might be viewed as an anomaly, or inconsistency, in the tax law's treatment. The Affordable Care Act included an additional 3.8% tax (equal to the Medicare tax on earnings) on capital income (such as capital gains,

[27] See CRS Report RS22689, *Taxation of Hedge Fund and Private Equity Managers*, by Donald J. Marples for further discussion.

dividends, and interest) for certain high income individuals, and also increased the existing Medicare tax on wage income for high income earners from 2.9% to 3.8%. However, the legislation excluded active (although not passive) income of partners and shareholders of Subchapter S firms, the only income exempt from both taxes. The administration's proposal would address this provision by treating this income as wage income in the case of professional service businesses. Another, or additional, approach would be to apply the 3.8% tax to active income of partners and Subchapter S shareholders.

The budget proposal also has a mixed category, "revenue raisers and other loopholes," which includes some other items that might be considered "loopholes," such as more generous depreciation for general aviation aircraft than for commercial aircraft (the "corporate jet" provision), inventory accounting methods, like-kind exchanges and some narrow technical provisions. Some of these provisions are in the tax expenditure list. There are also a number of estate tax provisions that might be considered loopholes.

Transitory Revenue Gains and Permanent Losses

A final issue to be considered that has consequences for the budget deficit is the use of provisions that have transitory revenue gains to pay for permanent loss provisions. In the case of a tax reform that is revenue neutral over the ten-year budget window, using such provisions will contribute to future deficits and debt. If a tax reform that gains revenue does so by relying on transitory revenue gains, the gains may be smaller or disappear outside the budget window.

We only have to look to the past to see the problems with timing effects. The Tax Reform Act of 1986 (TRA) is often referred to as revenue neutral, raising approximately $120 billion in corporate revenue and losing $120 billion in individual revenue, all over five years. Yet, an estimated $68 billion of corporate increases were temporary tax increases which did not persist. (The largest single provision was the uniform capitalization rules.) In addition, there were an estimated $43 billion of transitory individual tax increases which accrued largely to high-income individuals, which suggest that not only was TRA not revenue neutral, it was also not distributionally neutral.[28]

Current and recent tax proposals have contained a number of these timing provisions. Some of them are unavoidably inter-twined with tax reform provisions while others are not.

Some of these provisions that raise more revenue in the short run than in the long run include slower cost recovery provisions (reducing accelerated depreciation, capitalizing items currently expensed such as research and development, and advertising), and eliminating LIFO inventory accounting. Other provisions include phasing in revenue losing provisions, shifting traditional retirement savings from those with an up-front deduction with taxes on distribution to a Roth form with neither a deduction or taxation of benefits (an approach that gains in the near term and loses in the future), temporarily suspending indexing provisions, and a one-time tax on existing accumulated earnings abroad as a transition to a territorial tax.

One way of limiting the potentially damaging effect of timing on the true cost revenue consequences of a proposal is to require that the JCT also provide estimates on a

[28] Jane G. Gravelle, "Equity Effects of the Tax Reform Act of 1986, " *The Journal of Economic Perspectives*, Vol. 6, No. 1 (Winter, 1992), pp. 27-44.

steady state basis (that is, assuming a provision had long been in place) and judge revenue neutrality with that yardstick. This estimating approach is currently used in measuring tax expenditures.

Chairman MURRAY. Thank you.
Ms. FURCHTGOTT-ROTH.

STATEMENT OF DIANA FURCHTGOTT–ROTH, SENIOR FELLOW, MANHATTAN INSTITUTE FOR POLICY RESEARCH

Ms. FURCHTGOTT-ROTH. Thank you very much, and I believe I have some slides that you said were on a computer somewhere.

Ms. GRAVELLE. They are right behind you.

Ms. FURCHTGOTT-ROTH. So, thank you very much for inviting me to testify. I would like, with your permission, to submit my entire testimony for the record and then summarize it.

Chairman MURRAY. Without objection.

Ms. FURCHTGOTT-ROTH. Thank you. So, I would like to really agree with my co-witness here, John Buckley, that the lack of job opportunities is the major problem facing America. We have a labor force participation rate that is around 1978 levels, before the millions of women started moving into the workforce in the 1980s. And the way to fix this problem is with—through different types of tax reform, both at the bottom end, so fixing entitlements so people leaving unemployment do not face such high tax rates, and at the top end, because right now, for top earners and small businesses, State and Federal taxes are over 50 percent.

While taxes do matter—if they did not matter, America could double them and buy everybody a Prius, and in study after study, we find that taxes do have an effect. So, I do not want to go through all these studies. I mention some of them in my testimony. Professors Jonathan Gruber of MIT and Emmanuel Saez found that people in the upper end of the income distribution are highly responsive to tax rates. Edward Prescott got a Nobel Prize for showing the effects of taxes on different countries, including the United States. Professors William Gentry of Williams College and Glenn Hubbard of Columbia found that high taxes discourage entrepreneurship. Princeton University Professor Harvey Rosen—the list just goes on..

I would like to just focus on a couple of slides from Professors Christina and David Romer. As you know, Christina Romer was the Chairman of President Obama's Council of Economic Advisors and she concluded that a tax increase of one percent of GDP reduces output over the next three years by nearly three percent. And in Figure 1, you can see the estimated effect of an exogenous tax increase of one percent of GDP on GDP, and you can see that it is going down.

If you look at Figure 2, you can look at the effect of a tax increase of one percent on the inflation rate, and the Romers find that it makes inflation rise. The Romers took data from the 1940s to the present and did a very thorough effect of the increases of taxes on GDP.

And what is most startling and also related to the testimony of my friend John Buckley over here is the effect of a tax increase of one percent of GDP on the unemployment rate, and it shows that there is a—that the unemployment rate actually does decline under this.

But what they find is that with the increase in taxes, then GDP actually does go down, and the reason is that, as all of you know, when the government takes a dollar of your money, then it spends it less efficiently than you do.

Well, one objection that we have heard today is that reducing taxes leads to more inequality, and inequality decreases economic growth. There has been an International Monetary Fund study about this, and I think that a lot of this is misstated. The IMF study used pre-tax, pre-transfer income to measure inequality and many of these studies looking at inequality do not take into account the taxes paid by the top percent and the transfers that go to the bottom. So, for example, the top five percent paid 57 percent of all Federal individual income taxes in 2011, the latest year that data are available, and the top half of earners paid 97 percent of these taxes. So, the idea that inequality can be measured just looking at these issues is very—just does not make sense at all.

Well, mismeasurement of income is not the only flaw. Many changes occurred between 1980 and 2012. For example, as we can see in Table 1, women streamed into the workforce in the 1980s, and by 2012, most families in the top fifth of the income distribution had two earners. So—and in the middle of the distribution, the average was 1.3 earners. So, one thing we could do to increase income equality is to say that only one person in a family can work. One of the things that we are looking at when we observe more income inequality is more women in the workforce.

We have also had, over the past 20 or 30 years, more people living alone, and that has contributed to the perception of income inequality. So, if you look at Table 2, you can see that men and women living alone are more likely to be in the lowest income quintiles, and with increasing life expectancy and more divorces, we can see that there are more people living alone than there used to be and this also contributes to the perception of income inequality.

So, that is why it is important, when you look at income distribution, to look at it on a per person basis so that you can adjust for that, and also looking at consumption rather than income, because when you look at taxes and transfers, the taxes go from the top part of the income distribution and they go to transfers to the bottom.

So, in Table 3, where I have done that, you can see that the ratio of top to bottom income quintile spending is about the same. It is about 2.5 in 1987 and about 2.5 in 2012. It has not changed that much, and that is because even though looking by certain measures, income inequality, it seems as though the top—there is a lot more income inequality based on income measures that do not include taxes and do not include transfers. When you take out taxes and transfers, you have a very different situation.

So, the answer is to do tax reform and not be concerned about these measures of inequality, which are frequently incorrect, and thank you very much.

[The prepared statement of Ms. Furchtgott-Roth follows:]

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MANHATTAN INSTITUTE FOR POLICY RESEARCH

The Disadvantages of High Marginal Tax Rates

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Testimony before the Senate Budget Committee

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The Disadvantages of High Marginal Tax Rates

Chair Murray, Ranking Member Sessions, Members of the Senate Budget Committee, I am honored to be invited to testify before you today on the subject of the effects of high taxes on GDP growth

Currently I am a senior fellow and director of Economics21 at the Manhattan Institute for Policy Research. I am author or editor of several books, including *Women's Figures: An Illustrated Guide to the Economic Progress of Women in America*, (AEI Press, 2012), and *Overcoming Barriers to Entrepreneurship in the United States* (Rowman and Littlefield, 2008). From February 2003 until April 2005 I was chief economist at the U.S. Department of Labor.

The State of America's Economy

The Great Recession ended in June 2009, but, almost five years later, America still has not recovered. America's real gross domestic product grew by 1.9 percent in 2013, which was not enough to generate a sufficient number of jobs to raise nonfarm payroll employment to prerecession levels. The unemployment figures for March 2014, released on April 4, show an economy that is still sputtering along. The unemployment rate was 6.7 percent, and would have been higher if it were not for the labor force participation rate, which stood at 63.2 percent, equivalent to 1978 levels, before millions of women marched into the labor force in the 1980s.

The 6.7 percent overall unemployment rate masks other groups within the economy that are doing far worse. The African American unemployment rate is 12 percent. The teen unemployment rate is even higher, at 21 percent, and the African American teen unemployment rate is 36 percent.[1]

It is most troubling that although economic activity and jobs are the first priority for most Americans, America's tax policy has the effect of reducing economic activity. High taxes drive out both businesses and residents. High tax rates are not just confined to high-income earners. Low-income Americans face high tax rates when their incomes rise so that they phase out of different entitlement programs.

Disincentives of High Marginal Tax Rates

Taxes matter. If they did not matter, America could double them and buy everyone a Prius. Taxes affect individual and business decisions. States with high

[1] Bureau of Labor Statistics, "Employment Situation Report," April 4, 2014.

taxes, such as New York and California, see that their residents migrate to low-tax states, such as Texas and Florida. Countries with high tax rates find they are unsustainable because capital is global and shifts to more hospitable environments.

Many eminent economics professors have shown that lowering individual and corporate income taxes is the key to increasing incentives for Americans to work and for businesses to invest.

Professors Jonathan Gruber of MIT and Emmanuel Saez of the University of California (Berkeley) have found that people at the upper end of the income distribution are highly responsive to changes in tax rates, more so than those at the middle and lower end. Their research shows that lowering top tax rates in France would encourage upper-income earners to work more.[2]

Nobel laureate economist Edward Prescott found that in the 1970s the labor supply of France, Germany, and the United Kingdom exceeded that of the United States. In the 1990s, Americans worked much more than Europeans. Controlling for other factors, he discovered that when tax rates of European countries and the United States were comparable, their labor supplies were comparable as well. Prescott concluded that the difference in the marginal tax rate accounts for the predominance of the differences at points in time and the large change in relative labor supply over time.[3]

The tax system should be designed so that "when an individual works more and produces more output, the individual gets to consume a larger fraction of the increased output." Prescott finds that the elasticity of labor supply with respect to income is nearly three, and that "the large labor supply elasticity means that as populations age, promises of payments to the current and future old cannot be financed by increasing tax rates." He goes on to advocate for mandating that people save for retirement, arguing that such a requirement is "not a tax and does not reduce labor supply."

Similarly, Professors William Gentry of Williams College and Glenn Hubbard of Columbia University found that higher marginal tax rates discourage entrepreneurship.[4] Entrepreneurship involves risk-taking, and people are less willing to take risks when the rewards will be taxed away. A five-percentage-

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[2] Gruber, Jon and Emmanuel Saez, "The Elasticity of Taxable Income : Evidence and Implications," *Journal of Public Economics*, 2002.
[3] Prescott, Edward C., "Why Do Americans Work So Much More Than Europeans?," Federal Reserve Bank of Minneapolis, 2003.
[4] Gentry, William and Glenn Hubbard, "'Success Taxes,' Entrepreneurial Entry, and Innovation," National Bureau of Economic Research, 2005.

point reduction in tax progressivity would increase the entry rate into entrepreneurship by 25 percent. The increase in taxes in America in 1993, they found, lowered the probability of people becoming self-employed by 20 percent. The ensuing period of high growth and low unemployment could have been even better.

Princeton University professor Harvey Rosen wrote that on the basis of tax return data for sole proprietors from before and after the Tax Reform of 1986, the probability of purchasing capital assets goes down when a sole proprietor's marginal tax rate goes up. A five percentage point increase in marginal tax rates would reduce the proportion of entrepreneurs who make new capital investments by 10.4 percent, and decrease average investment expenditures by 9.9 percent.[5]

Professors Christina and David Romer, in a 2010 article in the *American Economic Review*, concluded that "a tax increase of 1 percent of GDP reduces output over the next three years by nearly three percent." Romer and Romer say the effect is highly statistically significant. Furthermore, the effect is larger and more significant than if they had examined all legislated tax changes rather than just the ones they determined to be legitimate. The effect on output was smaller after 1980 than prior. The maximum output decline from 1950-1980 was 4.3 percent after 7 quarters, compared to a 3.1 percent decline after 8 quarters in 1980-2007.[6]

The Romers believe that most studies examining the effect of taxes on output suffer from an omitted variable bias. Many tax changes do not occur through legislation, but through changes in the economy, such as increases in the overall level of income, stock prices, or inflation. In order to fix this bias, the authors examine the narrative rhetoric surrounding legislated tax changes to determine which tax changes should be used as legitimate observations to measure the effect on macroeconomics.

Using the narrative record for these tax changes, Romer and Romer categorized tax changes by their motivations. The authors estimate that a deficit-driven tax increase would actually increase GDP growth, but by no more than 2.5 percent. Romer and Romer also examine which components of GDP are affected most by tax increases. A tax increase of one percent of GDP decreased personal consumption expenditures by 2.55 percent, with expenditures on durables accounting for a large portion of the drop. Gross private domestic investment fell 11.2 percent in response to a one percent of GDP tax increase.

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[5] Carroll, Robert, Douglas Holtz-Eakin, Mark Rider, and Harvey S. Rosen, "Entrepreneurs, Income Taxes and Investment," *National Bureau of Economic Research*, 1998.
[6] Romer, Christina D. and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based On A New Measure of Fiscal Shocks," *American Economic Review*, 2010.

Writing in 2006, Harvard Professor Martin Feldstein concluded that a typical wage earner ($40,000 a year) pays a combined income and payroll tax rate of 45 percent, with sales taxes pushing the rate above 50 percent.[7]

Using the NBER Taxsim calculator, Feldstein simulated tax reform that would raise all individual marginal tax rates (except capital gains) by one percent. The resulting static estimate showed revenue increased by $7.5 billion. Using modest assumptions for a behavioral response (compensated elasticity of .4 and an income effect of .15) Feldstein found that the aforementioned tax reform would decrease taxable income by $6.6 billion and only increase tax revenue by $4.6 billion. Deadweight loss from the tax reform is calculated to be $3.5 billion. "This implies that financing additional government spending by an across the board rise in all marginal tax rates would make the cost per dollar of government spending equal to $1.76."

Feldstein concluded that all government estimates of tax reform should take into account that actual revenue was only 57 percent of static revenue, and that deadweight loss was 75 cents per dollar of revenue.

Taxation and Inequality

One objection to reducing taxes is that lower taxes lead to more inequality, and inequality decreases economic growth. A recent IMF report concluded that inequality decreases economic growth, and suggested raising taxes to counteract inequality.[8]

The idea that inequality limits a country's economic growth is on the verge of becoming conventional wisdom. But, despite the latest International Monetary Fund report, no one has proved the negative macroeconomic effects of inequality.

Entitled "Fiscal Policy and Income Inequality," the IMF report states that "there is growing evidence that high income inequality can be detrimental to achieving macroeconomic stability and growth."

Here are three common errors in the attempt to prove that inequality slows growth.

Error 1: Use of Pre-Tax, Pre-Transfer Income to Measure Inequality. Throughout the report, the IMF uses the concept of "market income" to measure

[7] Feldstein, Martin, "The Effect of Taxes on Efficiency and Growth," National Bureau of Economic Research, March 2006.

[8] Sanjeev Gupta et al., "Fiscal Policy and Income Inequality," International Monetary Fund, January 2014.

inequality. Market income is defined as income before taxes are paid to the government, and before transfers from the government to low-income individuals.

This concept of income is far removed from reality. The top five percent paid 57 percent of all federal individual income taxes in 2011, the latest year data are available. The top half of earners paid 97 percent of these taxes. The bottom half of earners paid 3 percent. They received back a substantial share of the 97 percent paid by the top half for programs including Medicaid, food stamps, the earned income tax credit, housing vouchers, and unemployment insurance.

Data from the non-partisan Tax Foundation show that families in the bottom fifth of income earners receive over $5 in government sending for every $1 they pay in combined federal, state, and local taxes. Families in the middle fifth of incomes receive $1.50 for each dollar they pay and those in the top fifth receive only 30 cents for every dollar they pay.[9]

The idea that inequality can be measured by income irrespective of taxes and transfers makes little sense.

Yet the IMF report states that "the share of market income captured by the richest 10 percent surged from around 30 percent in 1980 to 48 percent by 2012, while the share of the richest 1 percent increased from 8 percent to 19 percent."

Mismeasurement of income is not the only flaw: many changes occurred between 1980 and 2012. The Tax Reform Act of 1986 lowered tax rates on individuals relative to corporations, and so more businesses filed as individuals. This meant that individuals appeared to earn more after 1986, even though the assets were just transferred from the corporate side to the individual side of the tax code.

Women streamed into the workforce in the 1980s. By 2012, most families in the top fifth of the income distribution had two earners, not one. These data are shown in Table 1.

Census data in Table 2 show that men and women living alone are most likely to be in the lowest-income quintiles. Some 46 percent of women living alone were in the bottom quintile in 2012, and 72 percent of women living alone were in the bottom two quintiles. Only 3 percent of women living alone were in the top

[9] Prante, Gerald and Scott Hodge, "The Distribution of Tax and Spending Policies in the United States," Tax Foundation, November 2013.

quintile. The trends are similar for men. Some 60 percent of men living alone were in the bottom two quintiles, and only 7 percent were in the top quintile.

In contrast, married couples are more likely to be in the top quintiles. Some 32 percent of married couples were in the top quintile, and 58 percent were in the top two quintiles.

Between 1980 and 2012, the share of taxes paid by top earners increased, and the share paid by low-income earners declined. At the same time, transfers to low-income Americans went up.

Cornell University economists Richard Burkhauser and Philip Armour, together with Jeff Larrimore of the Joint Committee on Taxation, accounted for these factors in a paper published last year by the National Bureau of Economic Research. Rather than an increase in inequality over time, they concluded that the share of income of the top five percent declined between 1989 and 2007.[10]

I calculate spending on a per-person basis in order to produce comparable measures. These data are converted into 2012 dollars using the Bureau of Labor Statistics Consumer Price Index for all urban centers. It is important to compute spending on a per-person basis because the number of persons in a household varies by quintile. For a given level of income, a family is better off with fewer people.

Table 3 shows that the average annual spending for a household in the lowest quintile in 2012 was $13,032 per person. In contrast, the average spending for a household in the top quintile was $32,054 per person.

On a per-person basis, the new Department of Labor numbers show that in 2012, households in the top fifth of the income distribution spent 2.5 times the amount spent by the bottom quintile, as can be seen in Table 3. That was the same as 25 years ago. There is no increase in inequality. In addition, the overall level of inequality is remarkably small. A person moving from the bottom quintile to the top quintile can expect to increase spending by only 146 percent.

Error 2: More Inequality Leads to Lower Mobility. The result that more inequality leads to less economic mobility, cited in the IMF report, comes from a graph by Princeton University professor Alan Krueger, former chair of President Obama's Council of Economic Advisers. The graph, called "The Great Gatsby Curve," purported to show that countries with more inequality had lower

[10] Armour, Philip, Richard V. Burkhauser, and Jeff Larrimore, "Levels and Trends in United States Income and Its Distribution A Crosswalk from Market Income Towards a Comprehensive Haig-Simons Income Approach," National Bureau of Economic Research, 2013.

intergenerational economic mobility. The logical conclusion of such a graph was that inequality is actually preventing people from getting ahead.

Just one problem: as with Error 1, more sophisticated data lead to different results. In "The Collapse of the Great Gatsby Curve," my Manhattan Institute colleague Scott Winship showed that the Great Gatsby curve reversed itself when economists used better measures of inequality, the Luxembourg Income Study inequality estimates.[11] Data from University of Ottawa professor Miles Corak on the United States, Canada, and Sweden suggest that more inequality is associated with higher mobility, not less mobility.[12]

Winship's findings echo those of Harvard University economist Raj Chetty, who found little association between the share of income of the top one percent and mobility, either in the United States or between different countries.[13]

Error 3: Tax Increases Lead to Higher Economic Growth. The IMF report suggests many ways that taxes can be raised on upper-income individuals in order to increase economic growth. The theory is that the poor spend a larger share of their income than the rich, so raising taxes on the rich and redistributing these funds to the poor raises growth.

However, spending by upper-income consumers creates local employment, at least in the United States. Labor Department data show that the top fifth of income earners was responsible for 52 percent of all spending on personal household services, and 56 percent of spending on fees and admission to entertainment.[14] Services and entertainment are local businesses that employ low-wage workers. Taxing top earners will result in lower spending on these categories, and less domestic employment.

In contrast, the lowest fifth of income earners spend more on apparel, footwear, and nondurables, which are more likely to be imported. A substantial percentage of goods purchased at big box stores, where low-income individuals tend to shop, are made overseas.

Conclusion

[11] Winship, Scott and Donald Schneider, "The Collapse of the Great Gatsby Curve," Economics21 at the Manhattan Institute. February 3, 2014.
[12] Corak, Miles, Matthew J. Lindquist, and Bhashkar Mazumder, "A Comparison of Upward and Downward Intergenerational Mobility in Canada, Sweden and the United States," March, 2014.
[13] Chetty, Jar, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez, "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States," National Bureau of Economic Research. 2014.
[14] Bureau of Labor Statistics, "2012 Consumer Expenditure Survey," September, 2013.

Many people try to justify increases in taxation by saying that they will reduce inequality, and hence increase economic growth. Academic studies on taxation and GDP growth show that this is not true. Much of the concern about inequality is caused by problems of measurement and changes in demographic patterns over the past quarter-century. Government data on spending patterns show remarkable stability over the past 25 years and, if anything, a narrowing rather than an expansion of inequality.

If transfers of income from one group to another succeeded in creating economic growth, the fastest-growing countries would be those with the highest top tax rates. Empirical observation shows that the reverse is true. America needs economic growth and jobs, and a simpler, lower tax system is the best way to achieve it.

Tables

Table 1: 2012 Consumer Units by Income Quintile	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Number of persons in consumer unit	1.7	2.2	2.5	2.8	3.1
Earners	0.5	0.9	1.3	1.7	2
Homeowner	39	54	64	75	89
With mortgage	11	23	37	54	68
Without mortgage	28	31	27	21	11
Renter	61	46	36	25	11

Source: U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey, September 2013.

Table 2: Percentage of Households within Each Income Quintile by Type of Household, 2012

Type of Household	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent	Top 5 percent
Family households	12.2	17.7	20.5	23.5	26.1	6.6
Married-couple families	7.0	14.8	19.9	26.3	32.1	8.4
Male householder, nsp	16.9	23.3	25.8	19.6	14.4	2.7
Female householder, nsp	30.2	26.6	20.9	14.5	7.8	1.3
Nonfamily households	35.2	24.5	19.0	13.1	8.2	1.9
Male living alone	34.3	26.0	20.6	12.4	6.8	1.7
Female living alone	45.7	26.0	16.5	8.5	3.4	0.7

Note: nsp denotes no spouse present.

Source: U.S. Census Bureau, Annual Social and Economic Supplement, 2013 (Table HINC-05. Percent Distribution of Households, by Selected Characteristics within Income Quintile and Top 5 Percent in 2012).

Table 3: Annual Expenditures by Income Quintile 2012

Real Expenditure per Person by Income Quintile, Selected Years 1987-2012, 2012 Dollars

	1987	1992	1997	2002	2007	2012
Lowest 20 percent	11,626	11,495	12,722	14,309	13,334	13,032
Second 20 percent	14,410	14,325	14,652	15,744	15,678	14,833
Middle 20 percent	16,874	17,395	17,994	18,827	18,801	17,202
Fourth 20 percent	20,631	20,368	21,135	22,986	21,873	21,421
Top 20 percent	29,350	30,608	30,825	31,586	33,479	32,054
5:1 ratio	2.52	2.66	2.42	2.21	2.51	2.46

Source: Manhattan Institute Calculations, and U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey 1987-2012*.

Chairman MURRAY. Thank you to all of you.

Let me start with a question about House Ways and Means Chairman Dave Camp's tax reform plan. That plan attempts to pay for lower tax rates by closing loopholes and reducing tax expenditures. Chairman Camp even imposes a new excise tax on big banks and places a surtax on the income of wealthy individuals. All told, his plan raises more than $4.2 trillion in new revenue to pay for lower tax rates. And he tried to make all these changes without increasing or decreasing revenues or shifting tax burdens among taxpayers at different income levels.

Mr. Buckley, you noted that despite all of his efforts, Chairman Camp's plan would still lead to both bigger deficits and tax cuts for the wealthy beyond the ten-year budget window, and let me just say again, this is an approach to tax reform we cannot afford, given our current budget window. But, can you explain to us why Chairman Camp's plan would lead to bigger deficits down the road.

Mr. BUCKLEY. It is fairly simple. If you just look at the revenue table of Chairman Camp's bill and look at what I call permanent changes in the law—changes other than timing changes—he has well over a trillion dollars in permanent tax reductions. That is offset by a series of pure one-time revenue increases—the tax on the unrepatriated profits of U.S. multinationals, release of reserves from repeal of LIFO accounting methods. Those are purely one-time revenue increases. They are in the range of a couple hundred billion dollars.

He also, you know, forces many into Roth IRAs and claims that to be a revenue increase. It is not a revenue increase. It is a tax benefit disguised as a revenue increase in the budget window.

And then, finally, he has a whole series of pure timing changes—repeal of accelerated depreciation, repeal of expense treatment for R&D, you could go on, repeal of expense treatment for advertising expenses. Those are all pure timing changes and they will disappear to a very large extent—I have seen as much as two-thirds disappear outside the budget window.

So, it is fairly simple math. He results in growing deficits outside the ten-year window. Also, all of those one-time and temporary tax increases are taken into account for distributional purposes. During the ten-year window, these are changes affecting businesses. The way the Joint

Committee on Taxation distributes tax burden, they will flow almost all to upper-income taxpayers. That is what enables his distributional table to look distributionally neutral in the ten-year budget window.

Chairman MURRAY. But it is in the out-years that the wealthy benefit.

Mr. BUCKLEY. Those revenues disappear and the upper incomes will get a substantial net tax cut, and you only have to look at the Joint Committee distributional tables to find that people making more than a million dollars get a significant tax reduction in the last year of his ten-year budget window.

Chairman MURRAY. Okay. Dr. Gravelle, you recently wrote that in 2008, U.S. companies reported profits in Bermuda, a tax haven with no corporate income tax, that exceeded the size of that country's GDP by almost 650 percent. Many of us are aware, of course, of the infamous five-story building in the Cayman Islands that houses something like 18,000 companies. But, no doubt, really, our government is losing billions of dollars every year to offshore tax abuse. Let us be clear. Those schemes give big companies an unfair business advantage over companies that only operate domestically, and I think that is important to remember, as well.

I talked in my opening statement about the bill that I introduced, the 21st Century Worker Tax Cut Act. My bill actually borrows from Chairman Camp's to combat profit shifting and tax haven abuse, uses those savings to invest in targeted tax cuts for childless workers and two-earner families.

First of all, Dr. Gravelle, I wanted to get your perspective on the magnitude of offshore profit shifting and tax avoidance.

Ms. GRAVELLE. Actually, I think my 650 percent number has grown. It is really more like over a thousand percent by now, probably.

Chairman MURRAY. Really?

Ms. GRAVELLE. I need to update my paper. So, the estimates that I look at would say that I think that the profit shifting, sort of the best estimates, amount to probably about $70 billion in fiscal year 2015. That is profit shifting, not revenue we could raise from it. But it is growing. It seems to be growing all the time. But, you know, if you put out a 35 percent rate, you could get a substantial revenue gain from that, and I think there are certainly ways to collect that money effectively. A lot of countries tax currently income from countries that have low taxes. That is very common. But we do not do any of that.

Chairman MURRAY. Right. And, Mr. Buckley, would you agree that providing targeted tax relief to struggling workers is a better use of taxpayers' resources than allowing these tax havens to continue unabated?

Mr. BUCKLEY. I absolutely agree. I think, of the barriers to employment faced by two-worker married couples are significant when they have children, and so that anything that is done to address those barriers, make it easier for them to get quality day care, to afford the cost of that, is positive.

I am deeply troubled when you see tax reform plans like Dave Camp's that repeal the Dependent Care Credit and that will result in a net tax increase on many of the two-earner spouses that you are concerned about. We should make it easier for them to enter and remain in the workforce.

Chairman MURRAY. And we want people to work. I know my counterpart here has talked about that before. But, it is a disincentive to the second worker when they start working and they have to pay for child care and clothes and transportation and are not getting that tax credit, correct?

Mr. BUCKLEY. That is correct.

Chairman MURRAY. Okay. My time is out. I will yield to Senator Sessions, and thank you all very much.

Senator SESSIONS. Thank you.

Ms. Gravelle, you indicated you discussed new taxes, that they would be used to pay down the debt, or reduce the annual deficits, maybe more correctly. If taxes were to be increased, is that what you would propose should be done with the money?

Ms. GRAVELLE. Well, I cannot recommend a policy. CRS never makes recommendations.

[Laughter.]

Ms. GRAVELLE. Just basically, what I wanted to say in my statement is—and, in fact, I would go on to say I have written a paper on the long-run debt outlook where it seems to me, if you put all the numbers together, it is very hard to deal with that long-run debt without relying on some increase in taxes. But, mainly, what I was saying—

Senator SESSIONS. But it does not improve the long-term debt if you increase taxes to fund new spending. That is the point.

Mr. Buckley, thank you for your comments. I would just say that—well, CBO tells us that the marginal rate tax increases do reduce economic growth. I think most people would agree. We do have to have a certain amount of money to run this government. There is just no doubt about it. But, I think that it is clear that a marginal rate increase on the private sector weakens the private sector and increases the Washington sector and that is pretty clear.

I have got just a minute and I will let you respond. I see you would like to.

Mr. BUCKLEY. Well, I think you should look, carefully look at the economic models that predict economic growth from tax reform. They are what I call supply side models. Many of them assume—if you could look at the Joint Committee analysis of Dave Camp's bill, one of the models used that shows big increases in growth assumes that the two major problems faced by this country are already solved. They assume that the Federal budget is sustainable, no long-term problems, and there is no unemployment in this country. They are modeling the effects—

Senator SESSIONS. Well, I doubt that they say there is no unemployment—

Mr. BUCKLEY. Well, that is what the model assumes.

Senator SESSIONS. Do you mean zero unemployment?

Mr. BUCKLEY. I mean zero unemployment.

Senator SESSIONS. That would be unrealistic, I would agree.

Mr. BUCKLEY. It is unrealistic, but that is where the projections of economic growth come from.

Senator SESSIONS. Well, Ms. Furchtgott-Roth, you refer to studies. There are a number of studies that have shown that in Europe, IMF and some sophisticated analytical studies by professionals who say that in reducing the deficits they were facing, that the nation benefits more from reducing government spending than it does from increasing taxes to reduce the deficit. Is that your understanding of the state of the economic analysis?

Ms. FURCHTGOTT-ROTH. I think it is important to reduce the deficits by cutting spending. Increasing taxes to reduce the deficit, especially in the system of government that we have right now, seems to result in higher taxes and higher spending, and I really agree that it is a great problem that companies are putting profits abroad and one reason for this is that we have a much higher tax rate than other countries around the world and we need to lower our corporate tax rates to average OECD levels and start taxing not on a worldwide but on a territorial basis. OECD averages about 24 percent. So, it is no surprise that since our rate, Federal and

State, is 39 percent, our companies are keeping profits offshore rather than bringing them back where they would be taxed.

Also, I am surprised that we have not had any discussions of cuts in spending. We are just assuming that spending cannot be cut, and there are a lot more efficient ways of dealing with the spending that we have. For example, we talked about the Highway Trust Fund. If that were devolved to the States, for example, instead of sending all the gas tax to Washington, then sending it back to the States, if we let the States keep their gas tax revenues and spend it themselves on what highway projects they wanted without having to have the required 15 percent for mass transit, which is not much good in places like Nebraska, where they do not use mass transit, States could make much more efficient uses of these revenues and they would not be hamstrung by project labor agreements and other kinds of Federal rules on this highway construction and that could go a lot further.

There are many ways we could be cutting spending, such as the $12 to $15 billion we spend every year making electricity more expensive, and I think we really need some discussion of that, not just assume we need to raise taxes to reduce the deficit. We also need to be looking at entitlements out in the long run, how we can trim those down, because those are the major source of government spending.

Senator SESSIONS. Well, I think that is exactly right. It is the equivalent of a tax to pass an environmental regulation or a global warming regulation that raises the price of everybody's energy for people alike. It is the equivalent of a tax, in my opinion. It is equivalent to the government taxing those same people and then paying for the CO2 reduction ideas.

Ms. FURCHTGOTT-ROTH. Right. And what is really—

Senator SESSIONS. Economic sense, it is not much difference, is it?

Ms. FURCHTGOTT-ROTH. Yes—

Senator SESSIONS. I would just say this—

Ms. FURCHTGOTT-ROTH. —and what is really interesting is that when extended unemployment benefits ended in December, between December and March, the labor force participation rate went up by four-tenths of a percentage point. That is the fastest increase since 2010. And that was because, in essence, the effective tax rate for working at lower income levels had disappeared when people were not losing that extra unemployment benefit by going out to work.

Senator SESSIONS. Could I ask you this, Ms. Furchtgott-Roth. University of Chicago Professor Casey Mulligan has said that the penalty on working, that, in effect, for low-income workers, can be much higher than those for upper-income earners because of the phase-out of different benefits they are receiving from the government.

Ms. FURCHTGOTT-ROTH. Right. He had speculated about 40 to 60 percent, and that is why we really need to work on trimming back these entitlements and making the phase-outs different. That is why it is particularly interesting that when extended unemployment benefits ended in December, we saw this movement of people into the workforce, and also, the percent of long-term unemployed went down from 37 percent—the long-term unemployed, that is 26 weeks or longer—went from 37 percent of the unemployed to 35.8, just last month.

Senator SESSIONS. Thank you, Madam Chair. I would just say that the argument over taxes and economic growth is complex, but in 1981, the Reagan plan took the marginal tax rate from 70 percent to 50 percent, and I think that was a positive step for the economy. The economy did recover. And then in 1986, it was taken to 28 percent. Perhaps that was lower than the country could sustain, Mr. Buckley, I do not know. But, when it went back up—it went up, what, to 39—and you still ended up with far less marginal tax rate imposition on the private economy than you had in 1980. And, I think all of that did help create growth and prosperity.

All of us are guilty. Something changes in policy and we run out and say the next month, whatever good or bad happened was a result of that event. And it may just be a smaller event in the long-term shape of things that helped shape it.

So, anyway, these are important issues. Thank you for your leadership, and this is a valuable discussion.

Chairman MURRAY. Thank you.

Senator WHITEHOUSE.

Senator WHITEHOUSE. Thank you, Chairman.

Let me get a sense—I think the Chairman used one of the numbers that I want to use already, but I would like to hear it from the witnesses. The revenue that comes into the Federal Government has two ways of being spent. One is it can be spent through the budget and through appropriations, and you could describe that as going out the front door, and everybody gets a look at it when it is on the porch because the appropriations process looks on a regular basis at all of that.

And the other is by tweaking the tax code to give people advantages and deductions and so forth. You can send revenues that would otherwise be collected for spending in the traditional sense, that would otherwise go out the front door, you can send them out the back door, and that can also be very beneficial to special interests, and, indeed, there are huge lobbying professions that are designed to make sure that industries maximize their benefit of that expenditure out the back door.

In terms of the scale of how much money is lost through tax avoidance, tax deductions, tax specialized rates, things like that, compared to what gets actually spent, how would you compare the two, generally? And on the corporate side and on the individual side separately, if you would.

Mr. BUCKLEY. Senator, I think you have to divide what are called tax expenditures into different pockets here.

Senator WHITEHOUSE. Let me put it this way. Are they called tax expenditures for a reason?

Mr. BUCKLEY. They are called tax expenditures for a reason.

Senator WHITEHOUSE. And what is that reason?

Mr. BUCKLEY. That they are spending through the tax system.

Senator WHITEHOUSE. Okay.

Mr. BUCKLEY. But, many of the tax expenditures are items like the Dependent Care Credit, per child credit, charitable deductions, home mortgage interest deductions, State and local tax deductions—

Senator WHITEHOUSE. Yes.

Mr. BUCKLEY. Those type of tax expenditures on the individual side are somewhere between 80 and 90 percent of total tax expenditures. So, there clearly is a lot of special interest things here.

Senator WHITEHOUSE. Particularly on the corporate side.

Mr. BUCKLEY. Particularly on the corporate side—on the business side—

Senator WHITEHOUSE. Yes.

Mr. BUCKLEY. Not just corporations, but businesses. But, if you look at the overall numbers that are being tossed around, the bulk of the tax expenditures are things that you really could not accomplish through a spending program. They are called tax expenditures, but you cannot replicate the charitable deduction through a spending program. I do not think the Congress would want to replicate—

Senator WHITEHOUSE. My point is, the scale of it, because I think most people think, when they think of Federal spending, that what we see through the appropriations process is a very, very big number—

Mr. BUCKLEY. Right.

Senator WHITEHOUSE. and whatever happens with the tax code is sort of a lesser thing. And, in fact, on the corporate side, it is 70 to 80 percent of all revenues that actually goes—

Ms. GRAVELLE. No, it is smaller than that.

Mr. BUCKLEY. No.

Senator WHITEHOUSE. Smaller than that?

Mr. BUCKLEY. Yes, very much.

Ms. GRAVELLE. It is smaller. It is about—I think it is—it seems to me it was about 40 percent—35 percent, 40 percent. The biggest tax expenditure, I think, is comprised partly of what I think is a loophole, and that is the revenue loss on the deferral of foreign source income.

Mr. BUCKLEY. Correct.

Ms. GRAVELLE. Some of that might be real activity, but I think a large part of it is these profits that have been shifted through various schemes to, you know, to the Cayman Islands or to Bermuda or—

Senator WHITEHOUSE. And some of that, we do not see at all because the income is hidden, so you never know that—

Ms. GRAVELLE. We are capable of collecting that if we want to.

Senator WHITEHOUSE. If we want to, yes.

Ms. GRAVELLE. But, it is the biggest tax expenditure and it is worth—I do it in percentage points of the rate—it is worth about three percentage points. The one that is talked about all the time, the next biggest one, is worth about 2.2 percentage points. So, those are the two biggest tax expenditures, and accelerated depreciation only accidentally became a tax expenditure because we set the rates where they should be in present value terms in 1986, but we set them with the wrong expectation of inflation. That is what happened there.

Ms. FURCHTGOTT-ROTH. But, that is on the corporate side. If you look at the individual side, the mortgage interest deduction, the deduction for health care expenses on the employer side, the deduction for State and local taxes, I mean, all these really are the major tax expenditures and they are very difficult to get rid of for political purposes.

Senator WHITEHOUSE. Ms. Furchtgott-Roth, while I have got you here, I think the last time we saw each other was in the Environment and Public Works Committee, and we do not often have witnesses who show up in both the Budget Committee and the Environment and Public Works Committee, and so I have looked at some of the areas where you have testified, and you have testified on climate change in the Environment and Public Works Committee.

You have testified on the impact of Obamacare on America's health insurance in the House Energy and Commerce Subcommittee.

You have testified on sequestration in the House Education and Workforce Subcommittee.

You have testified on energy in the House Energy and Commerce Subcommittee.

You have testified on Bureau of Labor Statistics employment data on the House Oversight and Government Reform Committee.

You have testified on the individual mandate in the Affordable Care Act in the House Ways and Means Subcommittee.

You have testified on national ocean policy in the House Natural Resources Subcommittee.

You have testified on a balanced budget amendment in the Senate Judiciary Subcommittee, which actually makes three of my committees that you have testified on.

You have testified on something called Obama's hidden marriage penalty in the House Oversight and Government Reform Subcommittee.

You have testified on the future of union transparency on the House Education and Workforce Subcommittee.

You have testified in the Joint Economic Committee on the gender pay gap for women.

You have testified in the House Natural Resources Subcommittee on American Samoa fisheries subsidies.

You have testified in my Senate Judiciary Subcommittee on medical bankruptcy reform.

You have testified on the nomination of John Roberts to be an Associate Justice of the Supreme Court.

You have testified in the confirmation hearings in Senate Banking, Housing, and Urban Affairs.

You have testified on estate and capital gains tax levies on farmers.

And, you have testified on being compensated for overtime by taking time off rather than receiving additional pay.

Ms. FURCHTGOTT-ROTH. Oh dear. You are showing everybody how old I am.

Senator WHITEHOUSE. And, fair to say that in every single one of those testimonies, you were the Republican witness?

Ms. FURCHTGOTT-ROTH. Absolutely. I worked also for three Republican White Houses and I have written five books, the latest being Regulating to Disaster: How Green Jobs Policies are Damaging America's Economy.

Senator WHITEHOUSE. Is there any area where you will not testify?

Ms. FURCHTGOTT-ROTH. Yes. Yes. I do not testify on anything legal. I only testify on economics because I am an economist. I am the former Chief Economist of the U.S. Department of Labor, and labor issues overlap many of these things that you mentioned. For example, in my testimony on behalf of John Roberts, I was testifying on the theory of comparable worth, not on his qualifications to be a Justice. But, yes, I will testify on—

Senator WHITEHOUSE. We will see you in the Judiciary Committee again and we can see whether we are not talking about legal issues.

Ms. FURCHTGOTT-ROTH. Only if it is an economic issue. For example, I do not testify on things like banking or telecom because I do not have expertise in those areas and they do not really overlap with labor economics.

Senator WHITEHOUSE. Very well.

Thank you, Chairman.

Chairman MURRAY. Thank you. I want to thank all three of our witnesses for participating today, all of our colleagues that are here.

As a reminder to my colleagues, additional statements or questions for the witnesses are due by 6:00 p.m. today, to be submitted to the Office of Chief Clerk in Room 624.

With that, thank you again for all of you participating.

With that, I call the hearing to a close.

[Whereupon, at 11:38 a.m., the committee was adjourned.]

INVESTING IN WHAT WORKS: EXPLORING SOCIAL IMPACT BONDS

THURSDAY, MAY 1, 2014

UNITED STATES SENATE,
COMMITTEE ON THE BUDGET AND THE GOVERNMENT
PERFORMANCE TASK FORCE,
Washington, D.C.

The committee met, pursuant to notice, at 10:01 a.m., in Room SD–608, Dirksen Senate Office Building, Hon. Mark Warner, chairman of the Task Force, presiding.

Present: Senators Warner, Whitehouse, and Ayotte.

Also Present: Senator King.

OPENING STATEMENT OF CHAIRMAN WARNER

Chairman WARNER. Good morning, everyone, and welcome to today's hearing of the Budget Committee's Government Performance Task Force on a very interesting subject, "Investing in What Works: Exploring Social Impact Bonds."

I mentioned to the panel this morning, we are going to go ahead and get started. I know Senator Ayotte is going to join us in a few minutes. Senator Whitehouse is on the committee, as well—actually, whose idea for the hearing it was—is in a Judiciary Committee markup and will be here. So, I particularly mention to our guest from the U.K., please do not be offended if people float in and out. We often have very short attention spans, but when we are here, we are going to be very focused on what you say.

I want to, before we get to our subject, just do a quick review for staff and others who have followed this Task Force. At our last Task Force hearing, we discussed the need to expand financial transparency, and I am happy to report that since that last hearing, we have actually made some real progress. This month, both the Senate and the House passed our bipartisan Digital Accountability and Transparency Act, or DATA Act, and I would like to thank all the members of the Task Force for their support of the DATA Act, and I do not think he is going to be with us this morning, but particularly Senator Portman, another member of the committee who was my lead cosponsor on this bill. We are soon going to get, actually, a Presidential signing ceremony.

Recognizing that these are sometimes a bit obscure topics that we deal with here, but we all talk about how we can try to bring better accountability to the government, the DATA Act will actually improve transparency and accountability by requiring that agencies post all Federal spending data on a single easily accessible website. This bill will also require agencies to develop financial data standards so that spending data is reported to the public in a consistent and accurate way.

I am not sure, Mr. Fisher, whether in the U.K. it is the same, but we have, for example, in the Department of Defense, 200 different financial accounting systems. It is ludicrous, trying to push the bureaucracy to get a common standard, common data.

Darrell Issa from the House, who was a lead sponsor, said if—and, again, apologies to our guest from the U.K.—but if you were in baseball and every baseball team had a different way of measuring what a hit was or what an error was or what a person's averages were, you would be very hard pressed to determine who were the good players and who were not.

This DATA bill, which has been called the most significant piece of government transparency work since the Freedom of Information Act, I think is going to really give us a tool.

What we also do in this bill is reduce reporting burdens for the recipients of Federal funds, because we have clearly learned—and Senator Ayotte and I are working together on legislation in this area—we ask agencies to report time and again in different forms. If we can cut back on that, we can save resources. Actually, Senator Ayotte and I have legislation to try to eliminate some of the duplicative reporting requirements.

Probably not all members of the public would realize that we do an annual Dog and Cat Fur Violations Report, which I know the public is hanging on each day waiting for that Cat and Dog Fur Report that comes out. If there was ever a case of a meaningless report—

Senator AYOTTE. Yes, it is riveting. They are waiting.

[Laughter.]

Chairman WARNER. And it is costing and costing. So, we are actually trying to eliminate some of that. This is what, really, this Task Force was set up for back in 2009, to say, how can we drive down, in tight fiscal times, better performance.

And we have passed the Government Performance and Results Modernization Act, again, an obscure piece of legislation that most people do not know, but it actually requires agencies for the first time to identify not only their best performing programs, but their least performing programs, which is always hard to get anyone in government to acknowledge that certain things may not be working.

We have also looked at Federal customer service reporting, and again, as I mentioned, with Senator Ayotte, we are looking at getting rid of some of the duplicative reports. A lot of time and money is spent on reports that are not very useful.

Today, we are going to go into a different area that is really very, very brand new. It was suggested, as I mentioned, by Senator Whitehouse. We are here to learn more about social impact bonds, a new approach to financing government services designed to ensure government only pays for what works.

Frankly, the Federal Government does a poor job of understanding what works. Federal agencies often talk a good game about measuring results and delivering value for the taxpayers, but the truth is that evaluating what works and what does not really work is really something the Federal Government does not do very well. Maybe we can learn from others about this. It is done better elsewhere. But part of that was because there is lack of common data standards. Part of that is because there is really not a lot of transparency. But this idea of social impact bonds is something that may be a new tool. This is especially true when linking resources to outcomes, something that a lot of us talk about, but, again, we do not have very good standards.

The Federal Government has a practice of what is called base budgeting, where discussion and analysis of resource allocation is framed by the prior year's funding level rather than the outcomes that those resources achieved. We simply start with that baseline and build from there rather than looking back and saying, did we actually get value for our dollar in terms of what was spent in the preceding year?

Now, we all know that we are going to continue to be faced with tight budget times. In these times, we need to make sure that we are allocating limited resources to the programs that actually deliver results. That is why the recent development of social impact bonds is of importance.

Social impact bonds are not really bonds, but they are probably better described as a new type of performance-based contracts. Governments use social impact bonds to finance social service projects with private and philanthropic capital and only repay this investment after an independent evaluation confirms the project has achieved the goals. The key here is that government does not pay if the project fails to deliver.

Initially pioneered in the U.K., social impact bonds—and I think this was in 2010, Mr. Fisher, when it started—social impact bonds have expanded to several States in the United States, including Utah and New York, targeting such issues as juvenile recidivism and early childhood education.

The appeal of this approach is growing, in large measure because it achieves several important policy goals. It ensures accountability, again, making sure that we actually pay for what works. It supports evidence-based investments. The tool promotes use of high-quality program evaluation to inform investment decisions and add to the information based upon what works. It incentivizes public-private partnerships. Social impact bonds create a mechanism to leverage private and philanthropic capital to fund programs that lack sufficient funding. And, finally, it results in savings. This has the potential to yield long-term savings from reductions in social problems that rely heavily on government services.

Now, this is a new idea and I think we are going to have probably a spirited discussion on the panel, where some are advocates, some question this tool, and I think coming from, at least me, coming at this relatively new, I am excited by the concept, but I am also concerned about if we were to embark on this on a broader basis, what we should be careful about. So, I am again looking forward to the discussions that will happen.

So, let me very quickly introduce the panel and then call on my friend, Senator Ayotte, for her opening comments, and we will get right to the testimony.

First, we welcome Mr. Jeffrey Liebman, the Malcolm Wiener Professor of Public Policy at the Harvard Law—Harvard Kennedy

School. Obviously, it would not be at the Harvard Law School. They are not very good at performing results, having been a graduate there.

[Laughter.]

Chairman WARNER. The Director of the Kennedy School's Social Impact Bond Technical Assistance Lab. That is a fancy title. The SIB Lab provides technical assistance to State and local governments exploring the use of SIBs. Mr. Liebman previously served at the Office of Management and Budget, first as Executive Associate Director and Chief Economist and subsequently as Acting Deputy Director.

And now, we have got the first of two Mark Fishers. This may be the first time we have had a panel where we had two witnesses with the exact same name. Mark Fisher Number one is Social Justice Director with the United Kingdom Department for Work and Pensions. In his role, Mr. Fisher heads the Department's Innovation Fund, which has entered into ten social impact bonds to date that examine different types of social investment and delivery models supporting disadvantaged youth and those at risk of disadvantage. We particularly thank Mr. Fisher from coming all the way from the U.K.

Next, Mark Fisher number two, who is a member of the House of Delegates from Maryland, where he serves on the Ways and Means Committee and also from Calvert County, a neighbor of ours in Virginia. Again, welcome, Mark. Also, he has got a great background in telecom.

And our final witness is Kyle McKay, an analyst with the Texas Legislative Budget Board who previously, again, worked for Maryland's Department of Legislative Services.

We are very excited to have you all here, gentlemen, and look forward to a spirited discussion in your statements and then in our questions.

With that, I would like to call on my partner and colleague, Senator Ayotte, for her opening statement.

OPENING STATEMENT OF SENATOR AYOTTE

Senator AYOTTE. I want to thank Chairman Warner for holding this important hearing. I want to thank all the witnesses for being here.

And I certainly want to echo some of the comments of Senator Warner at the top. I was very glad to be a cosponsor of the DATA Act. I am glad that has passed. I think that is a very important transparency measure that will help us as we try to root out waste, duplication, fraud in the government.

And I am also very proud to cosponsor our Report Duplication Act because it is astounding, the amount of reports that often are requested by Congress, but sit on shelves and no one is reading, and people put a lot of work into them. So, our goal is to—the data we need, we want and we are going to get, but we want to eliminate the reports that people are wasting their time on that no one is reading. So, I really appreciated cosponsoring that with you and your leadership on that.

And, finally, there are a couple other pieces around here that I think are important, as well. I am the cosponsor of a bill with Senator Manchin that—you know, GAO does a lot of fantastic work identifying duplicative programs, performance issues within our government, and often—too often—these reports sit on the shelf. And so our act is pretty straightforward. It would actually require the executive branch within 90 days of the receipt of the annual report card to submit to the Congress what recommendations the executive branch has for eliminating duplicative programs, consolidating for performance measures, and then actually require us, the House and the Senate, to vote on it within a very short time frame so that we can start acting upon some of these things.

So, I think that we share the goal in this committee of making sure that we can find ways for the government to work better for taxpayers, and so I appreciate all of you being here today and appreciate the Chairman's focus on this issue.

And for me, this committee hearing today really is a learning opportunity. I do not know a lot about social impact bonds, so my focus is going to be, as the Ranking Member of this Task Force, pretty simple. I want to know if and why social impact bonds are feasible and advisable for the Federal Government, what evidence we have that they work in practice and not just in theory, and how or if they could help the government weed out waste, fraud, and abuse, and have actual accountability for the dollars that we would spend to address problems.

In addition, I certainly would like to know whether these bonds would further enhance transparency and accountability for taxpayers. Government can always use more innovation, and so whenever we can get the private sector engaged to helping us address important problems, I think that is a very positive step for us and we need to be open to new, inventive approaches. But, I think we owe it to the taxpayers to understand how effective these approaches are to make evidence-based decisions and to understand if we bring a third party into a complex contract arrangement, how will this work to save money for the government.

So, I look forward to hearing from all of you today. I think this is an important hearing to really bring this issue to the forefront in the Congress and I look forward to hearing each of your perspectives on this issue, so thank you.

Chairman WARNER. Thank you, Senator.

This hearing was born because of Senator Whitehouse's interest, and we do want to get to the panel, but, Sheldon, do you want to make a comment?

OPENING STATEMENT OF SENATOR WHITEHOUSE

Senator WHITEHOUSE. Sure. I would like to join my colleagues in welcoming all of you to this discussion. I want to thank Chairman Warner for his leadership.

I think Senator Ayotte asked the right questions. I would add one, not just if and why social impact bonds make sense, but also when. And I think that there is at least the prospect of a real opportunity here when new theories of ways to save money can meet the standard of a private investor but cannot meet the standard of our dear friends at CBO or OMB, and it provides a mechanism for taking a trial and giving it a shot with private capital both willing to make the bet and setting down the measures of accountability to test whether the results have really been achieved. I think it has the capacity to be a very significant breakthrough technology, if you will.

I think once you get past that first stage and the case has proven itself, the likelihood that private investors need to make money off of regular government operations begins to diminish. But, I really do think that that leading edge of innovation is where the action is and this could be a very useful tool in that regard.

So, again, my thanks to all the witnesses for being here. My thanks to Chairman Warner for his leadership. I would point out, the way I always do in this room, that we are spending 50 percent more on health care than all the other industrialized countries in the world and we are not getting better results and we are not insuring more people, so there is clearly room for some very, very big innovation gains in that sector and I hope we can talk a little bit about that. Thank you.

Chairman WARNER. Gentlemen, we are very interested in this idea and look forward to your testimony. Dr. Liebman, why do you not start us off.

STATEMENT OF JEFFREY B. LIEBMAN, MALCOLM WIENER PROFESSOR OF PUBLIC POLICY, AND DIRECTOR, SOCIAL IMPACT BOND TECHNICAL ASSISTANCE LAB, JOHN F. KENNEDY SCHOOL OF GOVERNMENT, HARVARD UNIVERSITY

Mr. LIEBMAN. Thank you. Chairman Warner, Ranking Member Ayotte, Senator Whitehouse, thank you for inviting me to testify this morning about Pay for Success contracts and social impact bonds.

Despite spending hundreds of billions of dollars each year, our country is not making rapid enough progress in addressing social problems, from recidivism to school readiness, and obesity to workforce development. And for the vast majority of the spending, we have little to no evidence about which programs actually improve social outcomes. Instead, governments continue to fund the same services year after year, paying based on the number of people served regardless of whether the programs make a difference in the lives of the people they aim to help. We can and must do better to produce more value with each taxpayer dollar.

Starting with the GPRA Modernization Act of 2010, the Government Performance Task Force has been at the front lines of the effort to strengthen performance management and improve how our government works. I believe that Pay for Success contracts could be a critical next step in this Task Force's efforts.

Under the most common PFS model, the government contracts to obtain social services from a local service provider. The government pays entirely or almost entirely based upon the provider achieving performance targets, such as a ten percent increase in employment or a 50 percent reduction in emergency room visits. Performance is rigorously measured by comparing the outcomes of individuals referred to the service provider relative to the outcomes of a comparison group that is not offered the services. If the program fails to achieve minimum performance targets, the government and taxpayers do not pay. Above the minimum, payments occur on a sliding scale, with greater payment for better performance.

Under this model, there is often a several-year lag between when services are delivered and when performance can be measured and performance related payments made. Private investors bridge this gap, providing capital to fund the up-front operating expenses of the service provider. The private investors get repaid only if the provider achieves the required level of performance. This financing arrangement is known as a social impact bond.

Over the past two years, we have observed the Pay for Success model improve government performance in three ways. First, it improves decision making by bringing market discipline to government decisions about which programs to expand, as investors will only put their dollars behind programs with a strong evidence base.

Second, it shifts government resources to pay for preventative services rather than pay for the remedial costs associated with bad outcomes.

And, third, it fosters multi-year collaborations to tackle challenging social problems, something that is very difficult to accomplish with conventional annual government budgeting and standard government management techniques.

Dozens of State and local governments around the country are exploring this model. My Harvard Kennedy School SIB Lab is providing pro bono technical assistance to ten State and local governments that are developing PFS projects. These include the States of Colorado, Connecticut, Illinois, Massachusetts, Michigan, New York, Ohio, and South Carolina, as well as the Cities of Chicago and Denver. These governments are developing PFS contracts to address a wide range of policy issues, from early childhood education to homelessness, and from prison recidivism to diabetes prevention. And there are four U.S. Pay for Success contracts that are already delivering services, including projects in Utah, New York City, Massachusetts, and New York State.

If the Pay for Success model is going to achieve its full potential, the Federal Government will need to play a larger role than it has played to date. First, in collaborating with States in projects that produce Federal budgetary savings. Many of the most promising PFS projects being developed by State governments will produce Federal budgetary savings along with the State savings. This is particularly true of interventions that reduce future Medicaid costs. For most of these projects, the total Federal and State benefits exceed the project costs, but the State savings alone do not. These projects are viable only if the Federal Government partners with the State government and enables performance payments to be based on the combined government benefits.

Second, the Federal Government has an important role to play in areas where nearly all the benefits accrue to the Federal Government, because there is little impetus for State and local governments to get involved in these sorts of projects. Take, for example, an initiative that would enable individuals with health impairments to remain in the workforce, thereby reducing Federal spending on SSI and Disability Insurance. Unless the Federal Government initiatives Pay for Success projects in policy areas like this, they are just not going to happen.

I want to emphasize that the President's proposal for a Pay for Success Incentive Fund at the Treasury Department is quite promising, as is the draft legislation that was released this week by Republican Indiana Congressman Todd Young, because both envision a range of Federal strategies matched to the particular needs of different types of PFS projects.

Pay for Success is based on the simple premise that governments should pay for demonstrated results rather than for unverifiable promises. I look forward to working with members of this Task Force to further explore how the Federal Government can best encourage the use of this promising approach.

Thank you.

[The prepared statement of Mr. Liebman follows:]

Testimony of Jeffrey B. Liebman
Professor of Public Policy and Director of the Harvard Kennedy School Social Impact Bond Technical Assistance Lab
Before the Government Performance Task Force of the Senate Budget Committee
May 1, 2014

Chairman Warner, Ranking Member Ayotte, and Members of the Government Performance Task Force, thank you for inviting me to testify this morning about Pay for Success contracts.

Despite spending hundreds of billions of dollars each year, our country is not making rapid enough progress in addressing social problems -- from recidivism to school readiness, and obesity to workforce development. And, for the vast majority of this spending, we have little to no evidence about which programs actually improve social outcomes. Instead, governments continue to fund the same services year after year, paying based on metrics like the number of people served, regardless of whether the programs make a difference in the lives of people they aim to help. We can and must do better to produce more value with each taxpayer dollar.

Starting with the GPRA Modernization Act of 2010, the Government Performance Task Force has been at the front lines of the effort to strengthen performance management and improve how our government works. I believe that Pay for Success, or PFS, contracts could be a critical next step in this Task Force's efforts.

Under the most common PFS model, the government contracts to obtain social services from a local service provider (or team of providers). The government pays entirely or almost entirely based upon the provider achieving performance targets, such as a 10 percent increase in employment or a 50 percent reduction in emergency room visits. Performance is rigorously measured by comparing the outcomes of individuals referred to the service provider relative to the outcomes of a comparison (or "control") group that is not offered the services.

If the program fails to achieve a minimum performance target, the government (and taxpayers) do not pay. Payments increase for performance exceeding this target, up to a maximum payment level. Importantly, the level of payment is often tied directly to the taxpayer savings that occur as a result of the intervention, in some cases producing net savings in excess of the total cost of the original intervention.

As an example, consider a program that works with young men exiting the juvenile justice system. We know that, without transitional support, over 60 percent of these youth will end up back in jail within five years of release. In addition to the social cost of new crimes, these high recidivism rates impose a large budgetary cost on governments—each inmate costs taxpayers thousands of dollars per year.

Under a PFS model, the government contracts with a social service provider to help support these young men as they transition out of the juvenile justice system. The government then tracks recidivism rates for young men referred to the program as well as for a comparable group of young men who were not referred. At a pre-determined time, the government compares the outcomes for these two groups, and pays an amount based on the actual reduction in prison time generated as a result of the program. In other words, by investing in preventative services up-front, governments can actually save money down the road, improving lives and reducing crime in the process.

Under this model, there is often a several year lag between when services are delivered and when results can be measured and government payments occur. Private investors bridge this gap, providing capital to fund the upfront operating expenses of the service provider. The private investors get repaid only if the provider achieves the required level of performance. This financing arrangement is often called a "social impact bond." In most pay for success projects to date, a nonprofit private sector intermediary has helped assemble the project, raising funds from investors and coordinating other key activities such as the contract and evaluation design.

Over the past two years, we have observed the PFS model improve government performance in four ways:

- *Improving decision making.* The PFS model brings important market discipline to government decisions about which programs to expand as investors will only put money behind programs with a strong evidence base. In addition, the rigorous measurement of project impacts in PFS projects will enable smart decisions to be made about whether or not to continue services beyond the period of the initial project.

- *Shifting from remediation to prevention.* The injection of private sector financing allows the government to shift resources so as to pay for preventative services rather than pay for the remedial costs associated with bad outcomes.

- *Fostering multi-year collaboration.* Tackling challenging social problems often requires a sustained multi-year collaboration among public, private, and non-profit actors. It is very difficult to sustain the necessary energy and partnerships with traditional annual government procurements, especially given the high frequency of turnover of government appointees. Pay for success contracts establish a framework for sustaining multi-year collaboration.

Dozens of state and local governments around the country are exploring this model. In 2012, with generous support from the Rockefeller Foundation, the Laura and John Arnold Foundation, and the Dunham Fund, I launched the Social Impact Bond Technical Assistance Lab (SIB Lab) at the Harvard Kennedy School. In the past two years, the SIB Lab has provided *pro bono* technical assistance to ten state and local governments that are developing PFS projects. These include the states of Colorado, Connecticut, Illinois, Massachusetts, Michigan, New York, Ohio, and South Carolina, as well as the cities of Chicago and Denver. These governments are developing PFS contracts to address a wide range of policy issues—from early childhood education to homelessness and prison recidivism to diabetes prevention.

There are four U.S. pay for success projects that are already delivering services. New York City launched the first PFS initiative in the United States in 2012, designed to help young adults incarcerated at Riker's Island transition back to society upon release. In 2013, our initial state partners, Massachusetts and New York, launched the first state-led PFS projects in the United

States—the largest PFS projects anywhere in the world to date and the first to base payments on rigorous, randomized evaluations. Both of these projects are focused on delivering services to young men who have been involved in the criminal justice system and have the aim of increasing their employment and preventing their return to jail or prison. Finally, a PFS initiative to expand access to pre-school for underserved children is being piloted in Utah.

If the PFS model is going to achieve its full potential, the Federal government will need to play a larger role than it has played to date. There are three primary ways in which the federal government could play a critical role:

- *Collaborating with states in projects that produce federal budgetary savings.* Many of the most promising PFS projects being developed by state governments will produce federal budgetary savings along with state savings. This is particularly true of interventions that reduce future Medicaid costs. For most of these projects, the total federal and state savings exceed project costs, but the state savings alone do not. These projects are viable only if the federal government partners with the state government and enables performance payments to be based on the combined government benefits.

- *Establishing PFS initiatives in areas where nearly all of the benefits accrue to the federal government.* There are promising policy areas for PFS initiatives where the federal government accrues most of the benefits and where states and cities will have little impetus on their own to set up a project. For example, consider an initiative that would enable individuals with health impairments to remain in the workforce, thereby reducing federal spending on Supplemental Security Income, Disability Insurance, Medicare, and Medicaid. Unless the Federal government initiates a pay for success project in this sort of policy area, it is highly unlikely that any projects will occur.

- *Using PFS to foster learning about what works.* As members of this Task Force are acutely aware, we often have minimal evidence on program effectiveness. Pay for Success offers the most promising technique available to quickly gather a lot more evidence across a wide range of social spending areas so that better budget decisions can be made both by the federal government and by state and local governments. In particular, well-designed PFS projects provide rigorous, real time, assessments of program impacts. Federal support can help make viable projects that offer the greatest learning opportunities.

There are several specific mechanisms through which the Federal government can encourage the spread of the PFS approach. Different mechanism will be appropriate in different circumstances.

First, in cases in which a state-led project will produce Federal budget savings, the Federal government can make grants to states to cover a portion of the success payments. This was the approach used by the U.S. Department of Labor in its 2012 solicitation for PFS pilot projects. DOL agreed to pay for the benefits that would accrue at the federal level, injecting an additional $22M total in potential success payments to the New York State and Massachusetts PFS projects.

Second, federal agencies can give state and local governments the flexibility to use federal funding streams to make success payments.

Third, federal agencies can initiate pay for success projects in policy areas that are federal priorities, either through direct solicitations for service providers or through state and local government competitions.

Fourth, in cases in which the potential for learning is great, the Federal government can help reduce the financial risk of projects through the use of "credit enhancements." In practice, some of the most interesting and innovative PFS projects are too risky for commercial investors. Given that a successful intervention discovered in one jurisdiction has the potential to spread nationwide, there is a useful role for the federal government in absorbing a portion of the risk so that learning can occur. A credit enhancement or other guarantee from the federal government for a minimal level of repayment can make it possible for commercial investors to finance this sort of project.

The President's proposal for a Pay for Success Incentive Fund at the Treasury Department is quite promising because it envisions a range of strategies matched to the particular needs of different types of PFS projects.

Pay for Success is based on the simple premise that governments should pay for demonstrated results rather than for unverifiable promises. By focusing attention on achieving outcomes and evaluating impacts, PFS has the potential to produce better results at a lower cost to taxpayers. I look forward to working with members of this Task Force to further explore how the Federal government can best encourage the use of this promising approach.

Chairman WARNER. Thank you, Dr. Liebman.
Mr. FISHER.

STATEMENT OF MARK FISHER, CBE, SOCIAL JUSTICE DIRECTOR, DEPARTMENT FOR WORK AND PENSIONS, UNITED KINGDOM

Mr. FISHER. Thank you, Senator. I should say, it is a pleasure to be here. I am Mark Fisher. I am Director for Social Justice at the Department for Work and Pensions in the U.K.

My particular role, which stems from Mr. Ian Duncan Smith's tenure as Secretary of State, is the prevention of worklessness. How do you stop people drifting onto welfare in the first place? How do you prevent those with the most long-term conditions simply staying in life on welfare? And to us, social investment, social impact bonds, have been a powerful part of the solution to that for a number of reasons.

Firstly, they actually are a way of getting investment upstream, you know, into the things that stop long-term costs happening later in people's lives. Secondly, they bring about innovation. And, thirdly, they bring about a powerful partnership between the states, investors, and small voluntary and community sector charities, people who do the work on the ground, all of which are really important to us if you are going to prevent welfare dependency. So, right from the start, we were very keen to see if we could increase social investment and try out some of these social impact bonds.

Now, the U.K. is trying a number of social impact bonds, the famous one in Peterborough Prison, which was the first, which was about finding a way of preventing ex-prisoners reoffending. We have social impact bonds to increase levels of adoption, to increase numbers of adopted children. You end up saving taxpayers down the line. We are trying to help prevent kids going into care. Again, care is very expensive. If you can put an intervention in early that stops a child going to care, you are going to save the taxpayer money.

And the particular one I want to talk about is the Innovation Fund. We launched in my team ten social impact bonds which are designed to intervene with disadvantaged kids, kids who are falling out of school, becoming detached from school, who are likely to have a low education attainment. Can you do something about those children to increase their educational attainment, to re-engage them in work or in an apprenticeship or training such that they simply do not drift into welfare when they get to 18 but actually end up in employment? If you do that successfully, you will save the taxpayer money.

So, we built ten social impact bonds to test that principle. We produced some more results yesterday. We have something like 10,000 of these children being helped through our ten social impact bonds and we are going to evaluate this thoroughly to see if it works.

They rely on a risk share between the taxpayer and the provider. The taxpayer is taking a bit of risk if we have not got the calculations right. The provider is taking a bit of risk if they do not actually deliver results.

A lot of it depends on this rate card that we produced, which was in my testimony, which sets out the precise sums of money that we pay for results. For example, if a child's attendance improves in school, we think that will end up in a long-term saving to the taxpayers. We pay 1,400 pounds for that. Sustained employment and entry into employment, several more thousand pounds, we pay. And those are all based on calculations of what the long-term saving to the taxpayer actually is.

That requires a lot of data. You referred to data. Data is key. Data sharing is key. We have had to match data between the education system and the welfare system to actually do these calculations in the first place. But, obviously, we are now going to evaluate it and see if it works.

We are seeing a growth in the social investment market in the U.K. Only yesterday, the Deputy Prime Minister, Mr. Nick Clegg, announced an expansion of our scheme and a further scheme for young homeless people on the basis, again, that these are not only good for—good in themselves, but actually do end up saving taxpayers money down the line from this sort of preventive activity.

And the final thing I would say is I think the fundamental lessons from us about these schemes are they do bring about innovation. They do help social problems. But they can be inherently quite complicated.

And I think the lessons from us, if we are going to see expansion, is, that one, you have to find a social problem. You have to find a social problem which captivates commissioners as well as investors. In our experience, there is no shortage of investors wanting to invest in these schemes. The shortage is the number of commissioners who are willing to actually organize themselves to run contracts with the investors and put their own money at risk in terms of results payments.

Second, you have to make them simple. There are a number of complicated ways of doing social investment. I you want to get traction with these schemes, you have to keep them simple. Our rate card is not perfect. We are going to have to evaluate it and change it over time, but at least it is relatively simple and the market can understand it.

I think if you do expand these things, you will see that emphasis on prevention, which is really helpful. I think it is one of those things that it is a really good thing just to start and get going and see how it works and evaluate it over time, and I think this thing will get traction simply the more you try it and the more you do it, and certainly the practice in U.K. does seem to be working.

Thank you.

[The prepared statement of Mr. Fisher follows:]

U.S. Senate Budget Committee hearing on Social Impact Bonds (SIBs)

UK Experience of designing, commissioning and implementing SIBs

Mark Fisher CBE, Social Justice Director,
UK's Department for Work and Pensions (DWP)

1st May, 2014

Background

The UK Government is committed to Social Justice - which we equate to the prevention of welfare dependency, and to the equipping of people with the support and tools needed to turn their lives around. The Government's Social Justice Strategy can be found at https://www.gov.uk/government/publications/social-justice-transforming-lives. Social Investment, and the greater use of Social Impact Bonds (SIBs), is an integral part of that strategy. SIBs can unlock new funding streams for tackling social disadvantage; create opportunities for local level delivery through voluntary and community organisations; and improve delivery performance by only paying for results and bringing greater business disciplines through the involvement of private sector investors.

The UK social investment market has seen rapid growth but remains relatively small (around £200m in 2010[1]). Its potential, however, is great. UK charitable investment and endowment assets alone account for nearly £95 billion. If just 5 per cent of these assets, 0.5 per cent of institutionally managed assets and 5 per cent of retail investments in UK Individual Savings Accounts (ISAs) were attracted to social investment, it would mean unlocking around £10 billion of new finance capacity.

The UK Government is committed to grow this nascent market and has made significant progress through:

- the establishment of Big Society Capital, the world's first social investment institution, with up to £600m to invest in this market and a mission to provide wider support for the market.
- the introduction of the MoJ Peterborough Pilot, the world's first Social Impact Bond;
- the establishment of the Cabinet Office led Centre for SIBs, including the introduction of two Outcome Funds, to support potential SIBs from concept through to implementation;
- the implementation of the £30 million DWP Innovation Fund (IF);
- and the introduction of social investment tax relief for individuals investing in SIBs.

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1 *Cohen R et al, 2010, Social Investment Ten Years On, Final report of the Social Investment Task Force.*

SIBs in the UK

There are currently 15 SIBs in the UK, with over 50 in the development pipeline. These cover policy areas including troubled families and children in care, unemployment, housing and homelessness, criminal justice, health, drug addiction, and education.

Ten of the current 15 SIBs were implemented due to the introduction of the DWP's £30 million 'Innovation Fund;' a pilot initiative aimed at supporting and testing social investment projects for disadvantaged teenagers. The Innovation Fund has three main objectives:

- to deliver support to help young people aged 14 years and over who are disadvantaged, helping them participate and succeed in education or training and thereby improve their employability, reducing their longer term dependency on the welfare state;
- to test the extent to which the IF generates benefit and other wider social and fiscal savings;
- and to support the development of the social investment market and build the capacity of smaller delivery organisations.

The IF payment model

A key element of the IF is the 100% payment by results model, with DWP as the commissioner, only paying for outcomes with a proven link to improving the chances of a young person entering and sustaining future employment. The maximum amount paid for each outcome represents a value to the taxpayer, based on a proportion of three year benefit savings. This value takes into account an assessment of "deadweight" levels (comparing the usual educational achievement rates for a disadvantaged group and the performance of a significantly less disadvantaged group). The outcome 'rate card' is as follows[2]:

Table 1: DWP Rate Card

Outcome	**Maximum Payment (British Pounds)**
Improved attitude towards schools	£700
Improved behaviour	£1300
Improved attendance	£1400
Entry level qualification	£900
NVQ[3] level 1 or equivalent	£1100
NVQ level 2 or equivalent	£3300
NVQ level 3 or equivalent	£5100
Entry into Employment	£3500
Sustained Employment	£2000

[2] Round two Rate Card

[3] NVQs (National Vocational Qualifications) are work based awards that are achieved through assessment and training in England, Wales and Northern Ireland. They range from level 1 upwards in terms of difficultly. At particular levels they are equivalent to academic qualifications.

A key distinction from other SIBs is that the IF uses proxy outcomes and an individual level (as opposed to a cohort) payment approach. The outcomes, such as addressing truancy rates and obtaining educational qualifications, are based on the premise that they are likely to lead to future employment. However, given that employment is some way off for these young people, investors would not have been willing to wait four or more years for these savings to occur and get a potential return on their investment; intermediate outcomes and individual outcome payments made the proposition more attractive to bidders and enabled a cash flow to be generated almost immediately. It also made the SIBs quicker and easier to implement by keeping the payment model as simple as possible.

The Market

In order to stimulate and expand the social investment market, the IF was commissioned via an open competition. Despite the innovative nature of SIBs and the relative immaturity of the market, the market responded well to this and ten SIBs were implemented as a result, with six going live in April 2012 and a further four in November of the same year.

The IF has demonstrated that the potential investor market is large and diverse. It attracted a range of investors including dedicated Social Funds, small, medium and large businesses, high net worth individuals, as well as local people in the community. The motivations behind investing range from philanthropy to viewing the IF as a potential source of profit – but regardless of where they fall on this spectrum, they share the common goal of improving the lives of disadvantaged young people in the UK.

Nature of provision and progress to date

Independent evaluation[4] confirms that the projects are recruiting and supporting a broad range of disadvantaged young people with multiple risk factors ranging from truancy and disengagement from school, to learning difficulties and poor literacy and numeracy. The barriers to re-engagement and progression displayed by young people are equally widely spread and range from issues of poor self-esteem and lack of self-confidence through to motivational, emotional and behavioural difficulties.

At the heart of the IF model is the education system, with schools as the main referral route and gateway to provision. Schools have fully engaged and have bought into the IF, with demand outweighing supply. Research evidence shows that young people on the programme are engaged, motivated and value the support they receive.

The IF is delivered primarily through the voluntary and community sector and progress has been very encouraging so far. Up to the end of October 2013,

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[4] The Innovation Fund pilots qualitative evaluation: Early implementation findings by Insite Research and Consulting, published on the 30th April 2014

the IF SIBs have supported 10,700 young people who have achieved 8,000 outcomes relating to education and employment. This is up from 6,100 starts and 1,800 outcomes up to the end of March 2013. Over the three year contract period we expect up to 17,000 young people to be supported in turning their lives around.

Investors, intermediaries and delivery bodies have also been found to be working well together to make the IF a success. They believe that this initiative is making a real difference to the lives of young people. The social investment and funding model has been a key driver of behaviours and has focused attention on generating starts and tracking individual participants towards the achievement of outcomes. The interests of all parties in ensuring the projects are successful and the need to generate cash-flow for continued delivery to be sustained, has led to careful and pro-active performance management which has driven up performance.

Building on the UK Experience

Overall the UK experience to date has been positive and there are a number of lessons learned which will help the UK and other countries take SIBs forward, in particular:

- identifying social problems which social investment is well placed to address – those where localised solutions and the voluntary and community sector are needed; and where social and fiscal savings can be identified and measured
- keeping it simple by avoiding overly complicated payment models
- cutting across Government Departmental boundaries to ensure a cross-government commissioning and funding approach which scales up SIB models
- stimulating and growing the market place by commissioning SIBs via a competitive tender approach
- engaging the market early to ensure they have enough time to develop and submit proposals
- fully evaluating SIB models in order to build on 'what works' and build a credible evidence base going forward

The Innovation Fund is subject to comprehensive and independent evaluation, including an impact assessment, Social Return on Investment strand and qualitative research with stakeholders. The findings will be published through a series of DWP research reports. Further summary information about social investment and the Innovation Fund can be found in the accompanying annex to this paper.

Chairman WARNER. Thank you, Mr. Fisher. I was just saying to Senator Ayotte that we share a common language, but usage of words would be the difference. I am not sure if we had some successful project here we would ever call it a scheme, but—

[Laughter.]

Chairman WARNER. That may be the right lead-in for Delegate Fisher, who may be more critical of some of these, but Delegate Fisher, thank you for being here.

STATEMENT OF HON. MARK FISHER, DELEGATE, MARYLAND HOUSE OF DELEGATES

Delegate Fisher. I actually like that word, Mr. Chairman.

[Laughter.]

Delegate Fisher. Yes, I am Mark Fisher number two. I feel like I am on Austin Powers, you know. I am number two. I am a member of the Maryland House of Delegates and I serve on the House Ways and Means Committee. I reside in Prince Frederick, Maryland, and I am pleased to provide testimony today concerning social impact bonds.

In the 2013 regular session of the Maryland General Assembly, Delegate Sandy Rosenberg of Baltimore City introduced House Bill 517. Delegate Rosenberg is a professor at the University of Baltimore School of Law and served on the House Ways and Means Committee. His bill, heard in that committee, introduced the idea of social impact bonds. As stated in the bill's synopsis, H.B. 517 would enable the State of Maryland to issue an RFP for social impact bonds. The goal of the legislation was to improve pre-K to 12 public education in Maryland.

Many non-Marylanders might ask a simple question: Why would a Delegate introduce legislation for SIBs when his State has a top-rated public education system? The answer to this question is not so transparent. You see, amongst all of the celebrating of Maryland's public education achievements, what may be true of a State is not the case in Baltimore City.

Baltimore City has some of the worst outcomes in public education in the United States, yet the city has the second-highest per pupil spending in the U.S., second only to New York, according to the Bureau of the Census. Baltimore spends almost $15,500 per pupil, or about double the cost of a private or parochial education in the city. It is understandable as to why the SIB alternative, given these facts, to the status quo was offered.

In their analysis of H.B. 517, the Maryland Department of Legislative Services analyzed numerous factors. They researched a program for prisoner recidivism in Great Britain and they worked with the Maryland Department of Public Safety and Correctional Services.

In January of 2013, the Department of Legislative Services advised against SIBs for the following reasons. SIBs cause an increase in budgetary pressure compared to direct program financing due to the necessity of funding contingent liabilities and the added expense features unique to SIBs. SIBs do not produce cost savings when outcomes are achieved, even under highly optimistic assumptions. SIBs could effectively exclude new providers and program types that do not have a well established record of success with investors seeking to minimize risk. And, SIBs potentially distort evidence used in policy decisions.

As a member of the Maryland House Ways and Means Committee for four years, I have had an opportunity to listen to many proposals seeking to improve outcomes in public education. While I understand that SIBs could leverage public dollars, my concern is that alternative models already exist.

In the case of public education, why not take a pragmatic approach. In those jurisdictions where outcomes are acceptable, public dollars keep flowing. But in those jurisdictions where outcomes repeatedly are substandard, such as in Baltimore City, why not provide tuition vouchers and a school choice program. Since Maryland spends twice the amount on public education in Baltimore per pupil than private education, why not try a voucher system. The cost savings from less spending per pupil would more than offset the expenditures of tracking student progress, something the State already does.

In conclusion, SIBs are well intended, but they unnecessarily bloat bureaucracies. Moreover, they have the potential of leading to crony capitalism. And, as the Maryland Department of Legislative Services concluded, they do not save money.

Thank you, Mr. Chairman, for the opportunity to provide this testimony, and I would be happy to answer any questions.

[The prepared statement of Delegate Fisher follows:]

Social Impact Bonds – Maryland HB 517

Good morning Mr. Chairman and members of the committee. My name is Mark Fisher. I am a member of the Maryland House of Delegates, serve on the House Ways & Means Committee and reside in Prince Frederick, Maryland. I am pleased to provide testimony today concerning Social Impact Bonds.

In the 2013 regular session of the Maryland General Assembly, Delegate Sandy Rosenberg of Baltimore City introduced HB 517. Delegate Rosenberg is a professor at the University of Maryland School of Law, and served on the House Ways & Means Committee. His bill, heard in Ways & Means, introduced the idea of Social Impact Bonds. As stated in the bill's synopsis, HB 517 would enable the State of Maryland to issue an RFP for Social Impact Bonds. The goal of the legislation was to improve Pre K to 12 public education in Maryland.

Many non-Marylanders might ask a simple question: Why would a Delegate introduce legislation for SIB's when his state has a top-rated public education system? The answer to this question is not so transparent. You see, amongst all of the celebrating of Maryland's public education achievements, what may be true of the state, is not the case in Baltimore City. Baltimore City has some of the worst outcomes in public education in the United States. Yet, the city has the second highest per pupil spending in the United States, second only to New York, according to the Bureau of the Census. Baltimore spends almost $15,500.00 per pupil – or about double the cost of an education at private and parochial schools.

It's understandable as to why the SIB alternative to the status quo was offered.

In their analysis of HB 517, the Maryland Department of Legislative Services analyzed numerous factors. They researched a program for prisoner recidivism in Great Britain and they worked with the Maryland Department of Public Safety and Correctional Services.

In January of 2013, the Department of Legislative Services advised against SIB's for the following reasons:

1. SIB's cause an increase in budgetary pressure compared to direct program financing due to the necessity of funding contingent liabilities and the added expense of features unique to SIB's;
2. SIB's do not produce cost savings when outcomes are achieved, even under highly optimistic assumptions;
3. SIB's could effectively exclude new providers and program types that do not have a well-established record of success with investors seeking to minimize risk; and
4. SIB's potentially distort evidence used in policy decisions

As a member of the Maryland House Ways & Means Committee for four years, I've had an opportunity to listen to many proposals seeking to improve outcomes in public education. While I understand that SIB's could leverage public dollars, my concern is that alternative models already exist.

In the case of public education, why not take a pragmatic approach. In those jurisdictions where outcomes are acceptable, public dollars keep flowing. But, in those jurisdictions where outcomes repeatedly are substandard, such as in Baltimore City, why not provide Tuition Vouchers and a School Choice Program? Since Maryland spends twice the amount on public education in Baltimore per pupil than private education – why not try a Voucher System? The cost savings from less spending per pupil would more than offset the expenditures of tracking student progress – something the state already does.

In conclusion, SIB's are well-intended, but they unnecessarily bloat bureaucracies. Moreover, they have the potential of leading to Crony Capitalism, and as the Maryland Department of Legislative Services concluded, they do not save money.

Thank you Mr. Chairman for the opportunity to provide testimony. I'd be happy to answer any questions.

Chairman WARNER. Thank you, Delegate Fisher.
Mr. MCKAY.

STATEMENT OF KYLE McKAY, ANALYST, TEXAS LEGISLATIVE BUDGET BOARD

Mr. MCKAY. Chairman Warner, Ranking Member Ayotte, and members of the Task Force, my name is Kyle McKay. I am currently an Analyst with the Texas Legislative Budget Board and was previously an Analyst with the Maryland Department of Legislative Services, though the views here today are my own. Thank you for the invitation to appear before you today to discuss social impact bonds.

For governments facing revenue constraints, social impact bonds may appear to be the silver bullet for social services. However, the benefits may be based largely on wishful thinking, yet the risks and cost to governments from engaging in this type of model are real, which is why an in-depth study that I led at the Maryland Department of Legislative Services resulted in a recommendation that the State not pursue social impact bonds.

Based on my research in Maryland, I think it is important to closely examine some of the common claims made about social impact bonds, the first of which is that social impact bonds will provide new capital for programs. Forgive me for stating the obvious here, but if a program funded by a social impact bond works, the government will have to pay for the program. Thus, governments should budget for this potential payment by appropriating funds in advance.

Though it may be technically possible to appropriate funds after outcomes have been demonstrated, in spite of fiscal best practices and balanced budget rules in States and local governments, investors will likely seek a secured source of income for repayment. This is why the governments of Massachusetts, New York City, and the U.K., among others, are pre-funding their potential outcome payments with government funds.

Because the government may have to pay back investors with interest and a bonus or a return on investment and the mechanics of this model require a large number of consultants and intermediaries, the government must budget for the potential payment using an amount that is greater than the investors provide to the program.

In Massachusetts, for example, the State is liable for up to $27 million in payments for their social impact bond pilot program, yet the investors are providing only $12 million in funding. The social impact bond will, therefore, add pressure to a cash-strapped budget.

The second claim is that governments pay only for success. The investors must face a real risk, as a program with a very high likelihood of success would result in a risk premium to investors bearing no risk. In addition to the challenge of selecting a program with something approximate to a 50 percent chance of success, the government must also have a high degree of confidence in the commitment of the private investors to realize a loss if the program fails. However, as the consulting group RAND found in the Peterborough pilot, the complexity of the model means that, in some instances, that, quote, "the actual transfer of risk is not clear."

Attempting to manage social services through an all or nothing payment to a host of intermediaries will inevitably produce a contract that is complex and, therefore, subject to unforseen weaknesses, so I am not sure this is an escapable problem.

And the third claim is that the programs will save governments money. Proponents argue that social impact bonds will result in decreased expenditures and, thus, cost savings to the State. There is a basic mathematical problem with this claim, though. Pilot programs do not operate at a scale large enough to produce significant cost savings to the government. In Maryland, we used well established cost estimation techniques with our State agencies to model a high impact pilot program. The program came nowhere close to paying for itself, which is consistent with RAND's finding that Peterborough is too small to produce savings.

Though the benefits may not be as obtainable as advocates claim, the appeal of innovation may still attract many. But it is important to consider a number of significant risks to governments engaging in this model before making a decision to experiment. These risks have been shown to be persistent and problematic across a large number of policy areas following decades of attempts to link payments to outcomes. Whether it is teaching to the test in education or creaming in health care, we have seen over and over again that heightened levels of pressure on outcome indicators can backfire. Not only can the pressure reduce the validity of the indicator, it can produce unintended consequences that overshadow the benefits of, quote, "paying for success."

In all of these historical experiences, the percentage of payment at risk represented less than 50 percent of the income to the actors. Simply adding an investor will not erase these problems. Instead, there is a risk that the introduction of an investor will just exacerbate the problems typically experienced as the amount of funding at risk increases and the investors assume a primary role for establishing what constitutes evidence.

Now, these risks are substantial, but the one that should be the most concerning is the opportunity cost. Building a highly sophisticated contracting and financing mechanism to focus on one small program may impede the capacity of agencies to engage in broader policy evaluation and change.

In short, it is my personal opinion that social impact bonds are expensive and risky. They may also distract governments from a more comprehensive, sustainable approach to improving public policy. Across a variety of policy areas, we have learned that measuring outcomes and using monetary payments to incentivize behavior change is difficult and often produces mixed results. Simply throwing investors into the fray will not resolve the ongoing limitations and problems. Instead, it may very well exacerbate the challenges.

Thank you.

[The prepared statement of Mr. McKay follows:]

Statement of

Kyle McKay

on

Social Impact Bonds

Government Performance Task Force
U.S. Senate Committee on the Budget

May 1, 2014

All opinions expressed herein are solely the author's and should not be attributed to any of individuals or organizations with which McKay is associated.

Chairman Warner, Ranking Member Ayotte, and Members of the Task Force, my name is Kyle McKay and I am currently an analyst with the Texas Legislative Budget Board. I would like to thank you for the invitation to appear before you today to discuss social impact bonds.

The primary difference between social impact bonds and prior attempts to link outcomes to payments is the inclusion of investors. According to proponents, social impact bonds and the inclusion of investors can increase the extent of evidence-based policy, encourage innovation in service programming, produce costs savings to governments, and invoke government expenditures only after success is demonstrated. For governments facing revenue constraints for political or economic reasons, social impact bonds may appear to be the silver bullet for social services. However, the benefits may be based largely on wishful thinking. Yet the risks and costs to governments from engaging in this type of model are real, which is why an in-depth study conducted at the Maryland Department of Legislative Services led to the recommendation that the state not pursue social impact bonds.

Common Misconceptions about Social Impact Bonds

After conducting research with the Maryland Department of Legislative Services, I have discovered a number of misconceptions surrounding social impact bonds. Five common claims should be closely examined:

1. *Social impact bonds will provide new capital for programs*

It is important to remember that if the program operated in conjunction with a social impact bond is successful, the government will have to pay for the program. Thus, governments should budget for this potential payment by appropriating funds in advance. Though it may be technically possible to appropriate funds after outcomes have been demonstrated in spite of fiscal best practices and balanced budget rules, investors will likely seek a secured source of income for repayment. As a result, the governments of Massachusetts, New York City, and the U.K. are pre-funding potential outcome payments.[1]

Given the costs of attorneys, consultants, and program evaluators, the potential for a return on investment to third-parties, and a second tier of program managers, using a social impact bond relative to direct financing will therefore *increase* pressure on the budget, as the government must set aside *more* funds than even the investors provide to the program. In Massachusetts the state is liable for up to $27 million in payments. The investors, in contrast, are providing only $12 million in funding. This is why McKinsey, which is generally supportive of social impact

[1] In Massachusetts, for example, there is "a sinking fund requirement under which the secretary shall request an appropriation for each fiscal year that the contract is in effect, in an amount equal to the expected payments that the commonwealth would ultimately be obligated to pay in the future based upon service provided during that fiscal year, if performance targets were achieved." *Fiscal Year 2012 Appropriation Act.* Available at http://www.mass.gov/governor/legislationeexecorder/legislation/an-act-making-appropriations-for-the-fy2012.html. In New York City, Bloomberg Philanthropies assumed the liability of the government by providing $7.2 million to "be held by MDRC in a guarantee fund to back the loan." *Bringing Social Impact Bonds to New York City,* New York City. Available at http://www.nyc.gov/html/om/pdf/2012/sib_media_presentation_080212.pdf

bonds, said "this tool is a more expensive way to scale programs than if government simply contracted directly with a service provider."[2]

2. *The government pays only for success*

Given the additional upfront cost to the government for potential success payments and fees to intermediaries if the program works, there is really only one scenario where a social impact bond could plausibly be cheaper than direct financing: when investors pay for failure.

On a prospective basis, this means that governments should look for projects that have something close to a 50 percent chance of success. Programs that have been proven to work should be financed directly by agencies, as direct financing is substantially more cost-effective and will allow the government to capture the entire amount of any cost savings associated with the program. Conversely, if the chances of success are closer to 0 percent, then it obviously begs the question of why investors and the government would engage in a program they believe is likely to fail.

In addition to the challenge of selecting a program with something approximate to a 50 percent chance of success, the government must also have a high degree of confidence in the commitment of the private investors to realize a loss in the event that the program fails. However, the complexity and difficulty of designing a social impact bond contract may impede this goal. RAND Europe found, for example, that in Peterborough, "complexity in some instances meant that the actual transfer of risk is not clear."[3]

This complexity is inherent to the model. Attempting to manage social services through contract attorneys, consultants, financial intermediaries, and an all-or-nothing payment model based on an evaluation will inevitably produce a contract that is complex and subject to unforeseen contingencies and weaknesses.

Even if the contract is written in a way that conclusively shifts risk by the terms of the contract, this does not preclude investors (or even providers) from breaking the contract and leaving the government with the responsibility for ongoing operational costs. In fact, in Massachusetts, the investors have a formal early termination clause where they can cancel the program after two years if the program is not performing well.[4] In this scenario, the government would have incurred significant startup costs associated with designing and executing the contract only to have the program cancelled early.

[2] *From Potential to Action: Bringing Social Impact Bonds to the U.S.*, McKinsey on Society. Available at http://mckinseyonsociety.com/social-impact-bonds.
[3] *Lessons learned from the planning and early implementation of the Social Impact Bond at HMP Peterborough*, RAND Europe. Available at http://www.justice.gov.uk/downloads/publications/research-and-analysis/moj-research/social-impact-bond-hmp-peterborough.pdf
[4] *Pay for Success Contract Among the Commonwealth of Massachusetts, Roca, Inc. and Youth Services, Inc.* Available at http://hkssiblab.files.wordpress.com/2012/11/ma-pay-for-success-contract-roca-project-executed-1-7-2013.pdf

3. *A focus on outcomes will encourage innovation in programs*

Though there is a non-trivial risk of early cancellation, there is perhaps an even stronger risk that the high-stakes nature of the outcome payment will drive investors to select programs with an already proven record.

According to a paper published by the Federal Reserve Bank of San Francisco from the evaluation group MDRC: "Profit-seeking investors will be most interested in social programs or models that are proven."[5] Consistent with these expectations, according to the Center for Law and Social Policy, "investors appear to be sticking to models that have already been extensively evaluated."[6]

4. *The programs will save governments money*

Proponents argue that social impact bonds will result in decreased expenditures and thus cost savings to the state. This reduction in expenditures is necessary to justify the risk premium or "success payments" made to investors and social impact bond participants. However, pilot programs do not operate at a scale large enough to produce significant cost savings to the government.

In Maryland, for example, we used well established cost estimation techniques with our state agencies to model a potential pilot program impact. We built an optimistic model, where the program produced positive outcomes at the higher end of what is seen in meta-analytic studies. We also assumed very low costs for designing and implementing the contract and evaluation at only $700,000 (in Massachusetts these costs are approximately $2 million). Despite the highly optimistic assumptions, we found that even for a relatively large criminal justice reentry pilot program in Maryland, a 10 percent reduction of re-imprisonment for program participants would at best produce a 6 percent discount to the total cost of operating the pilot program.[7]

There are certainly some criminal justice reforms that can improve outcomes and reduce expenditures. The problem with the assumptions of cost savings in social impact bond programs is that pilot programs are just too small to have any meaningful impact on the fixed costs of government agencies. This is why an independent evaluation by RAND Europe of the Peterborough program found that the prison reentry program "is too small to deliver substantial 'cashable' savings" for the government.[8]

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[5] David Butler, Dan Bloom, and Timothy Rudd. *Using Social Impact Bonds to Spur Innovation, Knowledge Building, and Accountability*. Available at http://www.mdrc.org/sites/default/files/SIB_SFFedReserve.pdf.
[6] Lower-Basch, Elizabeth. *Social Impact Bonds: Overview and Considerations.* Center for Law and Social Policy. Available at http://www.clasp.org/resources-and-publications/publication-1/CLASP-Social-Impact-Bonds-SIBs-March-2014.pdf
[7] *Evaluating Social Impact Bonds as a New Reentry Financing Mechanism: A Case Study on Reentry Programing in Maryland.* Maryland Department of Legislative Services. Available at http://works.bepress.com/cgi/viewcontent.cgi?article=1002&context=kylemckay.
[8] *Lessons learned from the planning and early implementation of the Social Impact Bond at HMP Peterborough*

5. Social impact bonds will encourage evidence-based policy

Although discussions about social impact bonds sometimes operate under an assumption that research and evidence are unique to social impact bonds, there are vibrant communities and collaborations between researchers, practitioners, and policy makers that have existed in many policy domains for long periods of time. The addition of investors will not resolve outstanding research questions or implementation challenges.

In fact, there is a significant risk that social impact bonds may distort the research process. One lesson from the criminal justice literature is that program quality and model fidelity is often key to the success of rehabilitative programs. Even when an agency settles on a program design based on the research literature, a common challenge is finding ways to consistently operationalize the program in systems that are not always philosophically or operationally open to changes.

Though the programs that operate in Massachusetts and Peterborough appear to fit the mold of best practices suggested by an established body of research, these programs may or may not provide generalizable knowledge on how to scale their success more broadly across criminal justice systems. To the extent that these programs have additional resources or advantages—even in such non-tangible ways as heightened professional motivation from public scrutiny—they may not be so easily replicable.

The point is not to that we should be looking for the perfect program and the perfect evaluation, because that is not possible to realize. Programs operate in rich contextual environments of human society that will always create some wrinkle in our ability to precisely estimate and describe causality. The point is that one program evaluation does not make a body of research. But an overemphasis on linking the outcome to an all-or-nothing payment could easily reduce the utility of the evaluation for policymakers and future researchers.

The Hidden Risks of Social Impact Bonds

Though the purported benefits may not be as obtainable as advocates may claim, the appeal of innovation and experimentation may still attract many. It is important, however, to consider a number of significant risks to governments engaging in social impact bonds before making a decision to engage in a resource-intensive experiment. These risks have been shown to be persistent and problematic across a large number of policy domains following decades of attempts to link payments to outcomes.

Essentially, attempts to link performance to payment have been plagued by problems associated with Campbell's law, which states that "the more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor."[9]

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[9] Campbell, Donald. *Assessing the impact of planned social change.* Evaluation and Program Planning. Volume 2 (1), 1979. Available at http://eric.ed.gov/?id=ED303512.

In education, for example, the American Statistical Association has found that the use of outcome based models "can have unintended consequences that reduce quality," in part because the models are highly complex, subject to error, and generally show "that teachers account for about 1% to 14% of the variability in test scores." A focus on the outcomes that are easily measurable can discourage teachers, incentivize teaching to the test, and distract us from "the majority of opportunities for quality improvement [which] are found in the system-level conditions."[10]

Health care provides an excellent tangible example of this phenomenon. Pay-for-performance regimes have been shown to produce mixed results, with only a limited number of examples that have produced long-term sustainable improvements.[11] But there are a multitude of examples where governments have had to contend with gaming and distortions. The Centers for Medicare and Medicaid Services (CMS) has seen first-hand how a pay-for-performance program simply resulted in "pay-for-reporting" rather than a change in outcomes.

Immediately after introducing payment reductions in 2008 for preventable complications that occur during Medicare inpatient surgeries and admissions, the rate of complications for central line infections reported to CMS dropped by over 50% in a single quarter. A careful examination by researchers using lab data, however, showed that there was no meaningful change in the real rate of complications, indicating that the change reported to CMS was due to a gaming of the reporting mechanism. The incentive had no impact on quality but CMS did lose the ability to use a key data set for understanding complications during surgery.[12]

In all of these instances, the percentage of payment at risk represented less than 50 percent of the total income to the actors. Simply adding an investor will not erase these problems. Instead, there is a risk that the introduction of an investor will exacerbate the problems typically experienced as the amount of funding at-risk increases and investors assume a primary role for establishing what constitutes evidence.

These risks are substantial, but the risk that should be the most concerning is the opportunity cost of building such complex mechanisms which focus on very narrow goals and program types. Building a highly sophisticated contracting and financing mechanism to focus on one small program may impede the capacity of agencies to engage in broader policy evaluation and change.

A social impact bond financed reentry program in criminal justice, for example, depends on a system of private service delivery external to the public agency. This may be counterproductive where integration with current public programs would increase efficiency and efficacy. Reentry programming often starts in many jurisdictions at the point of entry into the prison or jail system. Creating a new system separately administered by the private sector may hamper operational

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[10] *ASA Statement on Using Value-Added Models for Educational Assessment*, American Statistical Association. Available at http://www.amstat.org/policy/pdfs/ASA_VAM_Statement.pdf.

[11] *Health Policy Brief: Pay-for-Performance*, Health Affairs. Available at https://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=78

[12] Farmer SA, Black B, Bonow RO. *Tension Between Quality Measurement, Public Quality Reporting, and Pay for Performance*. JAMA. 2013;309(4):349-350.

integration, especially if the agency were to seek to implement large scale re-organization or policy changes which could jeopardize the pilot study evaluation.

Conclusion

In short, it is my personal opinion that social impact bonds are expensive and risky. They may also distract governments from a more comprehensive, sustainable approach to improving public policy. Across a variety of policy areas, we have learned that measuring outcomes and using monetary payments to incentivize behavior change is difficult and often produces mixed results. There is no evidence to suggest that simply throwing investors into the fray will resolve the ongoing limitations and problems. Instead, they may very well exacerbate the challenges.

Thank you for the opportunity to provide testimony today. I would be happy to answer any questions.

Chairman WARNER. Well, thank you, gentlemen.

I have to tell you, I am a little surprised how the responses are lining up, if there is kind of a left to right or conservative to liberal on this. I would have actually thought that we might have had the reverse kind of opinions, because I think about many of the advocates, and, for example, in our State government we outsourced private collections and other things which kind of fell more on the traditional--would be viewed as a more conservative approach that was maybe not a social impact bond, but the same concept of a pay for performance. I would have thought there would have been maybe people more on the kind of view of the Democrats as government advocates, that this has the possibility of being much more disruptive, and consequently might have been feared more from the kind of establishment. And, so, it is curious how people are lining up.

I understand, Mr. McKay, your view that you have got to get the contracting right and you have got to have the expertise, and I would argue on some level, that would argue that—you know, we have used in Virginia, for example, a great use of public-private initiatives in the transportation field. Some of those projects work. Some of those projects, we get skinned because we do not have the expertise to go toe to toe with Wall Street. So, having some concentrated—if you are going to go down this field, you are going to have to have some level of concentrated expertise.

I would also think that one of the things that government does not do well, and one of the purposes of this panel has been how do we get more transparency? How do we push agencies to identify what is working and what is not working? And the notion of private capital coming in there, putting their, in effect, money where their mouth is in terms of trying to deliver would seem to me inherently a more market-driven approach.

So, I am going to start with Dr. Liebman, I guess. One, since this is also happening in Utah, it does not sound like it is following—it is just in more liberal States, number one. Number two, what are the general size and character of the people who are putting up the private capital? Are they generally advocates for a particular cause? What is their rate of return expected? Why do we not start with some of those.

Mr. LIEBMAN. Thank you, Mr. Chairman. I think you are right that there is not a consistent alignment between the left-right partisanship and people's interest in this tool. At the Kennedy School SIB Lab, we are working with Republican Governors in South Carolina, Ohio, and Michigan, and with Democratic Governors in Colorado and Illinois and Connecticut. I think if you know the story of the U.K., the initiative originally was the Labor Government, but just as it was leaving office, the Conservative Government said, we want to take credit for this, essentially, and has been expanding it greatly. So, I do not think there is any particular—and I think that is probably—your committee already knows this, that that interest in making government more efficient and in trying innovation is not a particularly partisan issue.

The particular projects that are being done, in some States, they knew from the beginning what issue they wanted to tackle. South Carolina knew they wanted to do early childhood education. In other cases, they knew they wanted to innovate and they started a process where they both did a public request for information to get ideas for projects from the public, and then, also, internally, the government met with all the people in the human service areas and said, where is it that we are missing opportunities to invest in prevention and save money.

And what typically happens in those processes is you end up with 35 ideas, and about half of them basically run into trouble for one of the good critiques that Mr. McKay put up. For one reason or another, they are not a good fit for this model, and you are down to about 18. And then what happens is you say, you know, we are really only going to be putting in the effort on something like this, just as Mr. McKay said, because there is an opportunity cost, if it is a top priority of the Governor or the mayor, and that whittles it down to three or four. And then you really do the hard numbers on those and make a choice about which ones to do. And part of that discussion has to do with, do you think you can raise enough private capital in that policy area—

Chairman WARNER. And who usually makes up—are the private capital usually—I do not want to use a term that would sound pejorative, but social do-gooder capital? Is it kind of—

Mr. LIEBMAN. It is about—in the U.S. project now, I would say it is about half and half. So, both in New York State and in Massachusetts, there was big commercial involvement. In the New York State one, Bank of America, Merrill Lynch basically did the total investment and then they did not keep it on their own books, they actually sold it to their high net worth individuals. And the particular high net worth individuals who got involved, I would say, are a mix of people who—

Chairman WARNER. And what was the rate of return they were looking for, if there were—

Mr. LIEBMAN. The rate of returns are in the high single digits or low double-digits—

Chairman WARNER. Let me just make one last comment, because I want to make sure everybody gets their shot here.

Mr. LIEBMAN. Yes.

Chairman WARNER. I would think—I could understand Mr. McKay's concern when it is such a large purpose as overall student achievement. But, it would seem to me that if you had a narrow focus on some of these—recidivism, or actually workforce training programs where you have way too many—and there are areas where, if we narrowed the focus, I just think this has some value. I know Senator Whitehouse, I am sure, is going to get into discrete areas in health care, which is his passion.

Senator AYOTTE.

Senator AYOTTE. Thank you, Chairman.

So, we heard a pretty divergent set of views from the panel here on the efficacy of the social impact bonds and performance bonds, so can you help me understand. The example that was given in Massachusetts, the $12 million is really the investment given, and then a $27 million cost to the government. Why is that, and how would you contrast—I am not sure what they were doing in Massachusetts in terms of what the performance measures were or what they were trying to accomplish, but how does that compare to—in terms of rate of return and how much the taxpayers are paying versus what is invested, compared to some other projects you would deem more successful on this side?

So, I want to hear the sort of side first on how do you get in this situation, because that does not seem like a good value to me, as you describe it, and why do you think that that ends up being the way it was in Massachusetts, whatever they were trying to accomplish. And then, also, you are being an advocate over here. I would love to hear some examples of where you felt that there was a value to it, that there was a cost savings, that there was a contrast to what they are presenting over here, I mean, because, ultimately, if it is going to cost us more to do this, then I do not see a value in doing it. So that is an issue I am trying to get at.

Mr. MCKAY. Yes. So, the government does not know in advance whether or not it has to make an outcome payment, and in an operating budget, it is not a good idea to create a speculative debt instrument or a contingent liability without budgeting for the potential of making that payment.

So, in Massachusetts, I put a reference to the appropriations bill in my written testimony where it basically shows that, each year, the government has to appropriate in advance of each year that the program operates, before they know whether or not the outcomes have been demonstrated, and because they may have to make a payment that includes a return on investment to the investors and the service providers, the government has to budget more money than the investors are providing. So, that is why the government is liable for up to $27 million worth of payments but they are only getting $12 million from investors.

Senator AYOTTE. So, what is your counter to that, because, obviously—

Mr. MCKAY. I do not know—

Senator AYOTTE. —you are probably familiar with the project, because you—

Mr. LIEBMAN. Absolutely. We were involved in the Massachusetts project. I do not think Mr. McKay is giving you the right perspective on that project. Basically, what is happening in the Massachusetts project is about 90 percent of the funds are going directly to deliver services and there is maybe ten percent that is going to things that you might call extra costs because we are using this model, but those are things that would have value.

So, for example, the fact that it is being rigorously evaluated costs some money, but I would say spending two or three percent of the amount you are spending on a project to find out whether it works or not so that if it does not work, you can stop spending money on it, that is a bargain.

And, similarly, the intermediaries that are helping to manage the project and bringing private sector expertise into the project, and, frankly, more human capital into the project than the government has on its own side, typically, they are adding two or three percent to this project, but they are also delivering value and—or, at least we are going to find out. If the project works and we suddenly are getting much better results than we have had before, then we will know this model is working. If it does not give us good results, the taxpayers do not pay and we should not be doing any more.

Senator AYOTTE. Can I ask you a question? So, when a project is undertaken, you have to have some expertise on the government end to be able to manage this kind of project, because I know that Mr. Fisher has talked about the complexity of the projects as a challenge on the government end. So, as we look at sort of resource efficacy, when you are undertaking this type of project, are you actually saving resources on the government end? So, in other words, you are getting an influx of resources on the private sector end, but limit resources and what we can spend our hours on on the government end also. Are you then saving the work done on the government end? Or are we putting in the same amount of work on the government end and then also investing in the private end?

I do not know if I am asking this question properly, but thinking about all the things we could spend our time on, if we are spending the same amount of government time and also investing the private time and then we are paying more, that is what I am trying to get at, is are we actually leveraging—what does it take in terms of resources to manage this kind of thing on the government end?

Mr. FISHER. Okay. Should I answer that? I would also like to just say something about the resourcing issue. I mean, we—our Innovation Fund, which are these ten social impact bonds for kids' disadvantaged education, we are putting 30 million pounds in to pay the returns. Investors have put ten million pounds up front. But, the 30 million is not a net cost to the taxpayer. If this works, the saving to the taxpayer in the longer run exceeds 30 million pounds, even on a discounted basis. So, there is a net saving to the taxpayer for doing this. The risk is that we have not got those calculations quite right. There is a quite large margin of error in that.

On the resources we put in, the resources, basically, are resources actually of my own team. We ran this—I have got about three people running this scheme on an ongoing basis and there was a commercial team of about ten who actually did the contracting at the point in time when we actually had to let the contract. So, these were not hugely resource intensive as far as the public sector was concerned. I think they can get resource intensive. Here we are talking about one single scheme, you know, just one single scheme, which goes to the importance of doing them at reasonable scale.

So, if you do them at reasonable scale, A, it helps the commissioners, in this case, the Department of Work and Pensions, and it also helps the investors, because one of the biggest bits of feedback we had from investors were they did not like putting a cost-benefit on their side for one small scheme in one place. They like to see scale. So, I think scale is important, if that is helpful.

Senator AYOTTE. Thank you. Thank you.

Chairman WARNER. Senator Whitehouse.

Senator WHITEHOUSE. Although there is some disagreement on the panel on a number of issues, there seems to be agreement on two points that I would like to confirm. One is that it is possible for a State, a government, to get in over its head if it has not chosen the program wisely and then the investors know more about the project than the government does and they start to get spun because the investigators have a different motivation. That is a risk. Everybody concedes that?

[Witnesses nod.]

Senator WHITEHOUSE. Yes, everybody concedes that. Okay.

The second is that there appears to be a common understanding that there is, or may be, a value during what you might call an innovation period for bringing in private capital to do something. But once the model has proven itself, assuming the model has proven itself, then you should move that capital on to other innovations and not leave it in that area because it is less efficient to run a program with private capital that has to be paid than simply to do it through regular government services. Is that also agreed by everyone?

[Witnesses nod.]

Senator WHITEHOUSE. Yes, with one hesitation from Mr. Fisher one, Mr. Fisher the first. Go ahead.

Mr. FISHER. Should I just say something about that? I think the fundamental principle is possibly right in the sense that, for example, if our ten social impact bonds work, then—

Senator WHITEHOUSE. Why would you go back to have more investors do it—

Mr. FISHER. Government does have choices about what it then does. It might simply decide, aha, we have—we are simply underinvesting in children's education at that time in their lives and there are then other ways of addressing that issue.

On the other hand, the benefit of the social impact bond is you have schools and voluntary community sector bodies doing the work on the ground as opposed to state employees, which it may well be a positive. And, also, you do have the discipline of the investor working with a charity and there is a benefit to that, too. So, this is one of the issues that we—

Senator WHITEHOUSE. I guess my theory is that the innovation that is sponsored by the social impact bond, if it proves itself, will then naturally migrate into policy, and once it has migrated into policy, it no longer needs a social impact bond to support it. It just becomes the way the system works. And investing in the trial to try to make that move is what makes sense. Do I have agreement on that?

Mr. MCKAY. Yes. I would add one thing, which is that the Center for Law and Social Policy, they just released a report where they looked at most of the social impact bonds that have been implemented to date and what they found is that, quote, "investors appear to be sticking to models that have already been extensively evaluated," which is sort of consistent with what you would expect if investors are trying to minimize their risk.

Senator WHITEHOUSE. But, that does not necessarily dispute my proposition, because this is Congress. We have lots of things that have been consistently evaluated and most people of good sense and good motivation believe them to be true. And yet, for a variety of reasons, we cannot get them done in Congress. There is politics involved. There are scoring issues with CBO involved.

There are hazards—just because something has been evaluated, I think it is, frankly, good if something has been well evaluated, private capital comes behind it, they move that evaluated practice into government in a way that probably makes them money and shows that this is a savings technique, and then, boom, we have proven the proposition and it is way easier to pass that reform because, frankly, you might even find from CBO you have got some savings that they will now document based on that government experience. So, I take your point, but I do not think it rebuts the, at least the window of utility that I see this potentially having.

Dr. LIEBMAN.

Mr. LIEBMAN. Senator, I think your premise is 95 percent right. The one thing I would add is, often, when we evaluate something, we do a single snapshot that tells us something worked in one location 15 years ago. And an important feature of the social impact bond projects is it gives you ongoing, real-time assessment of how things are performing.

Senator WHITEHOUSE. Yes.

Mr. LIEBMAN. And if the conversion from the social impact bond back to traditional government funding loses that ongoing monitoring and learning, things could be changing so that the program is no longer as effective because circumstances are different or how it is being implemented and we might not know.

Senator WHITEHOUSE. Got it.

Mr. LIEBMAN. And so—

Senator WHITEHOUSE. You can flub the transition—

Mr. LIEBMAN. Exactly. So, government has to learn not only—

Senator WHITEHOUSE. —or we might never have gotten to that transition—

Mr. LIEBMAN. Exactly.

Senator WHITEHOUSE. —if you did not have the social impact bond in the first place.

Mr. LIEBMAN. You have got it.

Senator WHITEHOUSE. Okay. You seem to have agreement there. I would ask you guys, if you do not mind, this is a question for the record, but it is an option one. If you have other things to do, do not feel obliged. But if you do, I would be interested in having you reflect a little bit on our health care system. We run the most disgracefully wasteful health care system in the world, probably by a factor of 50 percent, maybe more. Norway and Switzerland are the two most expensive health care systems in the world per capita. We beat them both by 50 percent. And we do that leaving a lot of people uninsured. We do that leaving hundreds of thousands of people dead from hospital-acquired infections and other medical errors. If you want to find a place where there is room for improvement, take a look at the American health care system.

So, if you have any ideas about what might be good points of entry, because what we find is it is very hard to get anything scorable until it is up and running, and then by then, they tend to have kind of built it into the baseline, and so the government support for innovation is challenging at the legislative level. So, that is my QFR, and thank you, Chairman. My OQFR, optional question for the record.

Chairman WARNER. Senator King, who has also been a leader, as a former Governor, in trying new things.

Senator KING. Thank you. I am—

Senator WHITEHOUSE. Is his State as well managed as Virginia?

Senator KING. I am trying to think this through, and I have a radical idea. Instead of contracting out and social impact bonds and everything else, why does not government try to get it right? I mean, this whole scheme—I take your term—is a gigantic admission that government cannot do stuff, and I think that is a valid criticism. But, to me, the answer is not to go through—the only thing government does worse than execute programs is execute contracts. That is—and I know that as a Governor. This whole idea of contracting out is the worst of both worlds. It costs as much or more and you lose accountability and control.

I just—I do not get this at all. I think this is an admission that government cannot do what it is supposed to do, and I think it is an admission that we, as political leaders, generally pay more attention to passing the bill than executing it. In my view, execution is as important as vision, and this is an admission that we do not do that, and I think we ought to start doing it. And instead of the contract holding the contractor accountable, how about the President or the Governor holding the Superintendent of Schools accountable?

This just strikes me as—it is a fancy way of contracting out, and as I say, I do not believe government contracts very well. And defining the outcomes are going to be very difficult and they are going to be—and it just—I am just—why does the President not pay for results, you know. I mean, Mr. Liebman, what do you—I just do not get this.

Mr. LIEBMAN. Yes. I think—

Senator KING. I come to this unburdened by knowledge, by the way, which is—

Mr. LIEBMAN. No, I think you are onto something here, which is that if government—a lot of the things being accomplished by this model could in theory be accomplished if government operated the way we wish it operated. But, in fact, it does not. We have been trying for years and years to get it to do a lot of the things like measure outcomes and allocate resources to things that work and it is not. And what people are finding in these State governments is that this is a leadership tool that is allowing Governors and State Budget Directors to shake things up and actually get people to do the things that, you are probably right, they should be doing anyway, but we cannot get them to do anyway. And so let me give you—

Senator KING. But, you are inserting a whole level of cost, of consultants and analysts, and the government is always going to be outfoxed on the contracts, in my experience.

Mr. LIEBMAN. I do not think that is what we—I mean, my role is to give pro bono assistance on the government side so they do not get outfoxed, so maybe I do not have the completely neutral view on this—

Senator KING. Pro bono is good.

Mr. LIEBMAN. Yes, exactly. But, here is an example. In one of our States, we put a bunch of options in front of a State Budget Director for a social impact bond, and one of the options was that there was an intervention, which was a health care intervention, where they thought that if you put caseworkers in senior centers, making sure that people took their medicines and made it to their doctors' appointments, you could save on Medicaid costs down the road.

And we put this on the table as a potential social impact bond project and the State Budget Director said, "Can I not just put this in the budget?" And we said, "Yes." And he said, "Done." And that is great. If social impact bonds cause that to happen and we do not do social impact bonds, that is just as good. I mean, what we need to do is shake things up and have those kind of conversations such that this kind of innovation happens.

Senator KING. Yes. Okay. Any other thoughts?

Mr. FISHER. If I may, I think your premise is entirely right. I mean, just another example. I think when we evaluate the social impact bonds for disadvantaged school children, we will find that we may well prove the fact that the taxpayer is simply under-investing in this particular part of the system, and if schools and the taxpayer invested more in disadvantaged children, that might also achieve the benefit. We might find other practical things, too.

But, the point is, at the moment, that is not happening at the moment for various reasons. Too many children in our country are turning 18 and going straight into welfare. That is happening because that part of the school system is not working well enough to address that issue. So, this does give a boost to a particular problem at a particular point when something can be done about it.

But, I do want to agree, in the longer run, it may not be the right answer to that particular social problem. But, in a short transitional way, it can be a really helpful boost, and it may well be, also—the evaluation might prove this is also a more efficient way of spending this particular money for results than, you know, just giving the money to schools. I mean, there are a number of ways which will come forward in the evaluation. So, the jury is slightly out, I think.

Senator KING. Well, I understand what you are saying, but it just seems to me that a good administration would say, okay, we have this problem and we need to do some pilots in different cities and see what works and then go from there. In other words, the same result could be achieved without the complexity. I mean, the only way this works in terms of the taxpayers is if the funders take a substantial risk of not getting paid. But if they take that risk, their risk premium is going to be so high that it cannot—it really cannot work out for the taxpayers very well.

I am a great believer—for example, in terms of the Federal Government funding education, I do not think the Federal Government has a big role in funding education. I think what the Federal Government ought to be doing is funding pilot and experimental programs and then disseminating the results across the country and finding out what works. If somebody really found a great way to teach social studies in Boise, Idaho, the Federal Government can have an important role in acting as a clearinghouse so every other school district in the country does not have to reinvent that program.

But this, the idea—I mean, I just, like I say, I think we are essentially throwing up our hands and saying, government cannot do it right, so we are going to try something else. It may be more expensive, but what the heck. I just—

Chairman WARNER. Everybody is going to get another bite at the apple very quickly, but let me just quickly try to respond. Again, everybody is surprising me here this morning in terms of where I thought they were coming from, because I spent a lot of time in the private sector. We created, for example, in greater Washington something called the Venture Philanthropy Partners to try innovative models on delivery of services for at risk youth in greater Washington, a very cool project.

We had a series of initiatives. What we did not have was common evaluation across those. What we did not have was the ability to say, since we did not have the common evaluation, how do you take to scale? And I guess that in enormously constrained budget times, my fear is that—you cannot take a dollar away from any school right now, because, oh my gosh, that is going to cause a huge decrease in services, or we cannot try any innovation at all, and this may be a tool to leverage innovation—and I think Mr. McKay and Delegate Fisher put forward some good points—if the project is too big—we are going to solve all of K–12's problems—I would have some qualms about that. Mr. McKay's questions about the ability to contract and evaluate, but we do not do a very good job on that, as well.

If there is some private capital in there, there is discipline, I think, that private capital brings on evaluation that maybe we do not have on the public capital side, and this may be a way to leverage, more experimentation, and if it is done within this kind of—some upside model, and I agree with Sheldon that if it proves out, then it ought to become governmental policy. But it would seem to me this would be a way to leverage more ideas and perhaps have the common evaluation standards that we lack.

The votes start in about ten minutes, so this is going to turn into less questions—

Senator WHITEHOUSE. Mr. Chairman, the one point that I would add on what you said is that one of the things I do not think we do very well in government anywhere is the prototyping function, and it is even harder to do a prototyping function when it costs money and you are trying to go into an existing budget and compete for funds that are already being used. So, you can facilitate the prototyping function if you can find other capital to kick it off.

I would also expect that private capital would bring a business perspective to their provision of funds that could be actually a helpful defense against prototypes, so-called, that are, in fact, driven by ideology, or loyalty to an interest group, or some of the other things that kind of infect politics. So, you might actually find value in it as a screener of really bad ideas that nobody would put money behind, but in our political world could get momentum because an interest group or a lobby group or an ideology selects them. So—

Chairman WARNER. One of the things—

Senator WHITEHOUSE. —anyway, I think this has been a great hearing—

Chairman WARNER. Well, let me let Senator Ayotte get the last word, and if any of the panelists want to, too. I do not know how we get enough kind of venture capital ideas into government. This would seem to be a way.

Senator KING. How about by the leaders of government doing it? I mean—

Chairman WARNER. But you also know, as a Governor, there is always that resistance. Trying something new in today's constrained environment, since there is no new capital, means you have got to take something away from an existing initiative. And, when we think about evaluation, I remember—the last point I will make and then turn to Kelly--is that when I was Governor, we tried something that said, at some national level, we spend billions and billions of dollars on education, yet our evaluation budget in education on a nationwide basis is less than one percent of the dollars we spend on education. From any business background, that is a stupid basis going forward.

Kelly.

Senator AYOTTE. Kelly is fine. You know, I really have to agree with the comments of Senator King, because as I sit here and I think about this, we have—what we do very little of in government is actually measure the effectiveness of the programs. And rather than eliminating a program that has never achieved a result, we just keep adding the layers on instead of saying, you know, make the call. It has not gotten a result. We have not gotten achieved what we needed to from it, so we need to do something different.

So, I think that we need performance measures on the government programs, and also, you know, I think that phrase that Ronald Reagan once said, there is nothing closer to eternal life than a government program, I mean, we have got to get beyond that, because I see why the private sector innovation in terms of looking at new ways to do things and more measurement-focused ways of what comes from these proposals is so critical. It is just that, I agree, this is what we need to work on as leaders, to do things differently. Thanks.

Chairman WARNER. Does not private capital bring some of that discipline? Everybody, we have only got a couple more minutes, but if everybody, and we will start with Mr. McKay and go in reverse order this time, if each of you want to make kind of a closing out—

Senator WHITEHOUSE. Final sentence.

Chairman WARNER. —final minute comment apiece, or minute and a half—

Mr. MCKAY. Sure—

Chairman WARNER. And thank you all.

Mr. MCKAY. I guess the thing I would add is that you need to be really careful that the investors are bringing a discipline that is valuable to the government, because if the investors are telling the government what it should already know to implement programs that have already been proven, then you are going to privatize the savings of that program to the investors. And so if you are going to go down this path, you really have to make sure that there is a substantial risk that the investors bear in piloting a program that has not already been proven to work. But what we have seen so far, according to several analysts, is that most of the programs are focusing on things that already work, or we know already work, because investors do not want to take that large of a risk in a pilot program. Thank you.

Chairman WARNER. That would mean that you are really defeating—the investor is not willing to be the tip of the spear on experimentation. I think your premise is right.

Delegate Fisher.

Delegate Fisher. Yes. Thank you, Mr. Chairman. Senator King said something, I think, that I have seen in Maryland that really kind of underscores the problem, and that is, is that coming from the private sector and serving just my first four years in Annapolis, it is remarkable how poor government negotiates contracts, and that expertise is needed now more than ever. You know, in Maryland, it is not a secret about our health care exchange. I mean, we are going to scrap our quarter-of-a-billion dollar health care exchange and adopt Connecticut's.

But, notwithstanding that, I have always admired Virginia's P3 idea on highways and even put in legislation to try to outsource Maryland's Welcome Centers and Maryland's rest stops. But, the problem in Annapolis is that is completely against the institution to try to outsource those. There is no contractual knowledge in the bureaucracy to know how to do those kinds of contracts, and as a result, when we have done that in Maryland, when we have engaged in these kinds of outsource projects, they have, unfortunately, not done so well, and that is my primary reason. So, thank you.

Chairman WARNER. Are you mentioning Virginia, the nationally best managed State in the country? Is that the one you are—

[Laughter.]

Delegate Fisher. Well, it—

Chairman WARNER. Started by a certain Governor.

Delegate Fisher. Yes, Senator, and Maryland losing $5.5 billion of taxable income, so I actually agree with you.

[Laughter.]

Chairman WARNER. The only thing is, we have not always got it right, and it is one of the challenges. When we think about P3, though, and one of the reasons, again, off topic a little bit, but I think there needs to be a—since we have an office in the Treasury Department that advises American pension funds how to invest in Europe, because we do not have the expertise in America to go toe to toe with Wall Street.

Mr. Fisher, you have come a long way, and then Dr. Liebman.

Mr. FISHER. All I would add is that our schemes are being fully evaluated. We are spending over a million pounds on evaluation of the ten social impact bonds we are running. That evaluation will, I think, help answer some of the questions about, you know, is this better value than alternative ways of spending the same amount of money? Have we got the calculations right? And, obviously, we will share those observations with colleagues here as they emerge, because I think this is a debate that will run and run, actually, and I think some schemes are going to be more effective than other schemes.

The only thing I would finally say is, to me, the key is, if we are going to make a success of this, we have to keep these things relatively simple. I think there are quite a few social impact bonds out there which, in my humble opinion, are simply too complicated.

I think if these are getting any traction at all, keeping the models basically simple is going to be quite important.

Mr. LIEBMAN. I think the bottom line here is we have about a dozen Governors from both parties that are finding this tool useful for breaking through the political, financial, and bureaucratic obstacles to doing the kinds of reforms, the venture capital and prototyping activities that you described. And they are coming up with projects that are going to produce Federal savings, particularly through Medicaid, and unless the Federal Government partners with those innovators, the projects are not going to happen. And so whether or not you think this is the perfect tool or the only tool to change government, we have this opportunity right now. We are on the ground and people are trying to innovate and they need some Federal help. And so I hope your Task Force will think hard about whether you can partner with these States that are trying these things on the projects that have these Federal payoffs.

Chairman WARNER. Can you get us data on the status of those 12?

Mr. LIEBMAN. Yes, absolutely.

Chairman WARNER. And then, colleagues, last word, anybody?

Senator KING. I want Mr. Fisher to realize that we are not the same as the House of Lords.

[Laughter.]

Senator KING. Welcome. We are delighted that you came, and thank you very much, all of you. This is a very interesting discussion, and I think provocative and very helpful. Thank you.

Senator WHITEHOUSE. I agree. This has been a very useful discussion. I thank the Chairman and the Ranking Member for holding it.

Senator AYOTTE. Thank you. I appreciate it, and I look forward to further discussions from this. So, I think we all share the same goal. We want government to actually achieve things in a measurable way and the most cost effective way, so thank you.

Chairman WARNER. I believe this is the first time this subject has been raised at the Federal level, so you are getting first impressions, and again, I think it has been very curious. On the traditional ideological front, I would have expected almost the reverse, so I think that is provocative, as well, which I am—so, if you have got more information, if you have got more data, help us.

I do think Dr. Liebman's point that if there is real value savings, but because of the State-Federal match on Medicaid, States are not doing it because there is not that ability to kind of garner savings on both sides of the ledger, that is a bad business proposition. Now, you have got to prove that there is a savings, but that might be an area, and Sheldon left already, but I know he is passionate about.

I think all of us—I do not want to be presumptive here—we are open to ideas. This group, by virtue of being on this committee, are willing to be a little more disruptive. I think we all realize there is a lot we can do better, and we are going to be in constrained times. And with $17 trillion in debt going up $4 billion a night, you know, if we do not find a better way, we are really up the creek. That is a technical political term.

[Laughter.]

Chairman WARNER. With that, the hearing is adjourned.
[Whereupon, at 11:18 a.m., the committee was adjourned.]

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MEMORANDUM April 11,2014

To: Senator Jeff Sessions

From: Jane G. Gravelle, Senior Specialist in Economic Policy, 7-7829

Subject: **Response to Follow-Up Questions**

This memorandum responds to two follow-up questions from the April 8 Senate Budget Committee hearing on "Supporting Broad-Based Economic Growth and Fiscal Responsibility through a Fairer Tax Code."

Question 1. Your written testimony identifies your estimate, which you say is based on Joint Committee on Taxation projections, that "a tax increase equal to 0.45% of output would increase GDP by 0.5% in the long run (30 years)." Please describe how you arrive at your estimate. Please, also, identify whether further extrapolation would lead to the conclusion that a tax increase of 4.5% of output would increase GDP by 5% in the long run (30 years) and, if not, why not.

Answer: The estimate with debt service was taken from a JCT growth model that can accommodate crowding out effects.[1] While the study was done by JCT, their method would have been to simulate supply side responses of labor and savings to the changes in tax rates (which would reduce output), but add to that simulation the effects of reduced crowding out (displacing private investment with deficits). To incorporate these effects they would add some portion of the deficit reduction to the capital stock (some portion likely flowed abroad) which would increase the capital stock. The next year, another addition to the capital stock would occur. This effect would continue year after year. This increased capital stock would eventually offset the supply side effect and outstrip it because it grows continually, while the supply side effect is a one-time change in levels of output.

I used the JCT result which assumed that the Federal Reserve offset any contractionary effects, since these effects would be temporary, depend on the state of the economy, and would occur with spending reductions as well.

You also asked whether you could increase the 0.45% tax cut to 4.5% and project an effect of 5%. Although production functions are raised to a power, for small changes of this type a linear extrapolation would be reasonable. Thus a 4.5% tax increase would be projected to increase output by approximately 5% after 30 years.

[1] Macroeconomic Analysis Of Various Proposals To Provide $500 Billion In Tax Relief JCX-4-05, March 01, 2005, https://www.jct.gov/publications.html?func=startdown&id=1189.

Question 2: In your oral testimony, you argued that "macroeconomic estimates" ought not be used, since the economics profession seems not to know enough to make such estimates. Indeed, you stated that we "cannot get reliable estimates for macroeconomic effects." However, both the Congressional Budget Office (CBO) and the Joint Committee on Taxation (JCT) have, can, and will provide "macroeconomic estimates" of effects of large-scale proposals to alter taxes, expenditures, or other policies such as immigration policies. Do you believe that estimates of macroeconomic effects of alterations in tax, spending, or other policies produced by CBO and JCT are not reliable and therefore should be entirely discounted? Is it the official position of the Congressional Research Service that, given the state of knowledge in the economic profession, we cannot get reliable estimates for macroeconomic effects of tax, spending, or other policies? If not, what is the official position of the Congressional Research Service with respect to the utility of "macroeconomic estimates" produced by the CBO, JCT, or private-sector analysts?

Answer: The effect of tax changes depends on the type of effects incorporated, the measurement of marginal and average tax rate effects, the type of model, the embedded behavioral responses, and the time frame. CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle, outlines these effects and cites numerous studies and sources that show variability in the results of macroeconomic analyses. As this study notes, savings and labor supply responses can be in either direction, although the empirical research indicates the behavioral responses are small.

There has, however, been considerable variation in projected effects. As a recent illustration, the macroeconomic analysis of Camp draft tax reform proposal by the Joint Committee on Taxation (JCT), found increases in GDP for the first five years ranging from 0.1% to 1.8%. The 1.8% result is 18 times as large as the 0.1% result. The large estimated effect appears to come, in part, from a recent innovation to the model by the firm that constructs the intertemporal overlapping generations (OLG) model leased by JCT. To my knowledge, this private sector model change has not been subject to review by economics professionals outside of JCT. The 0.1% effect comes from the JCT's in-house neoclassical growth model, and is the equivalent of a one-time increase in output of about two weeks of normal growth which is, for practical purposes, not different from zero.

The following is a brief review of the sources of variation in results in macroeconomic models.

First, there are three different types of effects to consider: aggregate demand effects, crowding out effects, and supply side effects. The first two effects work in opposite directions for a tax cut or increase. There are some strong arguments against including the first effect for considering permanent tax policy.

Second, it is important to measure effective, not just statutory, marginal tax rate changes. If a reform increases the share of income taxed at the margin, the effective tax rate increases. Thus, disallowing itemized deductions raises the marginal effective tax rate. Based on information provided to the public, it does not appear that the measurement of effective marginal tax rate in the JCT analysis fully incorporates these effects. If they were, it is quite possible that the tax reform they analyzed could contract rather than expand output.

Third, the effects vary depending on whether a neoclassical growth model or an intertemporal model is used. Intertemporal models involve strong assumptions of foresight and certainty by individuals, rather than relying on empirical estimates of responses. Intertemporal models generally include only supply side responses.

Fourth, the strength of behavioral responses can differ (and have differed) within models. Modelers constructing intertemporal models do not appear to conform their behavioral responses to the empirical data and there can be significant differences. For example, until recently, the labor supply response to a permanent marginal tax rate change was four times as large in the CBO OLG model as in the OLG model used by JCT. CBO has lowered their response recently, and JCT increased their responses but there is still a gap of 0.1 and 0.4 between the various assumptions in CBO and JCT models of both types. That means the response to a simple supply side reduction in response to marginal taxes on labor will be four times as large in one model as in another.

Finally, the results will vary over time. As is the case of revenue estimates, the effects may be different outside the budget window.

The Congressional Research Service as an institution does not take official positions on policy matters; the analysis of their researchers is incorporated in CRS reports.

Answers to Questions from Senator Johnson

Question 1

Governing involves choices. I do not believe that providing a tax reduction for the very wealthy is a wise choice at a time of extremely high inequality in both income and wealth. The resources that would be devoted to such a tax reduction should be used for other proposals. One example is the 21st Century Worker Tax Cut Act, introduced by Senate Murray, which would provide assistance to working families with children.

Question 2

This may surprise you, but I think that the long-term impact (beyond the 10-year budget window) of spending proposals should be considered just as the long-term impact of revenue measures should be. I just think that relying on the 10-year window to assess tax reform while using long-term projections to urge cuts in entitlement programs is at best inconsistent.

Answer to Question from Ranking Member Sessions

I think that during the hearing you and I agreed that the most serious challenge facing this country is the lack of domestic employment opportunities. Given globalization, I think we have a long-term challenge in providing quality jobs for our workers.

The models used by the Joint Committee on Taxation assume equilibrium of supply and demand for labor and capital. That does mean that they assume that there is no such thing as involuntary unemployment or unused capital. According to a description of the OLG model published by the JCT, the OLG model assumes that supply equals demand in every period, an assumption that we know is incorrect. The MEG model acknowledges the possibility of temporary periods of unemployment, but it assumes that prices will adjust (that is wage rates will fall) to bring supply and demand for labor into balance.

Those assumptions of equilibrium essentially assume that the economy is operating at full capacity and are critical for projections of positive growth from tax policy changes designed to increase labor supply. Increased supply of labor can result in greater growth only in the case of an economy operating at full capacity. Otherwise, the increased supply of labor will only increase levels of unemployment.

My problem with the JCT models is not that they would fail to accurately assess the economic impact of tax reform. In my mind, that is a given since those models have never been accurate in the past. The real problem is that they could facilitate a tax reform that could worsen the lack of job opportunities in our country.

According to the JCT macroeconomic analysis of the Camp tax reform plan, it "is expected to increase the cost of capital for domestic firms, thus reducing the incentive for investment in domestic capital stock". As a result of those reduced incentives, the MEG model concludes that in the second half of the budget window the Camp plan would reduce domestic investment capital under each of 6 different assumptions.

I believe that a tax reform plan that reduces domestic investment capital is the wrong way to respond to our employment challenge. I would like to think that is another area where we could agree.

Dear Senator Sessions,

Thank you for inviting me to testify. In discussions of inequality, many people, such as Professor Thomas Piketty and the International Monetary Fund, use pre-tax, pre-transfer measures of income based on tax units. As my Manhattan Institute colleague Scott Winship has discussed in Forbes, tax units are poorer than households.[1] The income measure does not measure well-being, because it does not include money paid in taxes or given back in transfers.

This concept of income is far removed from reality. The top one percent paid 35 percent of all federal individual income taxes in 2011, and the top half of earners paid 97 percent. The bottom half of earners paid 3 percent, and received back a share of the 97 percent paid by the top half for programs including Medicaid, food stamps, the earned income tax credit, housing vouchers, and unemployment insurance.

The idea that inequality can be measured by income irrespective of taxes and transfers makes little sense. Many economists, such as University of Chicago professor Bruce Meyer and University of Notre Dame professor James Sullivan, have included taxes paid and transfers received and computed measures of inequality of consumption, a more realistic guide to well-being. They concluded in a series of papers, including one for the Brookings Institution, that consumption inequality has not increased and that poverty, while not cured, is declining.[2] In addition, Cornell University professor Richard Burkhauser, has published extensive research concluding that using different measures of income dramatically reduces observed income inequality.[3]

[1] Winship, Scott, "Whiter the Bottom 90 Percent Thomas Piketty?" and "Is Inequality Growing Out of Control?," Forbes, 2014.
[2] Meyer, Bruce D. and James X. Sullivan, "Winning the War: Poverty from the Great Society to the Great Recession," Brookings Intuition, 2012.
[3] Armour, Philip, Richard V. Burkhauser, and Jeff Larrimore, "Levels and Trends in United States Income and Its Distribution A Crosswalk from Market Income Towards a Comprehensive Haig-Simons Income Approach," National Bureau of Economic Research, 2013.

HM GOVERNMENT RESPONSES TO RANKING MEMBER SESSIONS QUESTIONS FOR THE RECORD, 1 MAY 2014

Costs of Social Impact Bonds

During the hearing it was asserted that when assessing the total cost of a social impact bond we should consider the savings generated by reductions in a social ill. In particular, witnesses cited the savings generated from fewer persons imprisoned as a result of a social impact bond.

1. When calculating cost savings from a social impact bond, is it more appropriate to use average or marginal cost?

   How the cost savings from a SIB are calculated depends on what the analysis will be used for. If the focus is cashable savings the commissioner may want to consider only the marginal cost as this will be a truer reflection of cashable savings. On the other hand, if the focus is economic value then an average cost may be more appropriate.

2. What is the marginal cost savings for each fewer prisoner incarcerated?

   The marginal costs of incarcerating someone vary depending on factors including the prison, the area, and the security level. However it is likely that there are low marginal cashable savings associated with small reductions in people incarcerated in a prison.

3. How large a reduction in prison population would be required to reduce fixed costs?

   The size of a reduction in a prison population required to reduce fixed costs will depend on the prison and its operational requirements. However, in order to generate savings that are cashable it is likely that a substantial part of the prison would need to be closed (and possibly used for something else).

4. If a social impact bond was structured with sufficiently high social goal that the government would realise savings equal to or greater than the cost of repaying the private investor, do you believe private investors would put their money into these SIBs?

   Investors will take a view on investing in SIBs on a case by case basis and in line with their own investment goals and risk appetite. At a minimum, however, the risk adjusted return on an investment in a SIB would need to be above the cost of the intervention and the minimum required financial return.

Social impact bonds are often structured so that governments pay back investors as a function of the programme's success. For example, the government will make payments to investors equal to X percent of the cost of providing special education classes for year a student what was predicted to need these classes does not.

5. Does this create an incentive for programme administrators to overestimate future potential cots, in this example, for instance, identifying a child who would never need special education as one that would?

   As with many policy interventions, it is possible that perverse incentives will be generated in a SIB. These must be considered in the design of the SIB and appropriate measures put in place to *mitigate them. For example a robust counterfactual or baseline should give an indication of what demand for a service might have been in the absence of an intervention.*

One of the assumptions about social impact bonds is that they shift risk from the government to the private investor.

6. Is there evidence to suggest that private investors have higher tolerance for risk in public programmes than government?

   SIBs are a new policy tool and as such there is relatively limited evidence about them. What can be said, however, is that so far government and private investors have been able to agree a price for a given risk which satisfies both parties, which suggests an efficient transfer of risk.

7. If a few social impact bond programmes fail to meet their goals, resulting in losses to investors, do you think future investors would be more hesitant toward social impact bonds?

   a. Would investors demand higher return rates to invest in a SIB?

      If some SIBs fail to deliver results investors may begin to see them as a risky investment. However, whether a SIB succeeds or fails may well be as much about the intervention used as the SIB structure itself. If SIBs are used to test innovative interventions both investors and government must be prepared to accept some level of failure. In an ideal world evidence on what is effective and what is not would feed into future investment and commissioning decisions.

   b. Are you aware of a social impact bond that has failed?

      SIBs are a new policy tool and so are at too early a stage for any to be said to have succeeded or failed. Early results from the Peterborough SIB are promising: reoffending among short-sentence prisoners receiving support through the SIB has fallen by 11% while nationally that figure has risen by 10%.

QFR Response of Kyle McKay

5.1.14 Social Impact Bond Hearing, Government Performance Task Force, U.S. Senate Budget Committee

1. When calculating cost savings from a social impact bond, is it more appropriate to use average or marginal costs?

The Vera Institute of Justice has an excellent primer on estimating cost savings in criminal justice entitled "A Guide to Calculating Justice-System Marginal Costs." According to Vera,

> *It is impossible to overstate the importance of using marginal costs in a [cost benefit analysis].... "Marginal" does not mean small or insignificant. It means at the margin of an existing level of operations and describes the cost or benefit that will be realized because of changes in units of activity. In the context of the criminal justice system, the marginal cost is the amount of change in an agency's total operating costs when output (such as arrests, court filings, or jail days) changes because of changes to policies or programs.*

The figures shown and the approach in the Vera paper are similar to those used in Maryland. The short-term marginal cost savings associated with a reduction of one prisoner are approximately $5,000 per year. This amount is substantially lower than the average costs, commonly between $30,000 and $50,000 per person per year, because the fixed costs associated with buildings and payroll can only be reduced with large reductions in prison or jail populations. Additionally, higher long-run marginal costs which account for some fixed cost reductions may not be appropriate for a small pilot program, as a cohort based analysis typically shows a gradual rise and then decline in impact as the program winds down—indicating that the greatest reduction in prison or jail beds is not sustained for a long period of time.

This is the primary reason why the social impact bond study conducted in Maryland showed that a pilot program would be too small to produce meaningful cost savings to the government and the RAND evaluation of the Peterborough pilot program concluded that the program was too small to produce savings.

Despite the consensus about these fiscal estimation techniques among public finance experts, some confusion may exist in social impact bond discussions because advocates and popular press stories commonly use average cost figures as proof that pilot programs can produce significant expenditure reductions.

In policy areas outside of criminal justice the gap between average and marginal costs may be narrower, but a blind use of average costs as the measure of cost savings will likely produce substantial errors in fiscal estimates.

2. What is the marginal cost savings for each fewer prison incarcerated?

A 2009 analysis by the Washington State Institute for Public Policy found a short-run marginal cost savings of $4,495 per person per year and a long-run marginal cost of $13,921. In Maryland, according to the Maryland Department of Public Safety and Correctional Services, the marginal costs in 2012 was approximately $4,623 per person per year.

3. How large a reduction in a prison population would be required to reduce fixed costs?

In Maryland, according to estimates from the Department of Public Safety and Correctional Services, the state would need to realize a reduction of at least several hundred prisoners per year in order to capture a reduction in the facility based fixed costs. It is important to note that a reduction in the prison population must be sustained in order to successfully close a prison or prison wing. Otherwise, the state will incur the costs to close a facility and then the costs to reopen the facility when demand subsequently increases.

It is also important to note that prison bed demand is driven by complex interactions between crime, detection, the judiciary, and agency discretion. Therefore, a one-to-one relationship between recidivism and state prison bed demand is unlikely. In states with substantial overcrowding, for example, 100 diverted individuals may not create 100 empty beds if the judiciary or criminal justice department has a pent up demand for prison beds beyond the current supply. Instead, the bed days avoided by the 100 diverted individuals may be filled, at least in part, by other individuals.

4. If a social impact bond was structured with a sufficiently high goal that the government would realize a savings equal to or greater than the cost of repaying the private investor, do you believe private investors would put their money into these SIBs?

A program would have to operate at a large scale to impact fixed costs and approach budget neutrality. To illustrate this concept, consider a reentry program for prisoners. Highly effective reentry programs reduce reimprisonment by 10 to 20 percent. Applying a 20 percent reduction in general recidivism to a three-year reimprisonment rate of approximately 27.0 percent, which is an average reimprisonment rate, the total number of reimprisonments avoided as a result of a highly effective reentry program is proportionally a small reduction of 5.4 percent of the total number of inmates released through the reentry program. The cost savings from these 5.4 percent of participants must therefore finance the cost of providing services to 100 percent of program participants.

A program large enough to self-finance itself would likely require a program so large that the government may risk substantial negative impacts on social welfare if the program fails or is cancelled. Due to these risks, as well as the experimental design of social impact bonds and the added costs to the government in this model, a large scale program would not be appropriate for a social impact bond. Most (if not all) programs suitable for social impact bonds would therefore be unable to substantially self-finance themselves from cost savings to the government.

5. Does this create an incentive for program administrators to overestimate future potential cost, in this example, for instance, identifying a child who would need education as one that would?

Because the social impact bond model is expensive compared to direct government financing, the potential payments made to investors are typically justified using expenditure reductions created by the program. This creates an obvious pressure to overestimate the potential cost savings to the state from expenditure reductions.

6. Is there evidence to suggest that private investors have a higher tolerance for risk in public programs than governments?

Because existing social impact bond contracts are complex and subject to cancellation, it is not clear at this point whether existing social impact bonds have actually transferred the majority of outcome risk onto investors. Therefore it is difficult to precisely estimate the historical risk tolerance of investors.

Some philanthropic foundations may have a larger risk tolerance for experimental programs than governments, viewing social impact bond type arrangements as appealing alternatives to grant-based research pilots. More profit driven investors may conversely attempt to mitigate risk and maximize return to an extent that the actual risk tolerance of private investors may be lower than that of the government.

More importantly, independent of the risk tolerance of private investors, the allocation of risk in public-private partnerships such as social impact bonds "should be based on analysis of which partner has the relevant resources, expertise, and knowledge to manage and control the risk" (Public-Private Partnership and the Public Accountability Question, Public Administration Review). Though non-profits and some investors may have a greater degree of expertise in some program types, generally there is not good evidence to suggest that third parties will be more efficient at managing and selecting social service programs while managing complex risk. Significant informational asymmetries between government agencies that have operated criminal justice programs for decades in local jurisdictions and external investors with limited knowledge of local communities and programs will reduce risk capacity and efficiency, for example. Appropriately pricing social impact bonds and allocating risks will require investors and participants to reduce these informational asymmetries and agree on a rate of return attenuated to the actual degree of risk shifted.

7. If a few social impact bond programs fail to meet their goals, resulting in losses to investors, do you think future investors would be more hesitant toward social impact bonds? Would investors demand higher return rates to invest in a SIB?

It is quite possible that investors may not appreciate the actual risks incurred and would require greater returns on investment following a non-payment. Financial and insurance markets have repeatedly illustrated that despite readily available financial advice and sophisticated risk estimation and pricing techniques, significant numbers of participants fail to understand risk in key investment decisions. Even supposedly sophisticated investors have made substantial mistakes in investing, such as misunderstanding the correlated risks in collateralized debt obligations for mortgage backed securities.

8. Are you aware of a social impact bonds that has failed?

The Peterborough pilot was terminated early due to a desire by the U.K. government to engage in broader policy changes. This cancellation shows that a social impact bond program can impede larger scale policy changes due to the opportunity cost of the program and requirements of the evaluation. It also demonstrates that the government bears the ultimate risk in almost every human service contract and that cancellation risk is real and can result in high start-up costs with little to show in return.

A second evaluation conducted by RAND released last month provides valuable insights into the program. The evaluation found, for example, that the program as implemented "does not have a defined intervention model or theory of change...possible disadvantages of this flexible approach are that it is challenging to evaluate whether elements of the One Service are effective – and if so, which elements – since the content of the intervention differs between cohort members and over time."

Evaluating Social Impact Bonds as a New Reentry Financing Mechanism: A Case Study on Reentry Programming in Maryland

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Contents

Executive Summary

Social impact bonds (SIBs) represent a relatively new concept for financing and contracting for the delivery of social service programs. They are designed with the intention of shifting the financial risk of performance-based payments from providers onto investors. This allows governments to, in theory, increase the portion of funding linked to the achievement of an outcome without damaging the funding of service providers.

Although actual bonds are not typically issued, the government contracts with investors, a program manager, and nonprofit service providers for a SIB program. If an independent evaluator finds that the SIB program produced outcomes equal to or greater than the targeted levels, then the government reimburses the investors for their capital, along with a return on investment. In the event that the program does not produce the targeted outcomes, then the investors receive no compensation from the government and lose their capital investment.

The Department of Legislative Services (DLS) has conducted a review of the feasibility, potential benefits, and risks associated with financing reentry programs using SIBs. Reentry programs are of particular interest to the Department of Public Safety and Correctional Services (DPSCS) based on its mission. Reentry programs are also generally considered a strong candidate for SIBs due to the potential for large cost savings to the government through the successful reduction of re-imprisonment. Based on the benefits commonly associated with SIBs, DLS evaluated the potential of SIBs to generate cost savings, help finance social programs, shift outcome risk, increase innovation in reentry programming, and build more rigorous evidence for policy decisions.

Even when using a set of highly optimistic assumptions, it is clear that pilot reentry programs cannot self-finance their operations. Because pilot programs cannot create a large enough reduction in demand to close a facility, the cost dynamics are driven by much smaller marginal cost savings. As a result, a program that produces a 10% reduction in recidivism for 250 prisoners per year over five years will only result in minimal avoided imprisonment costs. Before including the cost of direct services, the fixed costs of designing the contract, compensating a third-party intermediary, and conducting an independent evaluation, at $700,000 collectively, would alone exceed the fiscal benefits. Including service costs of $2,500 per participant, the program would result in a net fiscal impact of -$3.9 million. Doubling the size or assumed effectiveness of the program would not result in a positive net fiscal impact.

These results indicate that the additional costs of a SIB program cannot be justified by offsetting savings. Other potential benefits do not justify the cost or complexity of a SIB program either. Given the difficulty of linking the evaluation of a social program to a highly complex contract centered on an outcome payment, the government may actually increase its operational risks in undertaking a SIB. The government would also need to budget upfront for the contingent liabilities of outcome payments. As a result, a SIB program would increase both budgetary pressure and operational risks.

Reentry programs can have great social value independent of their fiscal impact. The decision to finance them should be made independent of whether or not they can be self-financed through cost savings and a SIB mechanism. Because they are especially valuable and effective when integrated and combined with larger scale policies aimed at reducing recidivism and increasing public safety, DLS recommends that DPSCS continue to directly finance reentry programs while pursuing other organizational and policy changes likely to have greater impacts while posing less risk than a SIB financed program.

Evaluating Social Impact Bonds as a New Reentry Financing Mechanism: A Case Study on Reentry Programming in Maryland

Reasons for This Study

In the fiscal 2013 Overview of the Department of Public Safety and Correctional Services (DPSCS), the Department of Legislative Services (DLS) recommended that DPSCS begin examining the possibility of utilizing social impact bonds (SIB) by developing a request for information. In the interim, DLS has conducted a parallel review of the feasibility, potential benefits, and risks associated with financing reentry programs using SIBs.

The benefits commonly associated with SIBs are numerous. According to nonprofit organizations associated with their development, SIBs offer governments the ability to raise new revenue while shifting outcome risk for specific programs to the private sector. Under a SIB, the government contracts to reimburse investors only when positive outcomes are achieved. Payment amounts are based on the cost savings that the government realizes from the program. Because of the emphasis on outcome-based payments, SIBs help increase the rigor of evidence in policy decisions by requiring programs to be evaluated using advanced statistical methods.

These potential advantages are especially promising for reentry programming within DPSCS. Reentry programs can reduce the rate of recidivism, thereby reducing the long-term cost of incarceration. Beyond the potential cost savings, improving offender reentry into the community and reducing recidivism rates is a key part of the department's mission, especially as it moves forward with its reentry focused reorganization plan. However, past efforts to implement reentry programming in Maryland have not produced measurable improvements. Implementing a SIB, if feasible, could help stimulate innovation in programming while increasing the evidence base for future decisions.

This report evaluates whether SIBS can (1) generate cost savings; (2) help finance social programs; (3) shift outcome risk; (4) link payments to outcomes; (5) increase the rigor of evidence used in policy decisions; and (6) stimulate innovative solutions.

Following a brief introduction to the mechanics of SIBs, this funding option will be evaluated relative to each of these categories of potential benefits for a reentry program.

Background on Social Impact Bonds

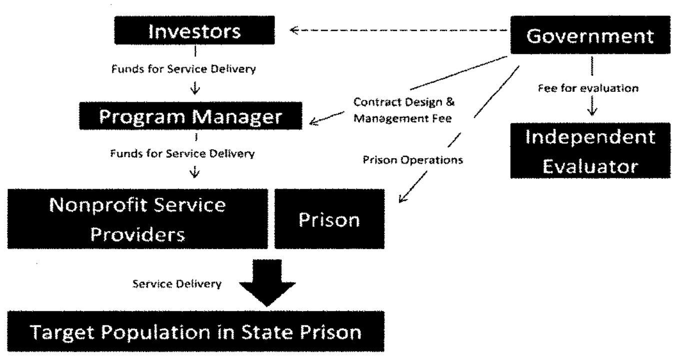
How They Work

SIBs are a new form of a performance-based contract. Under more traditional forms of performance-based contracts, governments typically provide a fixed rate of reimbursement based on the costs that contractors incur. In addition to this fixed rate, performance-based contracts include provisions for reimbursements based on some combination of quality and outcome measures.

Under a traditional performance-based contract, providers, especially smaller community based nonprofits, can have solvency challenges associated with unpredictable cash flows. If 20% of normal contract funding is based on an outcome that is not achieved, this may cripple the operational funding of the nonprofit. The design of a SIB is intended to remedy this problem by providing the upfront working capital to service providers from external investors. Thus, if an outcome is not achieved, it is the investors who lose money, not the service providers. This allows jurisdictions to, at least in theory, increase the portion of funding linked to the achievement of an outcome without damaging the solvency of service providers.

Exhibit 1 shows the key parties and relationships for funding and service delivery in a SIB reentry model. Although actual bonds are not typically issued, the government contracts with investors, a program manager, and nonprofit service providers for a SIB program. Investors provide funding to the program manager. The program manager disburses funds to nonprofit partners who deliver the services. As services are delivered, an independent evaluator funded directly by government conducts a rigorous statistical program evaluation. If the evaluator finds that the SIB program produced outcomes equal to or greater than the targeted levels, then the government reimburses the investors for their capital, along with a return on investment (ROI). In the event that the program does not produce the targeted outcomes, then the investors receive no compensation from the government and lose their capital investment.

Exhibit 1
Basic Illustration of a Social Impact Bond Reentry Model



Source: Department of Legislative Service

Regardless of the outcome, the government compensates the program manager and independent evaluator for the contract design, management fee, and independent evaluation. The government also operates the prison facility where the target population resides and the data systems used to conduct the evaluation. In Exhibit 1, the thin arrows represent funding flows, and the thick black arrow represents service delivery.

Under the traditional conception of a SIB, 100% of the payment is linked to the achievement of performance outcomes. In other conceptions, the risk incurred by investors can be decreased by tying less than 100% of the payment to an outcome. In all cases, the investors are compensated with a return on an investment that resembles the interest on a bond if the outcomes are achieved.

Peterborough Pilot Program

SIBs originated in the United Kingdom (U.K.) with a pilot program currently active in Peterborough. The program is intended to reduce one-year recidivism rates among short-term incarcerated offenders. Though SIBs are usually associated with payments linked to cost savings, payments are structured differently in Peterborough.

As one of the primary nonprofits associated with SIBs articulated, "SIBs... allow[] governments to transfer the financial risk of prevention programs to private investors based on the expectation of future recoverable savings."[1] However, in Peterborough, payments are based on an undisclosed, negotiated value that includes consideration for the cost savings to the government but was ultimately based on negotiations between the government and third parties, representing an acceptable level of return for the third party intermediary and investors. The payments were justified in terms of social value for the government "on the basis that the SIB was innovative."[2]

In the Peterborough pilot, the national U.K. government will reimburse investors if an independent assessor concludes that the program achieves a recidivism reduction of 7.5% or greater in the local prison. Returns to investors may be as high as 13.0% per year over an eight-year period, depending on the amount by which the program exceeds the 7.5% target.

Social Finance U.K. serves as the project manager and receives a management fee. Multiple nonprofit service providers, selected based on their reputation for high performance, operate in cooperation to provide reentry programming for prisoners leaving a single host prison. The U.K. government issued no actual bond. Instead, it contracts with the relevant parties. The complexity of these contracts is the primary reason why the project took two years to develop, a timeline consistent with experiences in Massachusetts, a state which has been developing a similar pilot program.

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[1] *A New Tool for Scaling Impact,* available at SocialFinanceUS.org.

[2] *Lessons learned from the planning and early implementation of the Social Impact Bond at HMP Peterborough,* RAND Europe, 2011

Evaluating the Potential for Cost Savings

The majority of cost savings from a reentry program are associated with avoided reimprisonment. Within this category, the largest cost savings come when an agency can close a wing of a prison or an entire prison due to a drop in the number of prisoners. In Maryland, this typically requires a reduction of at least a few hundred prisoners per year. Until this threshold is obtained, DPSCS can only save on marginal costs for inmate wages, contractual services, materials, supplies, food, and medical costs. These marginal costs are approximately $4,623 per inmate per year for the department.

Statistics on recidivism and reimprisonment are not available for Maryland. **Exhibit 2** depicts the national trends for reimprisonment used for the financial models described below. Between 1994 and 1997, nationally, 5.0% of released prisoners returned to prison within six months. An additional 6.0% returned between six months and one year after release. In total, 27.0% of prisoners returned to prison within three years. This is based on a re-arrest rate for new crimes of 71.6% and a reconviction rate of 50.2% within three years of release from a state prison. The re-arrest and reconviction rates are two of the more common rates reported as the "recidivism rate" for jurisdictions. The reimprisonment rate is relevant to this analysis. A three-year, 27% rate of reimprisonment is broadly consistent with more recent studies conducted across a number of states by The Sentencing Project.[3]

Exhibit 2
National Reimprisonment Rate
Calendar 1994-1997

Time	Percent
6 months	5%
Up to 1 year	11%
Up to 2 years	20%
Up to 3 years	27%

Source: Bureau of Justice Statistics, Prisoner Recidivism Data Analysis Tool

Based on an extensive review of the research literature, highly effective programs can be expected to reduce the recidivism rate by a maximum of approximately 20.0%. Applying this 20.0% reduction in general recidivism to a three-year reimprisonment rate of approximately 27.0%, the total number of reimprisonments avoided as a result of a highly effective reentry program is proportionally a small reduction of 5.4% of the total number of inmates released

[3] *State Recidivism Studies*, 1995-2009

within the hypothetical reentry program. The cost savings for this 5.4% must therefore be equal to or exceed the cost of providing services to the 5.4% of participants avoiding reimprisonment and the remaining 94.6% of program participants.

Scenario One: 10% Recidivism Reduction

Using the national reimprisonment rates from Exhibit 2 and the marginal cost per inmate of $4,623 in Maryland, an optimistic model was constructed. It was assumed that prisoners served an average of three years after reimprisonment. The relationship between the program effect and the effects on the broader demand for prison beds was assumed to be equal. If, as a result of the program, 10 fewer individuals were reimprisoned each year, it was assumed that this directly resulted in a drop in demand of 10 beds per year.

The pilot program was also assumed to be effective with a reimprisonment reduction effect of 10%. This program effect of a 10% reduction in recidivism is in the upper range of effective programs. Many programs produce no measurable change in recidivism, and many successful programs produce a reduction smaller than 10%. To account for this fact, cost-benefit analysis in criminal justice commonly uses the average program effect, which would be even lower than the 10% used here.

The pilot program was assumed to have 250 participants per year. Realistically, operating a pilot program with this many participants may be difficult to achieve, considering this represents approximately 4% of total fiscal 2011 releases in Maryland. Reentry pilot programs, including some programs offered in Maryland, commonly aim for 250 total participants over the life of the pilot but often have difficulty achieving this much lower target.

Exhibit 3 depicts the number of prison beds saved by the Division of Correction per year under these assumptions and the associated cost savings. Over time, each operating year has a higher number of prison beds saved based on the cumulative effect of prisoners serving three-year terms (with staggered start times throughout each year). Although this program would be considered effective, it would result in a maximum of 19 saved prison beds in fiscal 2016 for a fiscal benefit of $89,571 in that year. The program would yield a total fiscal benefit of $247,908 in cost savings from avoided marginal costs over a five-year period.

Exhibit 3
Schedule of Benefits, Scenario One
Fiscal 2012- 2016

Year	No. of Program Participants	Returning to Prison Before Program Effect (No. of Persons)	Program Effect (No. of Persons Not Going to Prison) Current Year	Prison Beds Saved	Cost Savings
2012	250	27.5	-2.75	1	$6,357
2013	250	50.0	-5.00	5	24,271
2014	250	67.5	-6.75	11	51,431
2015	250	67.5	-6.75	17	76,280
2016	250	67.5	-6.75	19	89,571
Total	**1,250**	**280.0**	**-28.00**	**54**	**$247,908**

Source: Department of Legislative Services

Exhibit 4 details the costs of operating the program and reveals the total net fiscal impact after including the benefits from Exhibit 3. The cost of direct services was budgeted at $2,500 per participant. A cost per participant of $2,500 is on the lower end of the program cost spectrum but reflects the costs associated with a more intensive reentry program that is more likely to show a positive program effect.

Exhibit 4
Total Net Fiscal Impact, Scenario One
Fiscal 2012-2016

Total Benefits	
Marginal Cost Avoidance (Exhibit 3)	$247,908
Variable Costs	
Direct Services at $2,500 Per Participant	-$3,125,000
Investor Return	
Return on Investment at 10%	-$312,500
Fixed Costs	
Program Evaluation	-$150,000
Contract Design	-300,000
Management Fee to Intermediary at $50,000 Per Year	-250,000
Net Fiscal Impact	**-$3,889,592**

Source: Department of Legislative Services

The remaining cost assumptions were also optimistic.

- The program evaluation costs were assumed to be at the lowest possible cost. Program evaluations frequently cost more than double the $150,000 budgeted in this scenario.

- The contract design cost was budgeted at $300,000. Each SIB contract is unique to the local program and jurisdiction. As such, each contract design will be expensive and time consuming, and Maryland cannot simply replicate an existing contract model to avoid the costs of designing the contract with local and national partners. Maryland can expect a full design process to take approximately two years.

- The management fee to the intermediary is only large enough to pay for $50,000 per year in management fees at $250,000 over five years.

- The return to investors was budgeted at 10%, below the maximum 13% ROI amount used in Peterborough.

Using these figures, the fixed costs would equal $700,000, and total variable costs would equal $3,125,000. Combining these costs with the ROI and the fiscal benefits, the net cost of the program to the department would be approximately $3,889,592, as depicted in Exhibit 4.

This optimistic scenario reveals that a successful reentry program cannot self-finance using the cost savings to the government. The marginal cost avoidance represents less than 6% of the total costs of operating a SIB financed reentry program. If the program failed to demonstrate the targeted outcomes after a full five years of operations, the government would, at a minimum, incur $700,000 in costs as a result of the financing mechanism, due to the costs of the program evaluation, contract design, and management fee. The department's avoided cost of direct services, funded by the loss of investors' capital, would depend on the ability of the contract to effectively shift financial risk onto investors – an issue explored in greater depth in the limitation section of this analysis.

Scenario Two: 20% Recidivism Reduction and Lower Costs

Even if the assumptions in the first scenario are each modified to reflect a more optimistic set of assumptions, the net fiscal impact of a successful program would still remain negative.

Two primary adjustments were made to model a highly optimistic scenario:

- the program effect was revised upwards from 10 to 20%; and

- the management fee to the intermediary was revised downward from $250,000 to $150,000.

As **Exhibit 5** depicts, an increase in the expected program effect from 10 to 20% results in a 100% increase in the prison beds avoided and total cost savings from Scenario One. Before including the costs of operating the program using a SIB, the savings from a reduction in reimprisonment represent a maximum fiscal benefit per year of $179,141 and a total fiscal benefit of $495,817 over a five-year period. However, even under this highly optimistic set of assumptions, only a maximum of 39 prison beds are avoided in fiscal 2016. The department is only able to close a facility when the number of beds saved each year is consistently at least several hundred per year.

Exhibit 5
Schedule of Benefits, Scenario Two
Fiscal 2012-2016

Year	No. of Program Participants	Returning to Prison Before Program Effect (No. of Persons)	Program Effect (No. of Persons Not Going to Prison) Current Year	Prison Beds Saved	Cost Savings
2012	250	27.5	-5.5	3	$12,713
2013	250	50.0	-10.0	11	48,542
2014	250	67.5	-13.5	22	102,862
2015	250	67.5	-13.5	33	152,559
2016	250	67.5	-13.5	39	179,141
Total	**1,250**	**280.0**	**-56.0**	**107**	**$495,817**

Source: Department of Legislative Services

Exhibit 6 provides a comparison of the cost savings with the variable and fixed costs. Using these benefits to inform an assumption about the cost of direct services, it is apparent that a program that approaches fiscal balance would have very little funding available for direct services. Even after doubling the assumed efficacy of the program, the fixed costs of a SIB program alone would exceed the fiscal benefits. This means that any money spent on direct services increases the net negative fiscal impact of the program to the government.

Exhibit 6
Total Net Fiscal Impact, Scenario Two
Fiscal 2012-2016

Total Benefits	
Marginal Cost Avoidance (Exhibit 5)	$495,817
Variable Costs	
Direct Services at $250 Per Participant	-$312,500
Investor Return	
Return on Investment at 10%	-$31,250
Fixed Costs	
Program Evaluation	-$150,000
Contract Design	-300,000
Management Fee to Intermediary at $30,000 Per Year	-150,000
Net Fiscal Impact	**-$447,933**

Source: Department of Legislative Services

Using $250 per participant to illustrate the fiscal dynamics at the lowest conceivable cost still results in a net fiscal impact of -$447,933 over the life of the program. A program with only $250 to spend on direct services per participant would provide very limited services. Low intensity interventions are not likely to produce a reduction in recidivism close to 20%. Exhibit 6 depicts the total net fiscal impact of the program across all five years of program operations using this second order, final modification of the assumptions from the first scenario.

Doubling the size of the program does not alleviate the negative fiscal impact. Even under highly optimistic assumptions, a program that had 500 participants complete the program each year would only reduce the demand for prison beds by a maximum of 78 beds in year five of the program, a reduction in demand well below the number needed for even a partial facility closure. For a pilot program then, the fiscal impact is determined by the benefits associated with the avoided marginal costs per inmate and the costs of offering the reentry programming. Given these dynamics, even under optimistic assumptions, it is apparent that a highly effective program cannot self-finance.

Accuracy of Fiscal Estimates

These projections are not intended to reflect actual DPSCS experiences with reentry programming. The actual relationship between reentry programs and the demand for prison beds is unknown. Because the department has discretion over facility use and prison bed demand is driven by complex interactions between crime, detection, the judiciary system, sentencing, and DPSCS discretion, a one-to-one relationship between recidivism and State prison bed demand is unlikely. The relationship between reentry programs and prison bed demand was assumed to be direct in the scenarios above, yet the cost dynamics were not positive. The true interactions are likely to be less favorable to strategies attempting to finance pilot reentry programming through cost savings experienced during the life of the program.

Both scenarios described earlier neglect the fiscal impact outside of the cost of reimprisonment for expenditures related to parole and broader social services funded by the State. In the case of avoided parole, there may be some additional savings, but the cost of parole is generally much smaller than the marginal cost of imprisonment. For other cost dynamics, reentry programming may increase direct costs to the State, at least in the short term, by increasing the percentage of released former inmates who enroll in State-funded social service programs.

A more accurate forecast would require significant investments in data collection and analysis. Beyond developing a working model of the relationship between sentencing and prison demand, modeling cost dynamics prospectively would also require forecasting crime levels, prison populations, policy changes, and funding streams from non-State sources. Even retrospectively, it can be very expensive due to the difficulty of collecting and harmonizing data collected in separate systems. At the current time, Maryland does not even have the capacity to estimate general population reimprisonment rates (though DPSCS is implementing a new data system that should improve data collection and analysis abilities within the department).

Though it may be difficult to model the cost dynamics with greater accuracy, the general dynamics will not change. Prior experiences with programs for reentry, including the Peterborough SIB program, have demonstrated that effective pilot programs cannot finance themselves with cost savings. An independent evaluation, commissioned by the U.K. Ministry of Justice and conducted by RAND Europe found that the reentry pilot program in Peterborough is "too small to deliver substantial 'cashable' savings (monetized benefits)."[4] Additionally, a study entitled *Impact and Cost-benefit Analysis of the Maryland Reentry Partnership Initiative*, conducted by the Urban Institute Justice Policy Center, found that a pilot reentry program offered in Baltimore did not produce savings for the government. The report noted that "when community-justice partnerships work – whether they are reentry programs, drug courts, or some other intervention – the benefits tend to disproportionately accrue to private citizens, rather than public agencies. That is, public agencies looking to programs…as a means of creating revenue streams that more than offset the cost of the program are likely to be disappointed." The

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[4]*Lessons learned from the planning and early implementation of the Social Impact Bond at HMP Peterborough*, RAND Europe, 2011, pg. iv.

Maryland Reentry Partnership Initiative cost $3,476,240 to administer for a cost of $6,213 per participant. It saved public agencies $2,961,650, though the estimate for correctional spending was made using average costs instead of the more accurate marginal cost methodology. Even with this generous inflation of avoided correctional costs, the program still had a net cost. These examples suggest that direct cost savings are insufficient to finance pilot reentry programs.

Nonfiscal Value of Programming

It is important to note that this case study centers on the efficiency and cost effectiveness of a SIB for financing and operating reentry programming, relative to direct government operations. Reentry programming should be as cost effective as possible and operated in the most efficient and equitable ways available. But the decision to engage in reentry programming hinges on much broader, nonfiscal considerations than whether or not a SIB is an efficient way to finance reentry programs.

Reentry programs are intended to help prisoners who are leaving incarceration successfully return and adjust to their local communities. Incarcerated individuals undergo a very difficult adjustment process upon entering incarceration that "can create habits of thinking and acting that are extremely dysfunctional outside the prison walls."[5] The longer individuals are incarcerated, the more they adapt to a prison environment that encourages heavy dependence on institutional structures, hypervigiliance and interpersonal distrust, and social withdrawal, among many psychologically painful effects. Simultaneously, prisoners experience diminished ties to their family and social networks.

At the time of the release, individuals return to the community with norms and attitudes that are maladaptive to society outside of the prison walls. Compounding the problem, many, if not most, have weak labor market attachments and social supports. Reentry programming can thus provide a highly socially valuable set of services, independent of the fiscal impact, that contribute toward stronger and safer communities when former inmates are able to begin rebuilding healthy and productive lives.

Limitations of the SIB Model

Substantial Risk Shifting Unlikely to Occur

Even if a SIB reentry program cannot self-finance through cost savings, the potential to shift outcome risk to the private sector could in theory provide benefits to the government that justify the added costs incurred in this financing mechanism. Unfortunately, there are no tangible examples of significant risk shifting occurring in practice for SIBs.

There are two primary obstacles to shifting risk. First, there must be an investment market with a tolerance for a high degree of risk in the outcomes of social programs. Second, the

[5] *Prisoners Once Removed*, The Urban Institute, pg 39.

contract design must provide an enforcement mechanism to prevent investors and providers from terminating the contract early.

Unlike municipal bond markets, a market for high-risk instruments to finance government social programs does not currently exist. The department would have to incur substantial costs in selecting partners and designing the contract in order to discover whether or not there was indeed an appetite for a reentry program in the State.

Furthermore, eligible partners must tolerate long-term financial risk that is enforced by a mechanism that prevents early termination. Without such a mechanism, the ultimate financial and operational risk would be with the government. The only risk shifting that would occur without an enforcement mechanism would be for the initial operations that are necessary for the third parties to evaluate cost and the likelihood of achieving the specified outcomes.

Peterborough provides insufficient guidance on how to design such a contract. An independent evaluation found that the risk "transfer, and the contracts themselves, are untested in many respects: issues that challenge the contractual arrangements and/or require clarification through the contracts could still arise in the course of implementation."[6] A large amount of this uncertainty is driven by the complexity of the contract: "Complexity in some instances meant that the actual transfer of risk is not clear."[7]

Even if a contract could be designed to effectively limit investor termination, there would still be the possibility that the funds would not cover the cost of program operations. Under more standard forms of performance-based contracting, providers and the government can renegotiate the contract when the cost drivers differ from initial estimates. The inclusion of external investors and a rigorous independent evaluation in a SIB, however, significantly limits the flexibility to renegotiate contracts – a flexibility that has been critical for many jurisdictions engaged in more standard forms of contracting for human services.

To remedy the cost reimbursement problem, some hybrid models of social impact bonds have been proposed where the government assumes from the start a majority of risk. Under these proposals, the government pays for a substantial portion of the program operation costs. In some proposals, the government would guarantee 70% of program costs. However, in a SIB model where the government guarantees 70% of the program costs, the costs of designing the contract and compensating a third-party intermediary are close to the dollar value of the risk shifting for the government.

In short, even if a market for investments in Maryland based SIBs were to exist, it is unlikely that the government will be able to shift the financial outcome risk for the program substantially onto the private sector given the difficulty of preventing service providers and investors from leaving a potentially underfunded and/or unsuccessful enterprise. If risk cannot

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[6] *Lessons learned from the planning and early implementation of the Social Impact Bond at HMP Peterborough*, RAND Europe, 2011, pg. 54.

[7] *Ibid.*

be in practice shifted to the private parties through an effective enforcement mechanism to prevent early termination, Maryland would in fact be increasing its operational and financial risks with the decision to engage in the project. In the event that the private parties cancelled the contract, there may be strong political, ethical, and administrative reasons for continuing a program through direct government funding.

Added Expenses in SIB Model Create Additional Budgetary Pressure

Implicit in discussions of SIBs is the notion that they can alleviate underfunding of specific social services by leveraging private capital. The ability of SIBs to alleviate funding challenges is based partly on the idea that capital projects are typically better financed, due to recognition that the benefits of capital projects accrue over a long time period. In order to spread the cost of capital projects across the useful life of a project, governments typically borrow money through bonds and repay them over time, breaking the limiting link between upfront costs and total benefits. Social programs, in contrast, are constrained by annual appropriations in the operating budget – even though the benefits also accrue over a long time period. Preventing a future violent crime may cost more in the short term but will save a large sum of money over time through avoided incarceration, for example.

Even if a specific social program could reap fiscal savings with increased upfront funding, SIBs would not solve this problem. Because of the uncertainty of the payments made by the government, both Massachusetts and the U.K. government have planned in their budgets to make the full payment necessary to fund the program and pay investors their ROI.

Budgeting for contingent liabilities is good fiscal policy. It would be risky and imprudent long term to incur contingent liabilities without providing funding. But in practice, this means that operating expenditures for a SIB program will be allocated either in advance or annually for the full cost of the program, in the event that the program works and the government must make the outcome-based payments. The government, therefore, realizes no upfront savings to finance the program and is still limited by current operating budget constraints.

High-stakes Payments May Distort Evidence

Common conceptions of SIBs assume that unproven programs are the types that investors, providers, and the government will prefer for high-risk outcome payments. However, given the financial and reputational stakes attached to SIBs, governments and parties to the SIB are more likely to select programs and partners with well-established records of performance. Selecting providers based on their likelihood to succeed, in the case of a SIB pilot, can create the false impression that the specific intervention could be scaled to a larger operation.

In Peterborough, for example, the program location and partners were not chosen randomly from a pool of qualified providers and relevant locations. Instead, the providers were selected based on their existing partnerships, proximity to the prison, and established track record for high performance. Even if the Peterborough SIB achieves positive outcomes, it will still be unclear if this type of program can be replicated in other locations without the advantages produced from location and partner creaming.

Additionally, even if new programs are piloted, if private parties cannot in practice be prevented from leaving contracts early, this may distort the nature of the evidence base. In the event that private actors decide not to wait for medium- to long-term positive outcome indicators and cancel the program when the short-term outcomes appear unfavorable, this would distort the production of new evidence for any programs that may require longer periods of time to demonstrate efficacy.

The Evaluation May Be Inconclusive

SIBs are designed with the intention of offering governments the ability to increase the portion of payment based on performance. This is one of the primary innovations of the SIB concept. In order for this to function, there must be an increased confidence in the assessment of the outcome and its causal drivers.

It is not sufficient to say that a treatment group exceeded the average outcome. Instead, evaluators must build a group to control for effects of causal factors that are independent of the specific intervention. In the most rigorous evaluations, research protocols are designed around random assignment to minimize the effect of unmeasured differences between the control group and the treatment group in the program. Random assignment can be both operationally and cost prohibitive, however. In the Peterborough pilot, for example, there were concerns about denying treatment randomly within a single prison. Many evaluations and research studies construct simulated control groups instead (usually by using propensity score matching). This is considered the next most rigorous form of evaluation.

However, the simulated control groups are not capable of controlling for unmeasured variables, as the control groups are not random but rather assembled based only on observed characteristics. This means that there is an unknown risk that the observed outcome was caused by an unmeasured variable. This problem was noted in a government commissioned evaluation of the Peterborough program.[8] The report indicated that the methodology used in Peterborough did control for basic demographic data and was the most rigorous methodology available apart from random control assignment. But it "cannot take account unmeasured differences…aside from treatment received."[9]

However, regardless of the technique, in small studies it is harder to tell whether or not the intervention was the result of random variation. In other words, even if there is conclusive evidence that the treatment group differed in important ways from the control group in terms of outcomes, this difference may be random. The risks of this occurring are higher in smaller samples.

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[8] *Peterborough Social Impact Bond: an independent assessment*, May 2012, Ministry of Justice Research Series, pg 8.

[9] *Ibid.*

In practice, expert researchers rarely use a single study as proof that a type of intervention works. The value of research and program evaluation is in the cumulative evidence. A problem with SIBs is that they depend on a high degree of confidence in a single evaluation for the entire payment.

SIBs and Narrow Policy Change

Program models for a SIB financed reentry program start services with individuals at the time of release and provide social services, such as housing, job counseling, and therapy. From a broader policy perspective, this type of reentry program represents a very narrow policy change relative to the total number of practices and policies that impact rehabilitation, community reentry, and recidivism. Other jurisdictions, including jurisdictions in Maryland, address reentry programming as a comprehensive process that begins at admission to the prison. As such, if the goals surrounding reentry programming are to reduce expenditures on imprisonment while increasing public safety and social welfare, a host of broader policy changes can be enacted in complement to programs that provide services directly at the time of release. Many of these, in fact, have already been identified by the Maryland Task Force on Prisoner Reentry.

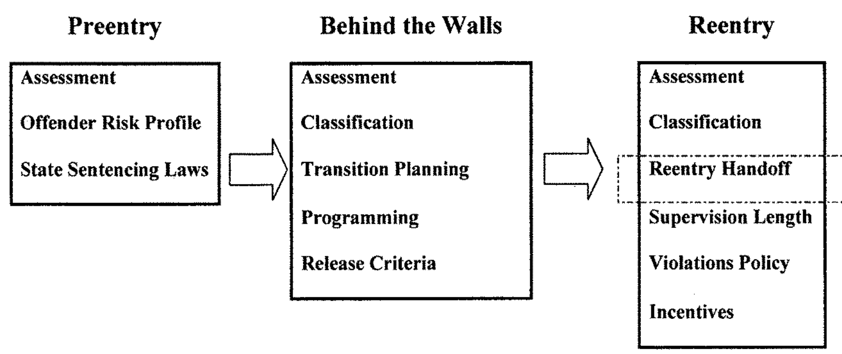
Post-release employment, for example, is a key causal determinant of both successful community reintegration and reduced recidivism. While reentry programs can help facilitate prisoners' adjustment to reentry and, therefore, potentially increase their employability, the difficult barrier of employment discrimination for those with criminal histories remains. To combat this problem, in a report issued last year, the task force recommended a law to shield criminal records for nonviolent convictions from public view after an appropriate waiting/proving period. This is an example of the types of synergistic policy change that can complement reentry programs to save the State money while increasing social welfare.

The policy mechanisms with the greatest leverage available to reduce prison expenditures while enhancing public safety exist in sentencing and release criteria reforms. Whereas reentry programs work to reduce the number of prisoners indirectly, sentencing and release criteria reforms can directly decrease the number of low-risk offenders who are sent to and/or retained in prison. As one example, in the 2012 *Joint Chairmen's Report* response on the Plan for Reducing the State Inmate Population, the department estimated that increasing the number of good conduct credits that nonviolent prisoners are eligible to earn could save the department up to $29 million annually. The department found that this was a sustainable option that provides extra incentives for good behavior to inmates coming into the system and would increase safety in prison facilities.

This type of policy would complement reentry programs, as prisoners who spend longer time periods incarcerated generally have a harder time re-integrating into their local communities. Longer separation periods, for example, decrease the likelihood of mothers retaining custody of their children. Reducing the time served in prison for offenders who would be more effectively and safely rehabilitated in the community, while maintaining supervision by the department, would help reduce the heightened psychological difficulty of reentry associated with longer prison terms.

A reentry program financed by a SIB, in contrast, represents a very narrow policy change, as depicted in **Exhibit 7**. A privately operated reentry program would start services at or near the point of release for prisoners, labeled as the "reentry handoff" in Exhibit 7. This is just one of a larger number of institutional policies and practices that impact the community reintegration and/or recidivism of those committed to the department's supervision.

Exhibit 7
Policies and Practices That Effect Recidivism



Source: Adapted from the Pew Center on the States

The narrow focus of a SIB reentry program poses three problems to a state engaged in or considering broader policy change:

- Because SIBs require high degrees of statistical control in order to determine causality, the confidence in the justification for the high-stakes outcome payments may be placed in jeopardy when a large number of important environmental and demographic factors are modified during the pilot program. If it were possible to control for these changes, the baseline outcome goals may still require modification to account for demographic and environmental changes. Making these modifications to a contract would be time consuming and expensive.

- A SIB financed program would create a new system of private service delivery external to the department. In some cases, this may be counterproductive where integration between current DPSCS programs would increase efficiency and efficacy. Reentry programming often starts in many jurisdictions at the point of entry into the prison system. Creating a parallel system separately administered by the private sector may impede operational integration, a problem that may be especially difficult if the department were to engage in large scale re-organization and/or policy change.

- Building a highly sophisticated contracting mechanism to focus on one narrow aspect may impede the capacity of agencies and the State to engage in broader policy evaluation and change. Developing a SIB for a reentry program would require significant investments of staff time to design and manage the contracting process. This may impede the department's ability to simultaneously enact other large complementary changes that require budget, contracting, and senior staff time.

Conclusion

A reentry program financed using a SIB would not produce sufficient benefits to justify the operational costs or risks of engaging in this form of high-stakes contracting.

A social impact bond financed program would:

- increase budgetary pressure compared to direct financing, due to the necessity of funding contingent liabilities and the added expenses of features unique to SIBs;

- not produce cost savings when outcomes are achieved, even under highly optimistic assumptions;

- be unlikely to shift outcome risk;

- possibly exclude new providers and program types that do not have a well-established record of success through investors seeking to minimize risk; and

- potentially distort evidence used in policy decisions.

The primary weakness of a SIB is in the complexity of its moving parts and the high-stakes nature of the financing mechanism. A SIB contract would only be advantageous to Maryland, if, at minimum, all of the following conditions were met:

- Maryland could create a contract that guarantees investors and providers will continue program operations for the entire life of the contract, even when it is apparent after the program starts that the outcomes are unlikely to be achieved.

- Nonprofits would continue service delivery when reimbursements are below costs **or** all parties could effectively and efficiently renegotiate the contract without jeopardizing the evaluation and value of the risk shifting to the government.

- An independent program evaluation could definitively show that the program either did or did not cause the target outcomes to be achieved.

- The additional costs inherent to the SIB financing mechanism would be sufficiently lower than the cost of providing the service, so as to justify the value of these services to shift the outcome risk.

- A private market can be created for investing in unproven forms of reentry programs.

- The department has the operational capacity to engage in a SIB pilot program while undertaking other organizational and policy changes.

- There is sufficient State funding in the operating budget available to fund the contingent liabilities of a SIB program.

- The value of shifting the risk for a negative outcome is monetarily large enough to the government to risk the added costs of the SIB and the potential for an investor ROI given a positive outcome.

If any one of these conditions cannot be met, then a SIB model is not an ideal financing or contracting mechanism for reentry programs in Maryland. Given the difficulty of shifting the outcome risk and the countervailing incentives for many of these conditions, it is unlikely that these conditions will be met.

Reentry programs can have social value well beyond the direct fiscal costs to the government. They are especially valuable and fiscally beneficial when developed in tandem with complementary policies that have an even greater impact on recidivism. However, SIB financing mechanisms create a host of problems that collectively limit the purported benefits of the financing mechanism and the ability of governments to engage in broader policy changes.

Recommendation

DPSCS should continue to directly finance and operate reentry programs while pursuing other organizational and policy changes likely to have greater impact while posing less risk than a SIB financed program.

EXPANDING ECONOMIC OPPORTUNITY FOR WOMEN AND FAMILIES

TUESDAY, MAY 13, 2014

UNITED STATES SENATE,
COMMITTEE ON THE BUDGET,
Washington, D.C.

The Committee met, pursuant to notice, at 10:31 a.m., in Room SD–608, Dirksen Senate Office Building, Hon. Patty Murray, Chairman of the Committee, presiding.

Present: Senators Murray, Wyden, Baldwin, Kaine, King, and Sessions.

Staff Present: Evan T. Schatz, Majority Staff Director; and Eric Ueland, Minority Staff Director.

OPENING STATEMENT OF CHAIRMAN MURRAY

Chairman MURRAY. Good morning. This hearing will come to order. I want to thank my Ranking Member, Senator Sessions, and all of our colleagues who have joined us. And thank you to our witnesses. We have AnnMarie Duchon, the associate director of accommodation services at the University of Massachusetts, Amherst; Dr. Heather Boushey, the executive director and chief economist at the Washington Center for Equitable Growth; and Sabrina Schaeffer, executive director of the Independent Women's Forum.

We are glad you are able to join us today to discuss ways we can help working women succeed in today's economy and the reasons why their success is so important to family, economic security, and to the economy as a whole.

Over the last four decades, the economy has seen a lot of change. American businesses and workers have had to compete on an increasingly global scale. Far too many of the middle-class jobs workers could support a family on have moved overseas, and the gap has widened between those at the very top of the income scale and everyone else.

All of this has put an increasing burden on working families, but in the face of these challenges, one of the most significant shifts we have seen in the last few decades has actually eased some of the burden, and that is the increasing participation of women in the workforce.

As working families have felt more and more strained, women's economic contributions have made a huge difference, both to family budgets and to our broader economy. Federal Reserve Chair Janet Yellen, who attended our hearing last week, has called the increasing participation of women in the workforce "a major factor in sustaining growing family incomes." And Dr. Boushey found in a recent study that between 1979 and 2012, the U.S. economy grew by almost 11 percent as a result of women joining the labor force. And, of course, that kind of economic growth has important outlooks and implications for our budget as well.

As we think about ways to support growth in the 21st century, it is absolutely clear our country's economic success and that of middle-class families goes hand in hand with women's economic success. This means we have a lot more work to do because, despite all the progress that has been made, all the glass ceilings that have been broken, women still face barriers that are holding them, their families, and the economy back.

Even though the majority of women are now full-time workers and two-thirds of mothers are either earning all or a big part of what their families depend on to make ends meet, women overall still earn 70 cents to the dollar for doing the same work as men. Over just 1 year, that adds up to $11,600 in lost wages per household. I believe AnnMarie will be speaking about what kind of difference it means to her family's budget.

And because women are still more likely to be the primary caregiver in a family, the lack of paid leave at most jobs means they experience higher turnover and lost earnings and are more likely to be passed over for promotions that would help them advance.

In addition, our outdated Tax Code works against married women who choose to go back to work as a second earner. Because their earnings are counted on top of their spouse's, they can actually be taxed at a higher rate. This can deter some mothers from choosing to re-enter the workforce, especially when you consider the high costs and lack of access to high-quality child care and other costs associated with work.

These kinds of challenges are especially pronounced for women, and particularly mothers, who are struggling to make ends meet.

Two-thirds of minimum wage earners are women, and their jobs are disproportionately unlikely to offer any flexibility when, for example, a child gets sick and needs to be picked up early from school. And their earnings are quickly swallowed by costs associated with work like child care and transportation.

It is also important to note that our outdated policies disproportionately affect women when it comes to their retirement security. Because women on average earn less than men, accumulate less in savings, and receive smaller pensions, nearly three in ten women over 65 depend only on Social Security for income in their later years. I think all of my colleagues and I are alarmed that the average Social Security benefit for women over 65 is just $13,100 per year. That is hardly enough to feel financially secure.

The impact of these barriers is increasingly clear. Over the last decade, the share of women in the labor force has actually stalled, even as other countries have continued to see more women choosing to go to work. Experts believe that a major reason for this is that, unlike many other countries, we simply have not updated our policies to reflect our 21st century workforce and help today's two-earner families succeed.

At a time when we need to be doing everything we can to grow the economy and strengthen our middle class, that is unacceptable. Women need to have an equal shot at success. First and foremost, that means we need to end unfair practices that set women back financially. We took a good step forward with the Affordable Care Act, which now prevents insurance companies from charging women more than men for coverage.

But we need to do more to make sure women are getting equal pay for equal work. My colleague Chairwoman Mikulski has led the way on the Paycheck Fairness Act, which would provide women with more tools to fight pay discrimination. Giving the millions of women earning the minimum wage a raise would also go a long way toward that effort. And we also need to update our Tax Code so that mothers returning to the workforce do not face a marriage penalty.

In addition to expanding the earned income tax credit for childless workers, the 21st century worker tax cut that I introduced would provide a 20-percent deduction on the second earner's income for working families with young children to help them keep more of what they earn.

As we get rid of discriminatory practices, we should also recognize the challenges that working parents face and put in place a set of policies that help them at work and at home. A big part of this is investing in expanded access to affordable, high-quality child care. Parents deserve to know that their children are safe and thriving when they are at work.

So I hope our witnesses today will share some thoughts about steps Congress could take through our Tax Code and by building on successful programs like Head Start to give them some peace of mind.

Finally, we need to build on and strengthen Social Security with policies that make it easier for women and their families to build a secure retirement.

There is, of course, much more we need to do in addition, but any of these changes would make a huge difference for working women and their families. Acting to expand economic opportunity for women is the right thing to do. It is part of our ongoing work to uphold our country's most fundamental values. But as our country's recent history shows, it is also an economic necessity, both for those families and for our broader economy. I hope that in the coming weeks and months we will be able to work together on some of these ideas which would do so much to strengthen our country right now and into the future.

So, again, I thank all of our witnesses for joining us today. We look forward to your testimony. But first I will turn it over to my Ranking Member, Senator Sessions.

OPENING STATEMENT OF SENATOR SESSIONS

Senator SESSIONS. Thank you, Madam Chairman. We appreciate the witnesses that will be before us today. This is an important issue, and we look forward to your testimony.

There is no question that the state of our economy remains poor and that millions of American families are barely scraping by. And despite some progress, women do still face challenges, unique challenges, and discrimination. We must have in America a fair and equal workplace for all our citizens.

The workforce participation rate for women is now at its lowest level in 23 years. We had a surge of women coming into the workforce in the 1970s and 1980s. That is being altered today. For every one job added last month, nearly three people left the workforce entirely. Real wages for women have been stagnant since 2009.

I think, Madam Chair, there is a marriage penalty on a spouse who decides to go to work. We need to look at that.

Median household income in America has dropped a stunning $2,268 since 2009 after adjusting for inflation. And Chairman Yellen told us last week lamenting twice in her remarks that we are facing a slack labor market.

So these statistics paint an alarming portrait of economic hardships facing Americans. Working moms are struggling valiantly every day to support their kids, pay bills, and raise a family, often by themselves, and to set aside a little money for the future. That is very difficult. They are heroes in the American economy. There is no doubt about that.

Every day this administration, however, every day it continues to advance policies that make it more difficult for Americans to find a job, to earn a living, to see their wages go up is a detriment to all, including women.

Women especially are rightly concerned about the economic futures facing our young people. The statistics there are grim. Nearly one in two recent college graduates is underemployed. The unemployment rate for Americans age 20 to 24 is 10.6 percent. Teenage unemployment has been at or above 20 percent since 2009. Hispanic youth unemployment is 21.7 percent. African American youth unemployment is 36.8 percent.

We have borrowed $8 trillion, running our debt past $17 trillion total, and yet incomes are down, wages are down, and workplace participation is down.

Over the past year, we have held a number of informative hearings in the Budget Committee, all leading to one conclusion, it seems to me: American workers are suffering under President Obama's economy. Every major policy action, virtually every major policy action tends to weaken job creation and wage progress, lowering wages.

Here is the economic agenda that we are facing today: an anti-energy policy that drives up prices of energy and sends good-paying jobs overseas; excessive Government regulation that always destroys jobs and weakens productivity; a burdensome Tax Code that undermines the ability of American workers and industry to compete on the world stage; a Government health care expansion that is shrinking the workforce and forcing people, too many, into part-time jobs; a weak trade policy that fails to defend the American worker effectively on the world stage and insists that our trading partners comply with their agreements; and an immigration plan that would import twice as much new guest workers at a time when record numbers of Americans are not working at all, pushing down wages and increasing unemployment; and a massive maze-like welfare state that helps Government bureaucrats but traps families in poverty; out-of-control deficit spending and debt undermine economic confidence and erode stability.

So these policies, I suggest, are hurting Americans, not helping us, all ages, women particularly, and in all walks of life. We must stop this. Everyone agrees American workers are suffering. We need a new economic strategy that grows the middle class, and not the Government, and puts the needs of women and all workers first.

Madam Chair, thank you for the hearing, and I look forward to hearing from the witnesses.

Chairman MURRAY. Thank you very much.

With that, we will turn it over to our witnesses. Dr. Boushey, we will begin with you.

STATEMENT OF HEATHER BOUSHEY, PH.D., EXECUTIVE DIRECTOR AND CHIEF ECONOMIST, WASHINGTON CENTER FOR EQUITABLE GROWTH, AND SENIOR FELLOW, CENTER FOR AMERICAN PROGRESS

Ms. BOUSHEY. Thank you. Thank you, Chairman Murray, Ranking Member Sessions, and the rest of the Committee for inviting me here today to testify.

My name is Heather Boushey. I am executive director and chief economist of the Washington Center for Equitable Growth. The center is a new project devoted to understanding what grows our economy, with a particular emphasis on understanding whether and how rising levels of economic inequality affect economic growth and stability.

It is an honor to be invited here today to discuss how working women are critical for economic growth and the role of Federal policy in advancing their economic progress. My testimony highlights the many aspects of our economy where gender inequality and economic inequality go hand in hand, and also where economic inequality among women threatens family well-being and economic growth. Government policies can address these gaps in order to help women succeed so our economy can succeed.

There are three conclusions I want to highlight from my testimony.

First, women, their families, and the economy have greatly benefitted from women's entry into the labor force.

Second, barriers to women's work manifest themselves differently across the income distribution.

Third, there are a variety of ways that Federal policy can encourage women's labor force participation, among them tax credits, family leave, early childhood education programs, all of which can increase women's contribution to family income and grow our economy.

Today most women work and they work full time. About two-thirds of mothers are family breadwinners, bringing home either all of their family's earnings or at least as much as their partners or co-breadwinners.

Women's increased work is important for family incomes and for economic growth. My colleagues and I found that between 1979 and 2012, our Nation's gross domestic product increased by almost 11 percent due to women's greater hours of work. This translates into about $1.7 trillion in output in today's dollars, roughly equivalent to our combined Federal spending on Social Security, Medicare, and Medicaid in 2012.

Over the past few decades, women have made enormous economic gains. Between 1960 and 2000, women's labor force participation steadily grew, and the gender pay gap steadily shrank. But progress on both has stalled for more than a decade. The United States has fallen from being the 6th highest country in terms of female labor participation among developed economies to the 17th in 2010. And while some women have made gains in the workforce, too many have been left behind. Between 2000 and 2007, higher-wage women saw their real wages increase by four times the amount of women with poorly paid jobs.

One reason for these kinds of disparities is that while some women have made progress entering into professional or male-dominated occupations, many women continue to toil in female-dominated jobs that still pay low wages. But also within occupations, there are disparities, in no small part due to differences in flexibility in terms of hour and location.

Policies to address conflicts between work and family are too often available only to women at the top of the wage distribution, and too often women have to quit their jobs in order to provide care, which harms their future earnings potential and limits their retirement benefits.

Policies such as paid sick days, paid family leave, and scheduling flexibility would fill an important inequality gap for workers, especially women and especially caregivers.

It is important to recognize that employers have not on their own stepped in to provide these important benefits. Last year, only 61 percent of workers had employer-provided paid sick days, and only 12 percent of workers had access to employer-provided paid leave which could be used to recover from a serious illness or care for a family member. These are issues that are especially important for low-wage workers who disproportionately lack these benefits.

Federal budget policies can encourage women's work and increase family income. The Murray-Ryan budget agreement has helped to promote women's economic progress in the workforce, but there will be more to do after that deal expires.

In my written testimony, I focus on six policies that have been tailored to achieve the results we need for our families and our economy. Here this morning I want to just highlight three.

First, the earned income tax credit, child tax credit, and child independent care tax credit are very important to the financial security for all American families, especially low-income families. But we must expand them and, importantly, make the child independent care tax credit refundable.

Second, the 21st Century Worker Tax Cut Act would let two-earner families keep more of what they earn and increase the earned income tax credit for childless low-wage workers. Importantly, it will encourage mothers' workforce participation and help them to better financially support their families and give low-wage workers a better shot at entering the middle class. It is estimated that this tax cut would benefit 7.3 million working families and 13 million childless workers.

Finally, the Family and Medical Leave Insurance Act of 2013 will create an insurance program for nearly every U.S. workers when they need leave to care for a child, a seriously ill family member, or to recover from a serious illness. It draws on what we have learned from three States that have family leave insurance: California, New Jersey, and Rhode Island. From their experiences we know what an effectively run program looks like. Paid leave makes it easier for women to work, improves their lifetime earnings, and can help close the wage gap between workers who provide care and those who do not, while having benefits in terms of productivity and business outcomes.

To conclude, Federal policy can do more to help all women realize their full economic potential. But policies must acknowledge that barriers to women's work manifest themselves differently across the income distribution, because when all women succeed, America succeeds.

[The prepared statement of Ms. Boushey follows:]

Heather Boushey
Executive Director and Chief Economist, Washington Center for Equitable Growth,
before the U.S. Senate Budget Committee on "Expanding Economic Opportunity for Women and Families"

May 13, 2014

Enabling Women to Succeed Builds Strong Families and a Growing Economy

Introduction

I would like to thank Chairman Murray, Ranking Member Sessions, and the rest of the Committee for inviting me here today to testify.

My name is Heather Boushey and I am Executive Director and Chief Economist of the Washington Center for Equitable Growth. The Center is a new project devoted to understanding what grows our economy, with a particular emphasis on understanding whether and how rising levels of economic inequality affect economic growth and stability.

It is an honor to be invited here today to discuss how working women are critical for economic growth, and how federal policy can further advance women's economic progress. My testimony today highlights the many aspects of our economy where gender inequality and economic inequality go hand in hand—to the detriment of many families and our nation's economy—and also where economic inequality among women threatens family well-being and economic growth. Government policies can address these gaps in order to help women succeed, so our economy can succeed.

There are three takeaways from my testimony:

- Women, their families, and the economy have greatly benefited from women's entry into the labor force.
- Yet there are barriers to women's work that manifest themselves differently across the income distribution, which means that not all women realize their full economic potential.
- There are a variety of ways that federal policy can encourage women's labor force participation, among them tax credits and early childhood education programs, which provide critical support for low-income workers and working families. Federal policies such as pay equity and flexible work-family policies can grow our economy by encouraging greater labor force participation among women and increasing women's contributions to family income.

Women's entry into the labor force is one of the most important transformations to our labor force in recent decades. Between 1970 and 2000, the share of women in the labor force steadily increased, from 43.3 percent to 59.9 percent.[1] Today, most women work full time. Before the Great Recession in 2007, the share of women who worked 35 hours or more per week was 75.3 percent.[2]

Women's movement into the labor force also transformed how they spend their days, which is increasingly important for families' economic wellbeing. About two-thirds of mothers are family breadwinners—those bringing home all of the family's earnings or at least as much as their partners—or co-breadwinners—those bringing home at least one-quarter of their families' earnings.[3] Between 1967 and 2007, the most recent economic peak, the share of mothers who were breadwinners or co-breadwinners rose from 27.7 percent to 62.8 percent, and has increased slightly since then as the economic recession wore on.[4] (See Figure 1.)

Figure 1. Share of mothers who are breadwinners or co-breadwinners, 1967 to 2010

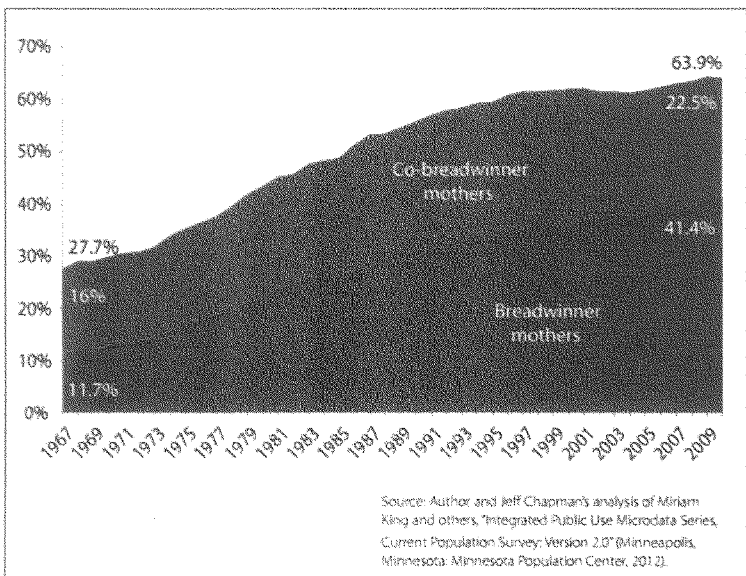


Figure source: Sarah Jane Glynn, *The New Breadwinners: 2010 Update* (Washington, DC: Center for American Progress, 2012).

Women's increased work is important for family incomes and for economic growth. In a paper we released last month, my colleagues Eileen Appelbaum, John Schmitt and I find that between 1979 and 2012, our nation's gross domestic product increased by almost 11 percent due to women's changed employment patterns.[5] This translates to about $1.7 trillion in output in today's dollars. We find that women's economic contribution is roughly equivalent to U.S. spending on Social Security, Medicare, and Medicaid in 2012.[6]

Continuing women's economic progress

Over the past four decades, women have made great economic gains, but more can be done to help women realize their full economic potential. Gender inequality in the workforce still persists between men and women. Additionally, while some women have made great gains in the workforce, too many women are being left behind.

Between 1960 and 2000, women's labor force participation steadily grew and the gender pay gap steadily shrank. But progress has stalled for more than a decade. The share of women in the labor force has not significantly increased since 2000, hovering a bit below 60 percent.[7] Similarly, in 2012 the female-to-male earnings ratio remained at about 77 percent, the same as in 2002.[8]

To be sure, some women have pulled ahead and experienced increases in incomes despite the recent slow-down in women's entry in the workforce. But not all women have experienced these gains. Between 2000 and 2007, for example, higher-wage women saw their real wages increase by four times the amount of women with poorly paid jobs.[9]

One reason is that while some women have made progress entering into professional or male-dominated occupations, many women continue to work in female-dominated occupations that still pay low wages. In 2012, 43.6 percent of women worked in just 20 types of jobs, among them secretary, nurse, teacher, and salesperson. (See Table 1.)

Table 1. Top 20 occupations for women and men, 2012

Occupation	Share of female workers	Occupation	Share of male workers
Secretaries and administrative assistants	4.1	Driver/sales workers and truck drivers	4.0
Registered Nurses	3.9	**All other managers**	3.1
Elementary and middle school teachers	3.5	**First-line supervisors/managers of retail stores**	2.4
Cashiers	3.3	**Retail salespersons**	2.2
Nursing, psychiatric, and home health aides	2.8	Laborers and freight, stock, and material movers, hand	2.0
Retail salespersons	2.5	Janitors and building cleaners	1.9
Waiters and waitresses	2.2	Construction laborers	1.8
First-line supervisors/managers of retail stores	2.1	Carpenters	1.7
Customer service representatives	2.0	Cooks	1.7
Maids and housekeeping cleaners	2.0	Grounds maintenance workers	1.6
All other managers	1.9	Chief executives	1.4
Child care workers	1.8	Sales representatives, wholesale and manufacturing	1.2
Receptionists and information clerks	1.7	Stock clerks and order fillers	1.2
Bookkeeping, accounting, and auditing clerks	1.6	Software developers	1.2
Accountants and auditors	1.6	Automotive service technicians and mechanics	1.2
First-line supervisors/managers of office and administrative support workers	1.5	**Cashiers**	1.2
Office clerks, general	1.4	Construction managers	1.2
Personal and home care aides	1.3	First-line supervisors/managers of non-retail sales workers	1.2
Teacher assistants	1.3	General and operations managers	1.0
Hairdressers, hairstylists, and cosmetologists	1.1	Security guards and gaming surveillance	1.0
Share employed in the top 20 occupations:			
Females	43.6	Males	34.2

Source: Author's analysis of the Center for Economic and Policy Research Extracts of the Current Population Survey Outgoing Rotation Group Files. Includes workers aged 18 to 64.
Notes: Bold items appear on the list for both women and men.

Women across the wage distribution need more access to work-family policies in order to better balance the dual demands of work and home. Polices such as paid sick days, paid family leave, and schedule flexibility would fill an important inequality gap for workers, especially women. This basket of work-family policies would allow both women and men to remain in the labor force while dealing with life's emergencies.

The United States is an outlier among other developed nations in not offering work-family policies to workers.[10] Nor have employers in our country stepped in to provide these benefits. In 2013, only 61 percent of workers had employer-provided paid sick days.[11] An even smaller share of workers—only 12 percent—had access to employer-provided paid leave, which can be used to recover from an illness or care for a family member.[12]

Despite playing a larger role as family breadwinners, women today continue to be more likely than men to provide care to their families. The lack of family friendly policies make it harder for women to stay employed and provide financially for their families. Women who have to quit their jobs in order to provide care harm their future earnings potential. The U.S. Census Bureau found that new mothers who have access to paid maternity leave are more likely to return to their previous employer. About 98 percent of those who return to the same employer do so at their previous pay level or higher. Conversely, less than 70 percent of women who change employers after giving birth earn the same level of pay or higher.[13]

Work-family policies are critical for the strength and size of our labor force. In a 2013 study by Cornell University economists Francine D. Blau and Lawrence M. Kahn, the authors argue that likely one reason why the United States fell from the sixth-highest female labor-force participation rate among 22 Organisation for Economic Co-operation and Development countries in 1990 to the 17th-highest rate in 2010 was because it failed to keep up with other nations and adopt family-friendly policies.[14]

Although most workers do not have access to these important policies, low-wage workers disproportionately lack access to policies to balance work and care. Employers often view policies such as paid leave or paid sick days as perks for higher-paid workers. Too often workers who need these benefits the most—such as low- and middle-wage, young, and less-educated workers—do not have access to them. Workers whose wages are in the lowest 25 percent of average wages are approximately four times less likely to have access to paid family and medical leave than those in the highest 25 percent.[15]

The lack of benefits for women earning the least in our economy is unhealthy for their families, the labor force, and the economy. Poorly paid jobs that do not provide these work-family benefits often offer nonstandard work or varying schedules, which often result in high employee turnover.[16] There is more we can do to boost women's economic progress, and thereby boost the strength of the entire economy.

Federal policy can help working women succeed

Federal policies can encourage women's work and increase family income. Specifically, these six policies are tailored to achieve the results we need for our families and our economy:

- The Earned Income Tax Credit, Child Tax Credit, and Child and Dependent Care Tax Credit
- The 21st Century Work Tax Act
- Broader and less expensive access to child care and early childhood education programs
- Work-family policies, such as family and medical leave insurance, as proposed in the Family and Medical Insurance Leave Act
- Pay equity
- Raising the minimum wage

Let's examine each of these policies briefly in more detail.

Tax credits

With most working women playing the dual roles of breadwinner and caregiver, tax credits can help increase the financial security of American families. The Earned Income Tax Credit is a fully refundable tax credit for low-income working families. The credit is larger for those with dependent children.[17] The Earned Income Tax Credit is an effective anti-poverty policy that encourages work, especially among low-income single mothers.[18] In 2012, this tax credit lifted 6.5 million people out of poverty, according to the Center on Budget and Policy Priorities.[19]

Additionally, there are two other tax credits that help most working families—rather than just low-income families—offset the cost of raising children. The Child Tax Credit refunds families up to $1,000 per year, per eligible child.[20] The Child and Dependent Care Tax Credit refunds families a percentage of total child-care costs, usually 20 percent to 35 percent.[21] The percentage of expenses refunded to families decreases as income rises. However, unlike the Earned Income Tax Credit or Child Tax Credit, this tax credit is not refundable, which means that only families who owe income taxes can benefit from the credit.[22]

Tax credits can benefit both our current and our future workforce. Tax credits provide families with additional income that can be spent on children's skill development. For example, economist Gordon B. Dahl at the University of California-San Diego and economist Lance Lochner at the University of Western Ontario find evidence that increases in family income due to the Earned Income Tax Credit increase children's math and reading test scores.[23]

The 21st Century Worker Tax Act

The 21st Century Worker Tax Cut Act, introduced by Chairman Murray, would help promote women's economic progress in two ways. First, the act proposes a new tax cut that would let low- and middle-income two-earner families keep more of what they earn. The tax cut would provide a 20 percent deduction on a secondary earner's income.[24] Furthermore, it would provide an additional benefit to low-income two-earner families. The 20 percent deduction would reduce their earned income for calculating the Earned Income Tax Credit and thus provide a higher refundable benefit.[25]

This deduction will benefit working mothers and their families in two ways. By deducting a portion of the secondary earner's income, the cut would encourage mothers' workforce participation, thereby helping them to better financially support their families. And it would help low-income working mothers offset the costs of child care through an enhanced refundable Earned Income Tax Credit. This would again further encourage mothers' workforce participation and boost family income. It is estimated that the tax cut would benefit 7.3 million working families.[26]

Second, the 21st Century Worker Act also would help support childless working women. The Act would increase the Earned Income Tax Credit for childless workers to about $1,400 in 2015.[27] Furthermore, it would increase income eligibility and expand the eligibility age for childless workers so more would be eligible for this tax credit.[28] It is estimated that the Act would benefit 13 million childless workers.[29] With women making up nearly two-thirds of minimum wage workers,[30] this expansion would increase the financial security of low-income women, and provide them with a better shot at the middle class.

Child care

In order to work and remain in the labor force, mothers need affordable high-quality child care. As mentioned earlier, tax credits help families manage their child care expenses, but child care remains very expensive for most families. In 2011, the average cost for a 4-year old in center-based care ranged from less than $4,000 a year to more than $15,000 a year.[31] With most working women earning less than $30,000 a year, many cannot afford care or spend a large portion of their earnings on care.[32]

In addition to making child care less expensive, policy should address so called "child care cliffs" for families receiving child-care assistance. In certain states, a slight increase in parent's earnings can push them over the income threshold for child-care assistance, which can result in a sharp increase in child care expenses.[33] Unable to pay for high-quality care, working mothers could turn down a raise or ask for a pay cut to avoid going over the "cliff."[34]

Early childhood education is one of the most important investments in our future workforce. But not all child care meets the standards to be considered an early childhood education program. It is important that policies expand access to high-quality early childhood education programs, especially to low-income children. Research finds that children who participate in early childhood education programs are more likely to do better in school, graduate and attend college, and are less likely to get involved with crime and become teenage parents.[35] There are also large benefits to society. An academic study found that for every $1 invested in high-quality preschool, the U.S. economy saves $7 in future public costs due to increases in workers' productivity, reduced remedial education costs, and reduced crime.[36]

Head Start

The Bipartisan Budget Act of 2013, also known as the Murray-Ryan Budget Agreement, made important steps toward expanding early childhood education programs to working families. The Act provided about $8.6 billion in Head Start funding and for the President's Early Head Start-Child Care Partnerships. This amount reversed the entire sequester cut to Head Start, about a half billion more than 2013 funding.[37] In fiscal year 2014, more low-income families can utilize this comprehensive early childhood program. About 57,000 children were dropped from the program in 2013.[38]

Family and Medical Leave Insurance

Women need polices to help them balance work and family care so they can remain in the workforce and help grow our economy. Family and medical leave insurance—also known as paid leave—would provide a critical support for workers—men and women alike—allowing them to take temporary leave from work to recover form an illness or care for a loved one.

The Family and Medical Insurance Leave Act of 2013, also known as the FAMILY Act, would relieve the financial burden of taking unpaid time off, providing paid leave for nearly every U.S. worker.[39] Introduced by Representative Rosa DeLauro and Senator Kirsten Gillibrand, the FAMILY Act draws on what we have learned from states that have family leave insurance and from other federal benefit programs.

Today, only three states provide paid leave to their workers: California, New Jersey, and Rhode Island.[40] These three states provide years of useful experience to other states interested in providing paid leave to their workers. To encourage states to offer paid leave programs, the President's Fiscal Year 2015 budget requests a $5 million State Paid Leave Fund.[41]

Paid leave makes it easier for women to work and have higher lifetime earnings. Research by economist Christopher J. Ruhm at the University of Virginia and researcher Jackqueline L. Teague find that paid parental leave policies are associated with higher employment-to-population ratios and decreased unemployment for all workers.[42] Ruhm and Teague also find that moderate leaves—10 weeks to 25 weeks—are associated with higher labor-force participation rates for women.[43]

By remaining in the labor force, women are able to earn more during their careers, increasing families' financial security.[44] Furthermore, there is evidence that these work-family policies could also help close the wage gap between workers who provide care and those who do not.[45]

Pay equity

The pay gap today persists for all women. On average, working women only make 77 cents for every dollar earned by men.[46] This gap means that women make $11,084 less than men per year in median earnings.[47] If women were paid the same amount as their male counterparts, their additional earnings could help improve their families' financial security as well as provide additional tax revenue to the government.

Making sure that women receive equal pay for equal work not only affects their lifetime earnings but also strengthens the economy. The Institute for Women's Policy Research finds that if women had received pay equal to their male counterparts in 2012, the U.S. economy would have produced $447.6 billion in additional income.[48] This is equal to 2.9 percent of 2012 gross domestic product, or about equal to the entire economy of the state of Virginia.[49]

The President's Fiscal Year 2015 budget requests $1.1 million to help eliminate pay discrimination among federal contractors. The funds would be used by the Office of Federal Contract Compliance Programs to strengthen enforcement efforts.[50]

Minimum wage

Raising the minimum wage is critical for closing the wage gap. Low-wage workers are disproportionately women. Nearly two-thirds of minimum wage workers are women.[51]

Raising the minimum wage would provide many women—who represent 49.2 percent of total U.S. employment[52]—with the economic security they need to succeed. According to calculations from the Economic Policy Institute, approximately 28 million workers would see a raise if the minimum wage were raised to $10.10 by July 2016.[53] Fifty-five percent of the affected workers would be women. This share varies by state, and is as high as 63.3 percent in Mississippi.[54]

Conclusion

Women's employment is critical to their families and to our nation's economy. Federal policy can do more to help women realize their full economic potential no matter where they are on the income ladder.

The Murray-Ryan Budget agreement has helped promote women's economic progress in the workforce, but there will be more work to do after the deal expires.

We need to preserve tax credits such as the Earned Income Tax Credit and funding for early childhood education programs such as Head Start. Women are more likely to be low-wage workers, which means they and their families are more vulnerable to spending cuts. Passing the 21st Century Worker Tax Cut Act would provide two critical tax credits to low-wage working women, helping increase their earnings and give them a better shot at entering the middle class.

In addition, ensuring pay equity and providing work-family supports such as the FAMILY Act to all working women will further their economic progress. Closing the wage gap and raising the minimum wage boosts women's earnings and could generate additional tax revenue. Work-family policies help breadwinner mothers remain in the labor force and better financially provide for their families.

As a critical driver of economic growth, women need polices that expand workforce opportunities. Yet to help all women succeed, polices must acknowledge that barriers to women's work manifest themselves differently across the income distribution. To echo House Minority Leader Nancy Pelosi, "when [all] women succeed, America succeeds."[55]

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Chairman MURRAY. Thank you very much.
We will turn to Ms. Duchon.

STATEMENT OF ANNMARIE DUCHON, ASSOCIATE DIRECTOR OF ACCOMMODATION SERVICES, UNIVERSITY OF MASSACHUSETTS, AMHERST

Ms. DUCHON. Thank you, Chairwoman Murray, Ranking Member Sessions, and all the Senators and staff here today. My name is AnnMarie Duchon, and I am a member of MomsRising. I am honored to be here today to tell you my story and to give voice to the women who cannot be here today to share their experiences.

My work environment is not the sort of place where you would think we would have a problem with unfair pay practices. I work at a progressive public university that prides itself on its commitment to diversity. I am the associate director of an innovative disability services office, and I love my job. I am continuously learning and growing, and I get to work collaboratively with colleagues that I greatly respect. Every day I oversee programs that we have designed to assist people with disabilities gain full access to the university environment. However, even in an environment like this, wage discrimination based on gender still existed.

I am telling my story not because I hate my job or because I have any ill will toward my employer or toward the male colleague who made a higher salary than I did. In fact, we are very good friends. But this story is not about him; it is about me. And it is a story that is all too common for women, and moms in particular, who face gender wage discrimination. It is unfair, it is bad for our economy, and, to borrow a phrase, it is time to put an end to the "Mad Men" era policies.

I began working for the disability services office at the University of Massachusetts, Amherst in 2004. I was originally hired as a member of a team of consumer managers. From the moment I was hired, I made less than a male coworker doing the same job. This was the case even though our resumes were nearly identical. We both have master's degrees and comparable professional experience. In fact, we even graduated from the same University on the very same day.

When I became aware of this wage disparity, I asked my employer if I could be paid more. She said no. I was told that because my male coworker had accepted a pay cut to take this job, he should be paid more. But here is a fact: I, too, had taken a pay cut to accept this position, and my family depends just as much on my wages as my coworker's family depends on his. This is the sort of ridiculous stereotyping—the assumption that because my male coworker needed the higher salary and I did not—that is still prevalent in too many workplaces today and is used to justify wage discrimination. My raise was denied, and I was being paid less because I am a woman.

After 5 years, my male coworker and I were promoted at the very same time. Since 2009, we both have held the position of associate director. And although I do love my work, it really hurt to know that my contributions were worth less than his were. Initially, I was hopeful at the time of the promotion that my employer would finally acknowledge my work and equalize my pay. But instead, I was disappointed to learn that the wage gap increased by approximately $1,400.

Recently, my husband's teaching job was threatened due to budget cuts. This situation made me really think about what those lost wages were costing my family. When I added those lost wages up and calculated that my family had lost over $12,000 in income, it was heartbreaking. My husband and I are both first-generation college students. We have crushing student loan debt. On paper, we look like we are doing just fine. But in reality, money is tight. We pay as much on our student loan payments each month as we do for our mortgage. Our daughter Gracie is in full-time daycare because neither of us can afford not to work. $12,000 in lost wages accounts for a year's worth of child care or 10 months' worth of our mortgage or 10 months of student loan payments—all our expenses that we struggle to pay for.

So I tried again. I approached my employer again this time with a visual chart that showed the stark salary difference between my coworker and me. And I repeated my case that I should be paid fairly. This time, my employer agreed to raise my salary to equal my male coworker's. And 5 months later, I received a paycheck that finally reflected equal pay.

I was eventually able to get paid fairly, but it took more than 7 years of difficult conversations and cost me thousands in lost wages—all of this in an environment where I could have open conversations about my salary without fearing repercussions.

I was thrilled last month when President Obama took Executive action to ensure that Federal contractors are barred from retaliating against employees who discuss their salary information. But we still need Congress to pass the Paycheck Fairness Act, which would allow all workers to talk about their salaries to their coworkers without the fear of being fired.

Millions of women trying to raise families while working minimum wage jobs have not seen an increase in years. Congress has the opportunity to right these wrongs. It is time to increase minimum wage, time to do something about the student loan crisis, and it is long past time to pass the Paycheck Fairness Act.

I hope that by the time my daughter Gracie is able to understand what wage discrimination is all about, it will have long since been resolved. According to recent research, at the rate we are going, if we do not take action, the wage gap will not close on its own until my 5-year-old girl is 48. Forty-eight. Instead, I hope that the idea of Mommy being paid less than a man while working at the same job will be a relic concept for her, kind of like life before the iPhone.

I am honored to be here today, and I thank you again for the opportunity to testify.

[The prepared statement of Ms. Duchon follows:]

MomsRising.org

Testimony of AnnMarie Duchon
Before the Senate Budget Committee
May 13, 2014

Thank you Chairwoman Murray, Ranking Member Sessions, and all the Senators here today. My name is AnnMarie Duchon, I'm a member of MomsRising and I am honored to be here today to tell you my story and also give voice to all the women who can't be here today to share their experiences.

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After 5 years, my male coworker and I were promoted at the same time. Since 2009, we both have held the position of Associate Director. And although I do love my work, it hurt to know that my efforts were worth less than his. Initially, I was hopeful at the time of the promotion that my employer would finally acknowledge my work and equalize my pay. But instead, I was disappointed to learn that the wage gap increased.

Recently, my husband's teaching job was threatened due to budget cuts. This situation made me think about what those lost wages were costing my family. I added those lost wages up and calculated that my family had lost over $12,000 in income.

My husband and I are both first generation college graduates with crushing student loan debt. On paper, it looks like we are doing well, but in reality, money is tight. We pay as much on our student loan payments each month as we do for our mortgage. Our daughter Gracie is in full-time daycare because neither of us can afford not to work. $12,000 in lost wages accounts for a year's worth of childcare, or 10 months worth of mortgage or student loan payments. All expenses we struggle to pay for.

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Yes, I was eventually able to get paid fairly, but it took more than seven years of difficult conversations and cost me thousands in lost wages. All of this in an environment where I could have open conversations about my salary without fearing repercussions.

I was thrilled last month when President Obama took executive action to ensure that federal contractors are barred from retaliating against employees who discuss their salary information. But we still need Congress to pass the Paycheck Fairness Act, which would allow all workers to talk about their salaries to their coworkers and employers without worrying about being fired.

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I hope that by the time my daughter Gracie is able to understand what wage discrimination based on gender is all about, it will have long since been resolved. According to recent research, at the rate we're going, if we don't take action, the wage gap won't close on it's own until my 5 year old is 48 years old, or even much much older.

Instead, I hope that the idea of Mommy being paid less than a man while working at the same job will be a relic concept from ancient times (kind of like life without the internet or smartphones!)

I am honored to be here today and thank you again for the opportunity to testify.

AnnMarie Duchon
78 California Avenue
Springfield, Ma 01118

May 19, 2014

Dear Senator Wyden,

Thank you for soliciting our ideas on improving social safety programs for families. While I am not an economist, I have listed what seem like common sense solutions based upon my experience as a full-time employee and mother.

Pass the Paycheck Fairness Act: This would enhance pay-equity practices in the workplace. Pay transparency in the workplace enhances productivity regardless of gender and when discrimination has taken place, it can be rectified easier.

Pass ENDA (Employment Non-Discrimination Act): Currently one can be fired from their federal job as well as in most states, simply based on their sexual orientation. Many lesbian, gay or bisexual folks are parents and heads of households. Without such protections, we put families at risk of economic hardship.

Pass the Healthy Families Act: People shouldn't have to choose between going to work sick, or staying home with a sick dependent, or losing their pay check and even possibly their jobs.

Join the ranks for other world countries, the majority of which have family-friendly policies: In many other first world countries, **childcare** is subsidized, widely available and provided while cost is determined on a sliding scale based on income. **Paid family leave** for parents to have time to care for their infants or adopted children and create the necessary bonding experience that results in healthier children and families. At the very least, allow folks to purchase paid **family leave insurance**, so measures are in place, should the need arise.

Increase tax breaks for families: Currently employees can participate in a pre-tax dollar incentive "Dependent Care" program up to $5,000 per family. This program is run similarly to a Flexible Spending Account, although the money must be earned in advance. This allows families to use pre-tax dollars to reduce their tax burden. Unfortunately, full time childcare typically costs approximately $10,000 a year, per child. **Increasing** the **Dependent Care limit to $10,000** would help families.

Tax incentives/breaks for school uniforms and supplies: With increasing numbers of public schools requiring uniforms for students, a **tax deduction for** such **supplies** would help off-set educational costs.

Provide incentives for employers to provide day-care and flexible work hours to their employees: With so many family members **responsible for children and/or elders**, this should apply across the board. Additionally, we need to **remove the cultural assumption that caring for others is women's work**. Having such flexibility for men would encourage more men to take up such responsibilities, therefore **reducing the "second shift" burden on women.**

Increase the minimum wage & encourage early childhood education: Currently a full-time minimum wage earner could never afford child-care without some sort of subsidy. We know that **early childhood education pays for itself** with less truancy, reduced drop-out rates, increased health benefits and reduction in the likelihood of imprisonment for the children all the while, increasing the productivity of the working parent while reducing their number of absences and tardiness hence, strengthening the workforce.
I hope you find such suggestions helpful. Thank you again for soliciting feedback from those of us working moms who are on the front line.

Sincerely,

AnnMarie P. Duchon, M.Ed.

Chairman MURRAY. Thank you very much.
Ms. Schaeffer?

STATEMENT OF SABRINA L. SCHAEFFER, EXECUTIVE DIRECTOR, INDEPENDENT WOMEN'S FORUM

Ms. SCHAEFFER. Chairman Murray, Ranking Member Sessions, and members of the Committee, thank you for inviting me here today to discuss what I view as a serious shortcoming to the proposed Paycheck Fairness Act.

My name is Sabrina Schaeffer, and I am the executive director of the Independent Women's Forum. We are a nonprofit organization, and our mission is to increase the number of women who value and understand free markets and personal liberty. And we respond to those who portray society, and especially the workplace, as inherently unfair to women because we know it is simply not true.

I come to this issue not just as the head of IWF but also as a working mother. I have three young children ages 6, 5, and 2, and I understand the very real need for plentiful jobs, fair wages, and workplace flexibility. And I am aware of the different factors women weigh when making decisions about what types of jobs to pursue and how to balance work and family responsibilities.

It is those decisions and tradeoffs that should be at the heart of the discussion about workplace fairness. But proponents of the Paycheck Fairness Act usually begin their argument by citing the faulty 77-cent wage gap statistic—that women only make 77 cents for every dollar a man earns. But to have an honest conversation about the workplace and about women's earnings, we need to stop blindly repeating this number.

We all know that this statistic is grossly overstated, as every serious study has demonstrated, including those done by liberal groups like the American Association of

University Women and the 2009 CONSAD Research commissioned by the Department of Labor under this administration.

The Department of Labor statistic compares the earnings of average full-time working man to average full-time working woman, which shows that women actually earn about 81 percent of what men earn. But this is not the equivalent of comparing coworkers performing the same job. It is a comparison of averages, and it is like comparing apples to oranges.

This number does not take into consideration any of the many important factors—from college major, work history, industry, specialty, hours spent working each day, to name a few—which have a significant impact on how much someone earns, because when those factors are taken into account, the pay gap shrinks to as little as 4 cents.

Discrimination may explain some of this remaining gap, and there are bad employers out there, although there could be other causes, such as women being more reluctant than men to negotiate starting salaries and to ask for raises. And knowing this is important so I can help close that small remaining wage gap by being more proactive on my own behalf and by teaching my daughters to be comfortable talking about money.

Even the White House conceded on Equal Pay Day this year that the wage gap statistic is misleading. Betsey Stevenson, a member of the White House Council of Economic Advisers, said she "completely misspoke" when suggesting that gap was evidence of discrimination.

Still, President Obama, Democrats here in Congress, and progressive women's groups continue to use this statistic to try to convince women that they are routinely suffering massive wage discrimination to justify growing Government in the name of protecting women.

And that is how they sell the Paycheck Fairness Act. They suggest that it would advance the cause of pay equity and help women earn more. But the bill's sponsors rarely mention what the legislation would actually do and whom it would really benefit. And that is probably because the legislation's focus is not on increasing economic opportunity for women, which we all want, but it is on facilitating more lawsuits against employers.

Consider what would happen if this law were to pass. Employees would be forced to opt out of, rather than into, class action lawsuits, making it easier for lawyers to get a class certified and increasing the potential for a jackpot award.

Currently, victims of workplace discrimination can receive back pay for the earnings they were denied, as well as punitive damages of up to $300,000. The Paycheck Fairness Act would allow unlimited punitive damage awards, including for unintentional discrimination. This dramatically increases the motivation for both lawyers and employees to sue in hopes of windfall payouts.

Most importantly, the proposed law would severely limit how employers could justify compensation decisions. Currently, businesses can justify differences in pay on factors like experience and job responsibilities. But under the Paycheck Fairness Act, employers would only be justified in paying men and women differently if they can prove to the Government that it is a "business necessity." Such ambiguity would be an open invitation to trial lawyers. Employers would be targets of potential lawsuits for essentially any compensation decision—whether it is giving a bonus for superior performance or offering an employee more flexible hours in exchange for reduced compensation.

Ultimately, employers would have the incentive to create rigid, one-size-fits-all compensation packages which would hurt both men and women.

The Paycheck Fairness Act is not necessary because equal pay is already the law. The Equal Pay Act and the Civil Rights Act protect employees from gender-based wage discrimination. The Lily Ledbetter Fair Pay Act extends the amount of time a worker has to bring a suit against her employer.

So what is the alternative? Well, women make up nearly 50 percent of the workforce today and are incredibly valuable to businesses. The workplace is changing quickly and for the better. Providing fair pay, sensible leave policies, and more generous benefit packages are increasingly being used to attract and retain women.

And where businesses lag behind, there is a robust industry devoted to not just helping women sue, like the Paycheck Fairness Act does, but to overcoming remaining hurdles in the workplace. 85

Broads, Negotiating Women, She Negotiates—these all help women maximize their success at work.

The goal of public policy ought to be to give women and men equal opportunities to pursue their vision of happiness. But we should not be fixated on creating equal outcomes. Some people will choose to take lower-paying jobs they find personally fulfilling; others will be willing to work 80-hour weeks to maximize their pay. That is why job creation and growth—not more lawsuits—is the real key to expanding economic opportunity for women and their families.

Thank you.

[The prepared statement of Ms. Schaeffer follows:]

STATEMENT OF

SABRINA L. SCHAEFFER

EXECUTIVE DIRECTOR, INDEPENDENT WOMEN'S FORUM

BEFORE THE

SENATE BUDGET COMMITTEE

ON

EXPANDING ECONOMIC OPPORTUNITY FOR WOMEN AND THEIR FAMILIES

May 13, 2014

Chairman Murray, Ranking Member Sessions, and Members of the Committee: Thank you for inviting me to be here today and for the opportunity to discuss the so-called wage gap, the very serious shortcomings of the proposed Paycheck Fairness Act, and workplace fairness.

My name is Sabrina L. Schaeffer, and I am the executive director of the Independent Women's Forum. We are a nonprofit organization, and our mission is to improve the lives of Americans by increasing the number of women who value free markets and personal liberty. And we respond to those who seek to convince women that society – and especially the workplace – is inherently unfair to women because it's simply not true.

Perpetuating the myth that women are a victim class harms women by making them feel weak, and it distracts them from learning effective ways to increase their earnings, expand their influence in the workplace, and pursue the lives they want.

But I come at this issue not just as the head of a free market think tank, but also as a mother. I am the mother of 3 young children ages 6, 5, and 2, so I am familiar with the very real need for plentiful jobs, fair wages, and workplace flexibility. I'm aware of the many factors that people, but particularly women, must weigh when making decisions about what types of jobs to pursue and how to balance work and family responsibilities.

It's those decisions and tradeoffs that are at the heart of the discussion about workplace fairness. Proponents of the Paycheck Fairness Act usually begin their argument by citing the faulty 77-cent wage gap statistic – that women only make 77 cents for every dollar a man earns. But to have an honest conversation about the workplace and about women's earnings, we need to stop blindly repeating this number.

We all know that this "77 cents on the dollar" statistic is grossly overstated, as every serious study – *including* those done by liberal groups like the American Association of University Women and the CONSAD Research commissioned by the Department of Labor in 2009 during this administration – has demonstrated.

The Department of Labor statistic compares the earnings of the average full-time working man to the average full-time working woman, which shows that women earn about 81 percent of what men earn. This isn't the equivalent of comparing coworkers performing the same job. It's a comparison of averages, and it's equivalent to comparing apples to oranges.

This basic comparison doesn't take into consideration any of the many important factors – from college major, work history, industry, specialty, hours spent working each day, to name but a few – which have a significant impact on how much someone earns. When those factors are taken into account, the pay gap shrinks to as little as 4 cents.

Some of this remaining gap may be explained by discrimination, although there could be other causes, such as women being more reluctant than men to negotiate starting salaries and to ask for raises. That's why it's important to have a fact-based conversation. Because I can do something to help close that small remaining wage gap by being more proactive on my own behalf and by teaching my daughters to be comfortable talking about money.

This year, even the White House conceded on "Equal Pay Day" that the wage gap statistic is misleading. Betsey Stevenson, a member of the White House Council of Economic Advisers said she "completely misspoke" when suggesting that the 77-cent wage gap statistic was evidence of discrimination.

Nevertheless, President Obama, Democrats here in Congress, and liberal women's groups continue to use this faulty statistic to try to convince women that they are *routinely* suffering massive wage discrimination and to justify growing government in the name of protecting women.

That's how they sell the Paycheck Fairness Act. They suggest that it would advance the cause of pay equity and help women earn more; but the bill's sponsors rarely mention what the legislation would *actually* do and who it would *really* benefit. That's probably because the legislation's focus isn't on increasing economic opportunity for women – it's facilitating more lawsuits against employers.

Consider what would happen if this law were to pass. Employees would be forced to opt out of, rather than into, class action suits, making it easier for lawyers to get a class certified and increasing the potential for a jackpot award. The Paycheck Fairness Act also raises current caps to make the potential payouts from lawsuits much larger.

Under existing law, victims of workplace discrimination are already protected and can receive back-pay for the earnings they were denied, as well as punitive damages of up to $300,000 when discrimination is found to be intentional. But the Paycheck Fairness Act would allow *unlimited* punitive damage awards, including for *unintentional* discrimination. This dramatically increases the motivation for both lawyers and employees to sue in hopes of windfall payouts.

Most importantly, the proposed law would also dramatically limit how employers could justify their compensation decisions. Under current law, businesses can justify differences in pay based on experience, job responsibilities, performance, and business necessity. But under the Paycheck Fairness Act, employers would only be justified in paying male and female employees differently if they can prove to the government it's a "business necessity."

For example: A retail store needs to hire a floor manager. A male manager on the 3rd floor has a college degree and is being paid more because the retailer thinks it's valuable to them. The female manager on the 2nd floor doesn't have a college degree, so they are paying her less. But the retailer is exposed because Washington doesn't think that a college degree is a "business necessity" to be a floor manager.

The ambiguity in the law and this definition would be an open invitation to trial lawyers. Employers would be targets to potential lawsuits for essentially *any* compensation decision – whether that's making a counter-offer to retain a valued employee, giving a bonus for superior performance, or offering an employee more flexible hours in exchange for reduced compensation.

The bottom line is that the Paycheck Fairness Act would not create either "fairness" or equal pay; it would simply expand the definition of "wage discrimination," making it easier, as with the *Lilly Ledbetter Fair Pay Act*, to file lawsuits, and open businesses up to greater litigation and uncertainty—all of which would be devastating to workplace flexibility and job creation and bad for both men and women. Though, ultimately, the Paycheck Fairness Act would hurt women more, by becoming more costly to employ, and by forcing employers to worry about the increased risk of litigation.

Let's remember that equal pay is *already* the law. There are two federal laws in place to protect employees from gender-based wage discrimination—the Equal Pay Act (1963), and the Civil Rights Act (1964). Also, the Lilly Ledbetter Fair Pay Act, which the president signed into law in 2009, further extends the amount of time a worker has to bring a discrimination suit against her employer.

Even the *Washington Post*'s editorial board agrees that the Paycheck Fairness Act is a flawed approach to job bias. And the Committee should consider how the Paycheck Fairness Act would provide a tremendous incentive to employers to create rigid, one-size-fits-all compensation packages, and may even encourage them to reduce their workforce altogether to limit their legal exposure. And in this down economy businesses would be wasting more of their resources on lawyers while spending less investing in new workers to grow their core business.

So what's the *alternative* to this approach to pay equity? How can we make sure women *are* being paid fairly?

Let's remember women make up nearly 50 percent of the workforce today, and are incredibly valuable to businesses. What's more the workplace is changing – quickly and for the better. Providing fair pay, sensible leave policies, and more generous benefit packages are increasingly being used to attract and retain women.

And where businesses may still lag behind, there is a robust private industry devoted to helping women achieve higher pay. Sheryl Sandberg was not the first woman to write the "rules for success." A cursory search on Amazon will bring up dozens of other books that teach women how to negotiate and how to improve their standing in the workplace.

Hosts of organizations like 85 Broads, Negotiating Women, She Negotiates, and C4CM (Center for Competitive Management) work to help women maximize their success at work: Conferences, networking events, corporate training programs, individual training courses, video seminars.

In short there is an entire industry devoted to not just helping women *sue* like the Paycheck Fairness Act would do, but to actually overcoming remaining hurdles in the workplace.

Government can make it easier for women (and men) by encouraging job creation and reducing the burdens they place on businesses.

Rather than advancing new laws like the Paycheck Fairness Act, which is unfair and will be a jobs killer, policymakers should work to ensure that there is a robust job market, streamline the tax system to ensure families can keep more of their take-home pay, and allow men and women to make the choices about how best to balance their career, family, and other life goals.

The goal of public policy ought to be to give women and men equal *opportunities* to pursue their vision of happiness. We shouldn't be fixated on creating equal outcomes. Some people will choose to take lower paying jobs that they find personally fulfilling, some are willing to work 80 hour weeks to maximize their pay, and others cut back hours so they can be in the house when their kids get home everyday after-school. Those are individual decisions that ought to be made by free people, and Congress should be creating a business environment that encourages companies to create that kind of diversity of work opportunities.

Job creation and growth—not more lawsuits—is the real key to expanding economic opportunity for women and their families.

Thank you again for your time, and I look forward to your questions.

Chairman MURRAY. Thank you. Many of you know I care a lot about making sure that children have access to high-quality early childhood education, including child care. And I often talk about the long-term benefits that these programs have for the children who experience them. But it is really important to remember that child care is a vital work support for mothers as well. We know that mothers who have access to reliable child care have less absenteeism and tardiness from work and they are more productive.

However, we also know that child care is still prohibitively expensive for many families. For example, in every State in the U.S., center-based care for an infant exceeds 25 percent of median income for single parents.

So, Dr. Boushey, I wanted to ask you, can you speak to the economic impacts of these challenges that families face in accessing child care?

Ms. BOUSHEY. Certainly. Thank you. I believe, you know, in some ways AnnMarie here to my left actually very eloquently described her own challenges that I think are important to sort of recognize, that child care is so costly for families. I believe you said it was $12,000 a year. When you look across the country, you see that the average cost for a 4-year-old in center-based care ranges from less than about $4,000 to more than $15,000 or even $20,000 a year. And with most working women earning less than $30,000 a year, that is an enormous cost for families to have to bear.

But let us also put this into a bit of a broader context. Most families that need child care for very young children are young families. Half of women have their first child by the age of 25. When people enter the labor force, that is when their wages are lowest. It is also when they have their biggest student loan debt if they went to college, regardless of whether or not they graduated if they started college. And I will note that women are more likely than men to take out student debt, and when they do, they take on larger amounts of loans.

So all of this compounds for workers at the start of their careers, making it very difficult to afford child care and pushing a lot of families into this very false dichotomy between her working and not working, and the impact on the family budget.

Let me be very clear. Those years that women lose in the labor force, if it is not by choice—or even if it is by choice—have a lifetime impact on their earnings, on their retirement security, on their ability to grow and develop their careers. This is not just a choice that families make when that child is 2 or 3 and that mom is young and that family is young. This is a decision that affects the rest of her career, their family economic security, and feeds right into how we think about whether or not Social Security is providing that family with enough benefits. Those are years that she has lost paying into. So that is on the work side.

I also want to stress that, as an economist, one of the things that we now is that early childhood education is one of the most important things we need to do to be developing our Nation's human capital. And the fact that we are leaving this unattended to in such a large way and so different than other developed countries is shooting ourselves in the foot for the next generation of workers.

Chairman MURRAY. Well, thank you very much.

Ms. Duchon, I assume that your experience reflects what you just heard.

Ms. DUCHON. Absolutely. I just want to add, one of the ways that we have tried to keep costs down is we have my mom watch my daughter once a week. It sort of keeps our cost down by about $2,400 a year. But she does not live close, so she drives almost 4 hours a day to do that.

Chairman MURRAY. So child care access impacts on lots of people there.

Dr. Boushey, I also wanted to ask you about retirement security. About half of our workers in the private sector have access to an employer-based retirement plan. That is a figure that drops to about 30 percent for workers and businesses with fewer than 100 employees. And, surprisingly, in such a wealthy Nation, about 45 percent of all workers report that they have no retirement assets at all. So that is pretty bad news for everyone, but in particular, it leads to worse retirement conditions for women. Among people 65 and older, women have less retirement income, face a greater risk of poverty than men, and one in three women depend on Social Security as their sole source of income.

So I think it is no exaggeration to say that we face a retirement crisis, particularly for women, and, Dr. Boushey, I wanted to ask you, there are a lot of policy steps that could be proposed. Give me your top two to address this.

Ms. BOUSHEY. Well, I would start by looking at women's labor supply, so I would focus on policies that help women move up the job ladder and stay in the labor market—policies such as addressing child care, policies such as the family and medical leave insurance legislation that has been put on the table, policies that make it possible for women to earn a fair day's pay. So that basket, if you care about retirement security, you have to care about what is happening when people are in the labor market.

But then, of course, we also need to attend to making sure that Social Security is a vibrant and strong program. There are a lot of new proposals out there that people are talking about to make sure that people that have their savings in 401(k)s are getting a good deal. That is one of the challenges. We have moved from a pension system which got a pretty good deal for workers and their families to these 401(k)s where often there are exorbitantly high fees and where people are sort of left on their own to make decisions about investments that are challenging even for a Ph.D. economist to know what kinds of investments you should be focusing on.

So the USA Retirement Funds Act and the SAFE Retirement Plan that the Center for American Progress has put together, both focus on how is it that we can make 401(k)s a better financial tool for families. So I would focus there as well.

Chairman MURRAY. Thank you very much, and I am out of time. Senator Sessions?

Senator SESSIONS. Thank you. Senator Wyden is a member of this Committee and chairs the Finance Committee. He and I have been talking about retirement savings and the need for that and the importance of it, Ms. Boushey, so I think it is something to look at. And I am concerned about fees. Fees can erode significantly a person's savings over time, and I do not think a lot of people understand that. The Federal thrift program is probably one of the best because it has such low fees, and I would like to see more of that.

Senator Wyden believes that we can start saving younger and that would help everybody learn more about savings. And he and I are talking about some of the things that we could do there.

Ms. Schaeffer, you have been frank about some of your concerns about the way we have approached this issue. I think some of the points you make are valid and should be heard. As we establish public policy, it is awfully difficult to do so. I am confident there are women being taken advantage of today, and there are men being taken advantage of sometimes, too, not really knowing, like Ms. Duchon, to stand up and defend themselves.

But tell us what you think are some of the things that would be most helpful to allow women to fulfill their highest values to make the choices they would like to make for themselves or their families. And are there any policies that the Government could carry out that would help that?

Ms. SCHAEFFER. Thank you. And I agree that discrimination occurs. I agree that there are bad employers out there. But I do not think that the Paycheck Fairness Act will solve that problem.

I think the very best thing for women, for men, and their families is strong economic growth and job creation. This gives all workers flexibility, right? If you are in a bad job, you have the opportunity to look for a new job. So I think it is much better for us to focus our resources and our attention on growing our economy so that people have more choices. Because as I tried to identify, everybody is going to want to lay out their life plan in a different way, and we cannot have sort of these top-down Government-run solutions because it simply will not work.

I think better than many of these Government-run ideas is to allow a market in education so that women can more easily get educated themselves and have more choices for their children at an earlier age. We currently do not have that. Most supporters of the Paycheck Fairness Act have stood up and blocked most educational freedom bills in their States.

I think we need to stop picking winners and losers in the energy industry so that women can afford quality goods that are at lower prices, so that they can afford to fill up their car and get to work every day.

We need to streamline our Tax Code so that women and men are taking home more of their take-home pay.

We need to make sure that women and men own and control their health care dollars, so I would call for repealing Obamacare.

These are all real solutions that would require reining in what I view as the progressive State and allowing individual families and individuals to have more control over the choices in their lives.

Senator SESSIONS. Ms. Boushey, as you look at women and the choices they make, which are good for America if they choose to invest a lot of their time and effort in raising children in the next generation, that can put them behind financially. Do you have any thoughts about how we can deal with that in a realistic way?

Ms. BOUSHEY. Well, I think a couple of things. Certainly it is important—right, we have to start from the premise that family is, of course, very important, and raising the next generation is a critically important job both for families but also for our economy more generally.

The United States stands alone in not supporting families as they actually live and work today. The reality is that most parents are in the labor force, most children are being raised by a family that does not have a stay-at-home caregiver, and that poses challenges for children. But, of course, at the other end, it means that most families do not have someone at home who can help when an elder may need a little bit of help. Somebody has got to take time off work. And we have not thought enough deeply about how to update our labor standards and our social insurance programs and our child-care systems to really help families.

So I would focus on making sure that families actually have a choice, that child care is high quality and accessible to everybody, not just the very wealthy. And one of the things we forget about child care is you cannot scrimp on it. You cannot, you know, get cheaper-cost child care and think that that is just going to be okay for your kids, right? The kind of care is the kind of care that you need. You need a qualified teacher. It has got to be of sufficient quality. And we do not go far enough to make sure that every child in America and every family in America has access to that kind of quality at a cost that families can afford, again, when they are young and they do not have a lot of money. This is something that we need to step in and really help them with so they can make those choices honestly.

Senator SESSIONS. Thank you.

Chairman MURRAY. Senator Kaine.

Senator KAINE. Thank you, Madam Chairwoman, and thank you to the witnesses. A lot of topics of interest. Let me just ask about one that I am really focused on, which is sort of nontraditional career fields and career and technical education. Senator Baldwin and I, Senator Portman and others are doing some work in this area, and we are having a fascinating debate now in the Armed Services Committee about the opening up of all these combat MOSs that have heretofore been gender exclusive for men, opening them up to women and providing women opportunities to meet the same standards that men meet in those areas.

Traditionally, women have been underrepresented in some of what we call "nontraditional fields"—construction, engineering, manufacturing areas. The Perkins Career and Technical Education Act requires States to set targets for representation of women in these nontraditional career fields.

But I would like just each of you to talk about kind of workforce training as advancing employment opportunities for women, and particularly, you know, what we could do in the career and technical education or workforce training area that would help women be more equitably represented across the whole spectrum of professions and jobs. I just would like each of your thoughts on that.

Ms. BOUSHEY. I will go first and be brief. I think that is an enormously issue. It is one that we have been working on for quite a long time, trying to get women into a wider array of occupations. And I would just sort of add one other point to that, and I am happy to also follow up in writing on some specifics on what we can do in that area. But one of the things that we are learning from the literature is that it is not just about getting women into different occupations. It is that inequality is actually occurring within occupations.

Claudia Goldin, who is a professor at Harvard, has written an enormously important new study that just came out documenting how it is actually the working conditions in terms of hours and flexibility that make all the difference for inequality within occupations. So I do think we need to make sure that we are opening up all sorts of professions to women.

Just one more stat, and then I will stop. There is a Stanford professor and some folks from the University of Chicago that had this amazing study that came out a year and a half ago that found that between 1960 and 2008, a fifth, a full fifth of U.S. economic growth was because of the opening up of professions to women and minorities. This is enormously important, and I can follow up in writing with some specifics.

[The information follows:]

Workplace Policies for Working Families

Paycheck Fairness

- **Pay Transparency would help reduce the wage gap, as well as boost worker productivity and economic output.**
    - Research by Emiliano Huet-Vaughn (doctoral candidate in the Department of Economics at the University of California, Berkeley) suggests that pay transparency in some workplaces has the potential to boost economic output by improving the productivity of workers. [1]
    - In a field experiment, Huet-Vaughn divided people into two groups.
        - One group was given information about the earnings of others performing similar work at the same piece rate as them, and the other group was kept in the dark about their peers' earnings.
        - By comparing the differences between the groups, Huet-Vaughn could see the effect of pay transparency on these workers.
    - Results:
        - People in the group shown their relative earnings position were more productive than those who weren't given that information. In fact, **the work output of those in the informed group increased by about 10 percent after they learned their relative positions.**[2]
- **The Paycheck Fairness Act,** introduced by Sen. Barbara Mikulski (D-MD) and Rep. Rosa DeLauro (D-CT) would be an important step towards pay transparency as it would prohibit companies from retaliating against workers who discuss salary information.[3]

Right-to-Request Laws

- Most workers work full-time and have caregiving responsibilities. **Workers now need more flexibility** to care for children and, increasingly, aging parents while also holding down a full-time job.
- Right-to-request laws give workers the **right to request a flexible schedule** without fear of retaliation.
- **These laws are critical for working families.** Many U.S. workers are subject to disciplinary action for even asking about schedule flexibility or predictability.
- Federal policy could follow the lead of **San Francisco** and **Vermont**, which have recently passed right-to-request laws. The laws outline a process for employees and employers to discuss and negotiate workplace flexibility and permit employers to turn down the requests only for certain business reasons.[4]
    - In Vermont, for example, employers may refuse the request for flexibility for reasons such as the burden of additional costs, negative effects on meeting customer demand or business quality and performance, or the inability to reorganize existing staff to make it work.[5]

- Right-to-request laws are based on policies in the United Kingdom, New Zealand, and Australia that allows employees to request a change in the number or schedule of their work hours.[6]
- Right-to-request legislation, in the form of the **Working Families Flexibility Act**, was introduced in the 111th Congress by Rep. Carolyn Maloney (D-NY) in the House of Representatives and Sen. Bob Casey (D-PA) in the Senate.[7]

Family and Medical Leave Insurance

- Women need polices to **help them balance work and family care** so they can remain in the workforce and help grow our economy.
- In 2012, **only 59 percent of workers** had access to unpaid, job-protected leave through the Family and Medical Leave Act of 1993.[8] The FMLA provides **up to 12 weeks** of unpaid leave per year to eligible employees who need time off to care for a new child, recover from a serious illness, or take care of a seriously ill family member.[9]
- Workers who need to take leave, however, often cannot afford to take unpaid time off.
    - **Forty-six percent of workers** who needed leave but did not take it said that they could not afford to take it without pay.[10]
- **Employers do not typically offer extended leave** to care for a new child or an ill family member, and when they do, they tend to offer it only to higher-wage, higher-status workers.
    - In 2013, **only 12 percent of workers** had access to employer-provided paid leave.[11]
    - The employees who are least likely to get family and medical leave benefits are low-wage workers—those that are most likely to need leave because they cannot afford paid help to care for loved ones.[12]
- **Family and medical leave insurance**—also known as paid family and medical leave or paid leave—would fill an important gap for workers. It provides wage replacement to workers who take temporary leave to recover from a serious illness or care for an ill family member, newborn, newly adopted child, or foster child.[13]
- Only **three states**—California, New Jersey, and Rhode Island—have expanded their long-standing Temporary Disability Insurance, or TDI, programs, which cover medical leave including childbirth, to cover caregiver and bonding leave for new parents or for workers who need to care for a seriously ill family member.[14]
- The experimentation at the state level shows that paid family and medical leave can be a successful policy for **both employers and employees.**[15]
- **The Family and Medical Insurance Leave Act of 2013**, also known as the FAMILY Act, would relieve the financial burden of taking unpaid time off, providing paid leave for nearly every U.S. worker.[16] Introduced by Representative Rosa DeLauro and Senator Kirsten Gillibrand, the FAMILY Act draws on what we have learned from states that have family leave insurance and from other federal benefit programs.

Paid Sick Days

- **Earned sick time allows workers to take short, unplanned leave** when the worker or a family member has an everyday illness.
- Workers who lack paid sick days lose pay, risk losing their jobs, and endanger their family's livelihood if they stay home when they or their children are ill.
- **Public health and the economic well-being of our families should not be threatened simply because a worker or a child has the flu.**
  - Employees who come to work sick compromise the health of their colleagues.
  - Parents who lack paid sick days are more likely to send their children to school or daycare when they are ill or leave them home alone.[17]
- There are **only a handful of places in the United States** where workers currently have the right to job-protected leave if they are sick, although the list is **rapidly growing**. San Francisco added these protections in 2006; Washington, D.C. in 2008; Connecticut and Seattle in 2011; New York City, Portland, Oregon, and Jersey City, New Jersey, in 2013; and Newark, New Jersey in 2014.[18]
- The **Healthy Families Act**, introduced as H.R. 1876 and S. 984 in the 112th Congress, would allow workers to earn one hour of sick leave for every 30 hours worked—up to seven days of earned sick time per year. The law excludes workers in firms with 15 or fewer employees.[19]

Additional information about right-to-request, family and medical leave insurance, and paid sick days policies can be found here:

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[2] Ibid.

[3] *Paycheck Fairness Act*, S. 84, 113 Cong. 1 sess. (Government Printing Office, 2013).

[4] David Chiu, "San Francisco Family Friendly Workplace Ordinance: Legislative Fact Sheet," available at http://www.sfbos.org/Modules/ShowDocument.aspx?documentid=45824 (last accessed October 2013 ; General Assembly of the State of Vermont, "No. 31 An act relating to equal pay," available at http://www.leg.state.vt.us/docs/2014/Acts/ACT031.pdf (last accessed October 2013)

[5] General Assembly of the State of Vermont, "No. 31 An Act Relating to Equal Pay."

[6] Chiu, "San Francisco Family Friendly Workplace Ordinance."

[7] *Working Families Flexibility Act*, H. Rept. 1274, 111 Cong. 1 sess. (Government Printing Office, 2009).

[8] Jacob Alex Klerman, Kelly Daley, and Alyssa Pozniak, "Family and Medical Leave in 2012: Technical Report" (Cambridge, MA: Abt Associates Inc., 2012), available at http://www.dol.gov/asp/evaluation/fmla/FMLA-2012-Technical-Report.pdf.

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[12] Ann O'Leary, "How Family Leave Laws Left Out Low-Income Workers," *Berkeley Journal of Employment and Labor Law* 28 (1) (2007): 1–62; U.S. Bureau of Labor Statistics, "Table 32. Leave Benefits."

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[14] Five states—California, Hawaii, New Jersey, New York, and Rhode Island—have long-standing Temporary Disability Insurance programs that provide workers coverage for non-work-related disabilities including childbirth. State of California Employment Development Department, "Paid Family Leave," available at http://www.edd.ca.gov/disability/paid_family_leave.htm (last accessed October 2013); National Partnership for Women & Families, "New Jersey Becomes Third State to Adopt Paid Family Leave," Press release, May 2, 2008, available at http://www.nationalpartnership.org/news-room/press-releases/new-jersey-adopts-paid-family-leave.html; Rhode Island Department of Labor and Training, "Temporary Disability Insurance/Temporary Caregiver Insurance," available at http://www.dlt.ri.gov/tdi/ (last accessed February 2014).

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[16] National Partnership for Women and Families, "Fact Sheet: The Family and Medical Insurance Leave Act (FAMILY Act)" (Washington, DC: National Partnership for Women & Families, 2014), http://www.nationalpartnership.org/research-library/work-family/paid-leave/family-act-fact-sheet.pdf.

[17] Heather Boushey and Ann O'Leary, "Our Working Nation: How Working Women Are Reshaping America's Families and Economy and What It Means for Policymakers" (Washington: Center for American Progress, 2010), available at http://www.americanprogress.org/issues/2010/03/pdf/our_working_nation.pdf.

[18] National Partnership for Women & Families, "State and Local Action on Paid Sick Days" (2013), available at http://paidsickdays.nationalpartnership.org/site/DocServer/NP_PSD_Tracking_Doc.pdf?docID=1922; Associated Press, "Bill Requiring Sick Leave Is Approved in Jersey City," September 26, 2013, available at www.nytimes.com/2013/09/27/nyregion/jersey-city-council-approves-paid-sick-leave.html; Jennifer Ludden, "Paid Leave Laws Catch On Across the Nation," National Public Radio, January 28, 2014, available at http://www.npr.org/2014/01/28/267488576/more-states-offer-paid-leave.

[19] *Healthy Families Act*, H.R. 1876, 112th Cong. 1 sess. (Government Printing Office, 2011).

HOW WE PUSH BACK

We can reinvent our nation, producing a better society for more of us and greatly improving the quality of life for millions of American families.

Some change will require government involvement, some of it does not. Some of our solutions involve collective actions, and some of them require individuals to act.

There is no silver bullet to bring about a Nation Reimagined. It will take public, private, and personal solutions.

Take a look.

Kristy Richardson leaves the Veterans Leadership Program of Western Pennsylvania, an organization helping her return to life at home after multiple tours abroad. The leadership role she held in the military is one of her proudest achievements. (MELISSA FARLOW)

Putting Women at the Center of Policymaking

Public Solutions to Help Women Push Back from the Brink

By Melissa Boteach and Shawn Fremstad

STUNNING FACT

If women working full time, year round, were paid the same for their work as comparable men, we would cut the poverty rate for working women and their families in half.

In the 50 years since President Lyndon Johnson issued his War on Poverty declaration, much has changed for women and families. The share of young women in college has doubled, with women's attendance rates surpassing men's since the late 1980s. The share of women who are both breadwinners and caregivers has steadily increased. The gender wage gap has narrowed considerably, though a substantial gap still remains. And the value of the minimum wage, both in inflation-adjusted terms and as a percentage of the average wage, has declined.

Public policies have played an important role in all of these trends, along with cultural, technological, and social changes. Still, our public policies haven't adjusted to a world in which nearly two-thirds of mothers are primary or co-breadwinners. The consequences have been particularly troubling for low-income mothers, who are much less likely to receive decent wages and family-friendly benefits from their employers than other working moms.

Britani Hood-Mongar works in the cafeteria at an elementary school in Chattanooga, Tennessee. Because she is considered a contractor, she is not eligible for benefits like paid sick leave or family leave. (BARBARA KINNEY)

We need new policy prescriptions for a new time—ones that will benefit these women, and strengthen our economy as well.

To enact these new policies, we must first ask a game-changing question: How do we put women and their families at the center of our public policymaking? In a woman's nation, every woman who wants to work should be able to join the labor force, and women should earn equal pay to their male counterparts. Unfortunately, we are still far from achieving these goals.

Currently, 70.5 percent of working-age women participate in the labor force compared to 83.1 percent of working-age men.[1] While some women may choose not to work, the lack of policies to help families manage conflicts between work and family takes the choice of working away from too many women. In fact, between 1990 and 2010, the United States dropped from 6th to 17th in female labor force participation among 22 developed countries. More than a quarter of our relative drop was attributable to the fact that other developed countries expanded "family-friendly" policies such as parental leave, while the United States largely stagnated in enacting policies to help women balance the demands of work and care.[2]

As we outline throughout our report, women in the labor force face a persistent wage gap that undermines their economic security, earning 77 cents for every dollar earned by men. As economists Heidi Hartmann and Jeffrey Hayes of the Institute for Women's Policy Research have found, if women working full time, year round were paid the same for their work as comparable men, they would earn $6,250 more a year on average. This increased income would cut the poverty rate for working women and their families in half. Of the 5.8 million working women living below the poverty line, just over 3 million would be raised above it. And the U.S. gross domestic product would increase by 2.9 percent, or $450 billion, an amount roughly equal in size to Virginia's economy. The economic benefits could not be clearer.

With so much at stake, how do we remove barriers for women and unleash their economic potential?

Some key public solutions could help millions of women and their families join the middle class, and strengthen the nation's economy. It is essential to remember that today's women are increasingly both caregivers and breadwinners, and they face serious tradeoffs in both of these roles. To help women manage their care responsibilities in a way that bolsters their potential as breadwinners, we need to ensure that workers at all income levels have access to paid time off as well as access to affordable and high-quality child care and preschool—like nearly all other developed nations. We also need to ensure that women get fair and equal pay, and that they have access to the public supports and educational opportunities they need to put themselves on a stable path to middle-class economic security.

RECOGNIZING CARE

Women have long performed, without pay, the central human work of caring for children, the sick, and the elderly. And as Riane Eisler and Kimberly Otis note in Heather Boushey's chapter, to this day, the economic value of this work largely goes unrecognized. Care work, for example, is only counted toward GDP when it is provided for pay.[3]

As women have joined the workforce in increasing numbers, they have turned to both formal and informal care providers, often at considerable expense. At the same time, only so much of parents' care responsibilities can be—or should be—outsourced. Even with affordable child care, a working parent still needs to take time off to care for a sick child. And taking family leave to care for a new infant should be encouraged and supported. Yet, for the most part, our public policies don't recognize the impact these care responsibilities have on workers.

OFFERING PAID FAMILY LEAVE INSURANCE

Fifty years ago, about half of all married mothers were "stay-at-home" moms who weren't in the labor force at all.[4] Today, only one-fifth of married moms stay at home, and a greater share of all mothers are unmarried and in the labor force. As a result, most mothers today have to balance their caregiving roles with their breadwinning ones.

Nationwide only about 12 percent of American workers have access to paid family leave through their employers to care for a new child or seriously ill family member.

Many well-paid professionals and managers have paid family leave benefits that allow them to take time off to meet these family responsibilities, while still meeting their breadwinning responsibilities. And three states—California, New Jersey, and Rhode Island—operate paid family leave insurance programs.

California's program, for example, effectively provides up to six weeks of partial wage replacement per year for covered workers to care for a new child or a seriously ill family member. For mothers, these benefits are in addition to the 10 to 12 weeks of partial wage replacement for covered pregnant and postpartum workers under California's temporary disability insurance program.[5]

But nationwide, only about 12 percent of American workers have access to paid family leave through their employers to care for a new child or seriously ill family member.[6] Workers without paid family leave cobble together paid sick days or vacation days—which are typically inadequate, if available at all—or they take unpaid leave if they can afford it, or leave their jobs altogether. Either caregiving comes at the expense of breadwinning or the other way around.

Paid family leave for the price of a cup of coffee

Legislation recently introduced in the U.S. Congress, and modeled on the existing state family leave programs, would enable more breadwinners to accrue paid family leave to help balance their work and care responsibilities. The Family and Medical Insurance Leave Act, or FAMILY Act, is a proposed social insurance program that would give all workers the ability to earn up to 12 weeks of paid leave to care for a new child, a seriously ill family member, or the worker's own serious illness. Benefits would equal two-thirds of a worker's typical wages up to a capped amount.

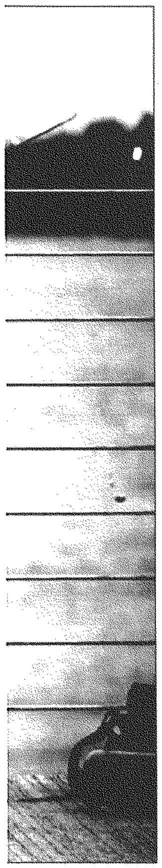
The program would be funded by a small increase in the payroll tax that would be shared by employers and employees. The cost for the average full-time worker earning the median hourly wage would be about $1.50 per week, less than a small cup of coffee at Starbucks.[7]

Under the proposed legislation, a worker's eligibility for leave would depend on whether he or she has sufficient past work history, with the amount of past work required increasing with age. For instance, a new parent under age 24 would need to have worked in at least six calendar quarters in the past three years to be eligible, while one between the ages of 24 and 30 would need to have worked in at least half of the calendar quarters between age 21 and their leave date.

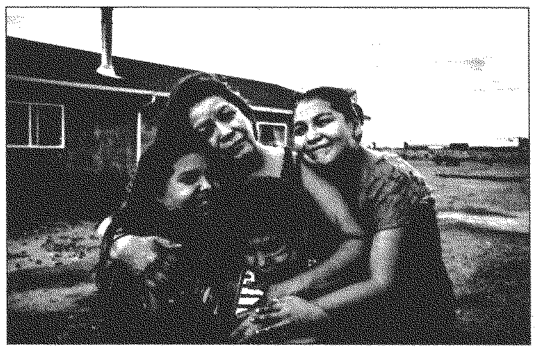
Workers in poorly compensated jobs, who are disproportionately women on the financial brink, bear the greatest financial burdens and are the least likely to have paid time off of any sort. Additionally, the lack of paid leave likely contributes to the gender gaps in both pay and employment.

A growing body of research suggests that allowing all workers to earn paid family leave would have long-term benefits, beyond the partial replacement of earnings it provides for workers, their families, and the overall economy. Most importantly, research suggests that paid family leave will increase the employment of women on the brink who are caregivers, mostly by increasing the share of women who will return to the same employer after taking leave.[8]

Case in point: Comparing outcomes for working women who took paid leave after a child's birth with those of new mothers who did not, Rutgers University researchers have found that the women taking paid leave were more likely to be working 9 to 12 months after a child's birth, more likely to report wage increases in the year following a child's birth, and less likely to receive public assistance.[9]



All forms of the modern American family could benefit from paid family leave. Providing paid sick days would also have broad public health benefits. (BARBARA KINNEY (L), JAN SONNEMAIR (R1), BARBARA RIES (R2))



By making the workplace more family friendly, a national paid family leave program will help close the gender gaps in employment and wages, while bolstering women's long-term economic security. New mothers and family caregivers who return to work after their leave, instead of dropping out of the labor force for longer periods of time, will boost their lifetime earnings, be more likely to earn further raises and promotions, and accumulate greater retirement savings through Social Security.

In today's world, where more mothers work than stay home, paid family leave's time has come. It is one of the most effective ways the government can adapt to the realities of today's families, and one of the surest ways to increase the economic stability of women on the brink.

PROVIDING PAID SICK DAYS

Paid family leave is designed to help workers meet caregiving responsibilities that typically last weeks. But, of course, workers also need time to address short-term health and medical issues: a child home from school with the flu, an elderly parent's medical emergency, or their own illness.

Unfortunately, 39 percent of private-sector workers do not have a single paid sick day.[10] Even worse, 71 percent of private-sector workers in low-wage jobs—which are disproportionately held by women—go without any paid sick days.[11] Working caregivers without paid sick days often have to make lose-lose choices: send a child to daycare with the flu or sacrifice a day's wages that were going to pay for this week's groceries? Go into work with a contagious cold, or risk losing the job altogether in this tough economy?

A whopping 87 percent of women on the brink—and 96 percent of single mothers—said paid sick days would be "very useful" to them; our poll found it to be the number one policy they thought would help them—even more than an increase in wages or benefits.

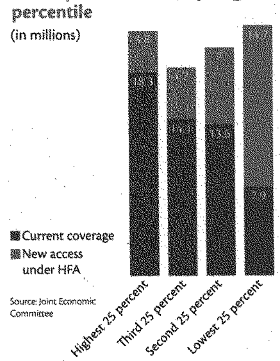
The solution is simple: a basic national standard that enables workers to earn paid, job-protected sick days. One national proposal, the Healthy Families Act introduced in Congress in 2013, would ensure that workers in businesses with 15 or more employees are able to earn one hour of paid sick leave for every 30 hours worked, up to seven days annually.[13]

There is growing momentum for this type of change. In 2012, Connecticut became the first state to adopt a law that allows a substantial share of workers to earn paid sick days. And in 2013, Portland, Oregon and New York City became the fourth and fifth major cities to adopt paid sick days laws, joining San Francisco, Seattle, and Washington, D.C.

Typically, these laws allow workers to earn five or more days of paid sick leave annually. In San Francisco, for example, workers earn one hour of paid sick leave for every 30 hours worked, up to nine days annually, or five days if they work for employers with 10 or fewer employees.

FIGURE 1

Number of workers who would gain paid sick days under Healthy Families Act, by wage percentile



Sick and fired: Elose's story

Elose worked as a dishwasher in a Miami restaurant to support her teenage son and relatives living back in her home country of Haiti. One day, Elose's boss told her to hurry and do the job as fast as she possibly could. In her rush around the kitchen, she slammed her hand in the dishwasher door, injuring herself badly.

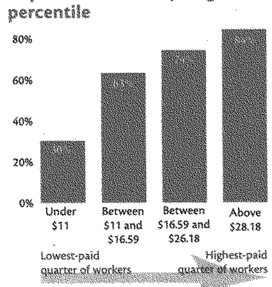
She went to the clinic to get treated, but as Elose notes, when she returned, "Without even asking me how I was and without explanation, my boss told me that I no longer had my job at the restaurant. I was in shock. I went home sick for getting hurt on the job, and was fired when I returned with a doctor's note. ... Getting fired was devastating."

Elose says this wasn't just her problem. At the restaurant where she worked, "I noticed many people would come to work sick because when calling in sick the boss would say they'd need to come in anyway."

Elose and her colleagues were vulnerable because they, like 71 percent of private-sector workers in low-wage jobs, had no job-protected paid sick days.[12]

FIGURE 2

Share of workers with access to paid sick leave, by wage percentile



Source: National Compensation Survey

As with paid family leave, a national standard for paid sick leave would increase the financial security of the millions of workers currently unable to take paid time off to care for a sick child or themselves when ill. Low-income, working women, who are constantly juggling their caregiving and breadwinning roles, would be among those helped the most. According to the Joint Economic Committee of Congress, of the roughly 30 million additional workers who would have access to paid sick leave under the Healthy Families Act, nearly half are working in jobs that pay less than $11.50 an hour.[14]

In addition, providing paid sick days would have broad public health benefits. Nobody wants a cook with a bad case of the flu preparing his or her lunch, or a child care worker with a contagious illness taking care of his or her child. But millions of workers in these and similar industries involving direct interpersonal contact go without paid sick days, including the workers in the Miami restaurant where Elose worked.[15] (see text box) And low pay in these same jobs likely limits the extent to which many sick workers can take unpaid time off.

A national standard, like the one in the Healthy Families Act, would ensure that the vast majority of these workers are able to earn paid sick leave, allowing them to stay home when it's the best thing for their health and yours.

ENSURING ACCESS TO QUALITY PRESCHOOL AND CHILD CARE

There are 7.6 million U.S. families with children under age 6 living on the financial brink.[16] If more of the mothers in these families were able to work steadily in a decent job, many of them would be able to move away from the brink and toward the middle class.

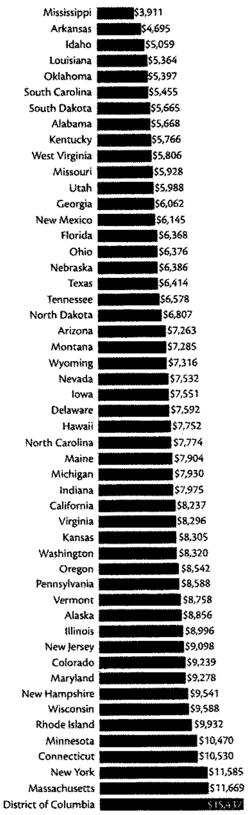
Low-income mothers are especially in need: quality child care assistance is associated with increased employment and earnings. (BARBARA KINNEY)

Let's look at single mothers. Four out of every five single mothers with young children had incomes that put them on the economic brink in 2012. But when these mothers are able to work full time, year round, they're twice as likely to have incomes that lift them off the brink. While far too many of these working mothers are still struggling to make ends meet, having earnings from a full-time job can make a big difference.[17]

However, to work full time, year round, mothers of young children need child care and preschool options that they can trust and afford. Not surprisingly, considerable economic research shows that receiving child care assistance is associated with increased employment and earnings among low-income mothers.[18] Further, high-quality preschool delivers considerable long-term economic benefits. Jennifer's story (see textbox) shows the power of affordable, quality preschool to help mothers work, as well as to improve outcomes for their children, delivering long-term economic benefits.

FIGURE 3

Average costs for center-based care for a 4-year-old in 2011



Source: Child Care Aware of America January 2012 Survey of State Child Care Resource and Referral Networks.

Rigorous studies have found that for every $1 invested in high-quality preschool, we save an average of $7 in future public costs due to reductions in crime and the need for remedial education, and increases in workers' productivity.[19] In our poll, 88 percent of women on the brink said that providing affordable child care to working families would improve the nation's economic security and 64 percent of them strongly favored it as a government economic policy.

Yet the average market cost of a full-time spot in a child care center for a 4-year-old ranges from $3,911 a year (in Mississippi) to $15,437 a year (in Washington, D.C.).[20] With the majority of working women earning less than $30,000 a year, many families are priced out of quality care, or pay an amount disproportionate to their earnings. Of the 3.13 million working mothers with preschoolers and a family income below 200 percent of the poverty line, just over 1 million make payments for child care. On average, the amount these mothers spend on child care each week is equal to more than one-third of their personal income.[21]

What about the low-income, working mothers of preschoolers who can't afford child care? Most rely on family members and friends to help. After fathers, grandparents play the biggest role, serving as the primary child care providers to nearly 900,000 preschool children of low-income, working moms.[22]

A head start for families: Jennifer's story

When Jennifer's husband lost his welding job during the Great Recession, she started working to help support the family. Unfortunately, the couple, residing in southeast Arkansas, couldn't afford daycare.

Thankfully, the family found the Hamburg Arkansas Better Chance, or ABC, program which received federal funding from several sources, including Head Start. With daycare taken care of, Jennifer's husband was able to take the time to find other employment, and Jennifer could hold down two jobs to help keep the family afloat.

She writes, "If this ABC program wasn't available, over half of that [income] would've been spent on daycare." The ABC program also helped two of her children with developmental disabilities and emotional and social problems reach critical milestones and make important progress.

Jennifer was one of the lucky ones. Today, only about 18 percent of eligible children receive federally funded child care assistance, and while nationwide preschool enrollment has increased in recent years, the lowest-income children are the least likely to participate in preschool programs.[25]

Existing child care assistance and preschool programs help, but they remain underfunded and a patchwork. Because of insufficient funding, only about 18 percent of eligible children actually receive federally funded child care assistance.[23] Similarly, the Head Start program, which provides early learning opportunities for low-income children, serves just 8 percent of all 3-year-olds and 11 percent of all 4-year-olds, and state preschool programs serve just 28 percent of 4-year-olds and 4 percent of 3-year-olds.[24]

We need to build on these existing systems to enable every child to attend two years of high-quality, full-day preschool. We must ensure that working mothers have affordable, quality child care options for their young children.

In his most recent budget, President Barack Obama took a historic step toward these goals. His Preschool for All initiative would create a new federal-state partnership to substantially expand the availability of high-quality preschool.[26] States would be able to receive federal funding to extend preschool to all 4-year-olds from low- and moderate-income families, and they would have financial incentives to expand access to middle-class families.

In our poll, 88 percent of women on the brink said that providing high-quality, affordable child care to working families would improve the nation's economic security.

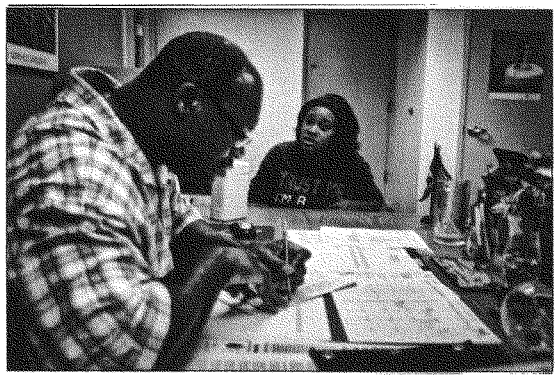
We also need to address the "child care cliff" in many states for parents who receive child care assistance; when a parent's earnings increase, even a bit, she may find herself over an income threshold, and no longer eligible for child care assistance. This income limit or cliff can mean that to pay for child care, a working parent ends up with considerably less take-home pay despite getting a raise or working more hours. Some struggling single parents turn down raises or promotions, and even ask for pay cuts, to avoid going off the cliff.[27]

To address these problems, we need to increase our investment in the Child Care and Development Fund, the primary source of federal funding for child care assistance for low- and moderate-income families. We need to turn the cliff into a gradual off ramp for parents working their way into the middle class.

Finally, we need to improve the quality of care by improving the required qualifications of the early childhood workforce, as well as their compensation. Under the president's Preschool for All proposal, states would need to meet quality standards to receive federal funds, including requiring preschool teachers to have a bachelor's degree and ongoing professional development, as well as requiring preschool staff salaries to be comparable to K-12 salaries. Similar reforms should be made to improve the quality of child care provided with federal dollars under the Child Care and Development Fund.[28]

GIVING CAREGIVERS A RIGHT TO REQUEST FLEXIBLE WORK ARRANGEMENTS

For many working women, including those in well-compensated professional jobs, the hours and lack of flexibility interfere with their family obligations. Women in low-paying fields such as health care, retail, and the restaurant industry often work too few hours to financially support their families and are more likely to face unpredictable and unstable schedules.



Kristy Richardson talks with Robert Davis, a housing case manager at the Veterans Leadership Program of Western Pennsylvania. Much of her life is spent waiting to meet with someone who may be able to help her family get by. (MELISSA FARLOW)

We can do much more to encourage employers to allow flexible work arrangements for employees who want them, as well as more predictable, stable scheduling practices in poorly compensated service jobs. Flexible work arrangements include nontraditional start and end times for work, compressed work weeks, the ability to reduce hours worked, and the ability to work from home.

Less than half of employers currently offer flexible work arrangements to their employees. But the business case for allowing flexible work arrangements is strong. Researchers have found that employees with access to flexible work arrangements tend to be more satisfied and engaged with their jobs.[29] These factors have been found to increase productivity and employee retention, both of which improve a business's bottom line.[30] Examples of companies implementing flexible work arrangements—and what practices are working best for each organization—are highlighted in detail by Ellen Galinsky, James T. Bond, and Eve Tahmincioglu in the Private Solutions chapter.

As we pointed out in our first report, in the United Kingdom and several other countries, parents and caregivers have a "right to request" flexible work arrangements to accommodate caregiving responsibilities. Under U.K. law, an employer must meet with an employee requesting flexible work and make a decision about whether to accommodate the employee's request within two weeks of the meeting.[31] Employers can reject the request, but only for business-related reasons specified in the law. Vermont became the first U.S. state to adopt a right-to-request law last year; employers can generally refuse an employee's request, but they have to discuss the request with the employee in good faith.[32]

In June 2013, Rep. Carolyn Maloney (D-NY) and Sen. Bob Casey (D-PA) introduced legislation that would give all U.S. employees the right to request flexible work arrangements from their employers.[33] Employers would be required to respond to applications made by employees. If an employer were to reject an application, he or she would be required to provide the reasons to the employee in writing.

Although employees wouldn't be able to challenge an employer who denies a request, simply formalizing the right to request may have a positive effect on employers' responsiveness to flexible work. According to the Confederation of British Industries, the largest employers' organization in the United Kingdom, the right to request flexible work "has made huge strides in promoting different ways of working—with nine out of 10 requests accepted by employers."[34]

BOOSTING INCOMES FOR WOMEN BREADWINNERS

Seventy percent of Americans believe the financial contribution women make to our national economy is essential. Yet as Heather Boushey's chapter explores, women are disproportionately consigned to low-wage work, with incomes that leave them unable to support a family, including in critical care professions set to grow over the next decade.

In trying to access the work and income supports women need to care for their families, they face a daunting web of bureaucracy. And when trying to access educational opportunities to move off the brink, women face a lack of information and support in moving into higher-paying fields.

To help millions of women push back from the brink, we must boost the incomes of female breadwinners by improving the quality of low-wage jobs, streamlining access to work and income supports, paving the path toward higher education, and ensuring equal pay.

Minimum wage fails to keep pace

$7.25	About $10	About $16.50
Current federal minimum wage	**How much minimum wage would be today** if it had remained equal to half of average wage for production and non supervisory workers	**How much minimum wage would be today** if it had kept pace with productivity growth since 1968

Source: Janelle Jones and John Schmitt, "The Minimum Wage is Not What it Used To Be," CEPR Blog, July 17, 2013, available at http://www.cepr.net/index.php/blogs/cepr-blog/the-minimum-wage-is-not-what-it-used-to-be.

INCREASING THE MINIMUM WAGE

Our economy and our families are stronger when we reward an honest day's work with honest wages and benefits, regardless of a worker's gender. Increasing the minimum wage would help us reach this goal. As President Obama noted in his 2013 State of the Union address, an increase in the minimum wage "would mean customers with more money in their pockets. And a whole lot of folks out there would probably need less help from government."

For nearly 25 years following World War II, the minimum wage provided an adequate floor, one that was regularly adjusted to keep pace with increases in productivity. In 1964, the minimum wage was equal to half of the average wage for production workers. But not long after that, federal policymakers let the value of the minimum wage decline. If the minimum wage today were at the same level relative to the average production worker 50 years ago, it would be just over $10 per hour. If it had been adjusted over roughly the same period to keep pace with gains in productivity, it would be about $16.50 an hour.[36]

The minimum wage should put a floor under wages, one that ensures employers pay enough for their workers to afford the basics. If employers don't pay their workers enough to maintain spending on necessities such as food, housing, clothing, transportation, and other items, families and our economy suffer. Increasing the minimum wage to $10.10 over the next two years would mean as much as $51 billion in additional earnings for poorly compensated workers during this period.[37]

Fulfilling the Affordable Care Act's promise for women on the brink

Access to affordable health care is essential to women's economic security and well-being. Without insurance, a broken bone or a child's asthma attack can quickly drain a family's savings and lead to bankruptcy. Without access to routine checkups, a preventable illness can quickly escalate.

Yet about 18.9 million nonelderly women were uninsured in 2012.[43] Just over half of them will be eligible for Medicaid starting in 2014, as long as they live in states that take the Affordable Care Act's option to extend coverage to them.[44] While roughly half of states have approved or are moving toward the Medicaid expansion, in the other states, debate about whether or not to expand Medicaid is ongoing or not under consideration at this time.

The hold-out states should go forward with the expansion, which is in the best interest of the people they represent. From 2014 through 2016, the federal government will cover all of the costs of expanding Medicaid. After that, states will need to pay for only a modest share of the costs (5 percent in 2017, increasing by 1 percent up to a maximum of 10 percent in 2020 and beyond).

As a practical matter, states that adopt the expansion will improve their balance sheets and their economies because the expansion will create jobs and allow states to draw down federal funding for certain health care services they're already providing. In Ohio, for example, projections show that implementing the expansion is expected to result in $1.9 billion in savings and increased revenues by 2022.[45] In contrast, states that fail to take up the expansion will deny health insurance to tens of thousands of low-income workers and harm their states' balance sheets.

Low-income workers are more likely than other workers to spend any pay increases on necessities that they couldn't afford before. Grocery stores, clothing stores, and other retailers would all benefit from the increased spending power of these workers. In fact, in a recent nationally representative poll, two out of every three small business owners supported the increase.[38]

There is growing momentum for raising the minimum wage, as more than 20 states already have minimum wages higher than the federal level.[39] In September 2013, California became the latest state to raise the minimum wage, hiking it to $10 an hour by 2016.[40]

At the federal level, we should follow California's example and gradually raise the nation's minimum wage from $7.25 to at least $10.10 per hour and then update it annually, as Sen. Tom Harkin (D-IA) and Rep. George Miller (D-CA) have

Allie Winans and her two daughters rely on multiple prescriptions and numerous doctors' visits every week. These health care costs have driven their family to the financial brink. (AMI VITALE)

proposed.[41] We should also increase the minimum wage for employees who receive tips, from $2.13 to at least $7 per hour. These increases would be particularly helpful for low-income women. According to the Bureau of Labor Statistics, women are twice as likely as men to be paid wages at or below the minimum wage.[42]

STREAMLINING AND MODERNIZING PUBLIC WORK SUPPORTS

For women on the brink and other poorly compensated breadwinners, one of the most important developments over the past several decades has been the establishment and gradual expansion of public work supports. These include Medicaid; the Supplemental Nutrition Assistance Program, or SNAP (formerly food stamps); the earned income tax credit and child tax credit; and child care assistance. These programs acknowledge that many jobs in our economy don't pay adequate wages or provide essential benefits for families.

Work supports are incredibly effective. In 2011, for example, the earned income tax credit and child tax credit made it possible for 9.4 million people in working families with children to live above the poverty line.[46]

Unfortunately, obtaining these supports is too often a time-consuming and byzantine process, especially for low-wage workers juggling work and caregiving responsibilities with little time to wait in line at a government office. This is especially the case for low-wage workers seeking more than a single work support. A working mother with low earnings, for example, may be eligible for Medicaid, SNAP benefits, and child care assistance. But in many states, in order to access and maintain benefits, she has to navigate two or three different and largely uncoordinated processes. If you haven't been through a typical application process yourself, imagine a tedious trip to your DMV office, multiply that by two or more, and you start to get the picture.

States need to streamline and coordinate the delivery of work supports in ways that reduce burdens on both the families seeking benefits and the agencies providing them. Many states are already well on the way. As California's first lady, Maria Shriver developed WE Connect, a public-private partnership established in 2005. WE Connect works with organizations in underserved communities to connect families to resources such as the earned income tax credit, California's Healthy Families Program, and CalFresh. The program continues to help millions of Californians through its community events, web-based tools, public-private partnerships, and collateral materials. Through her leadership, Shriver has connected more than 20 million Californians with programs and services in an effort to promote healthier and more financially independent lives.[47]

Florida is also on its way, having completely modernized the way it delivers SNAP and other benefits over the past decade through its Automated Community Connection to Economic Self Sufficiency, or ACCESS, Florida initiative. The state changed eligibility rules to better align programs, shifted largely to an online application process, reduced other paperwork required from applicants, and made a number of other changes to streamline the process. Today, about 95 percent of applications for benefits in Florida are made online, rather than through a paper application process, and the state has reduced the costs of taking and processing applications by hundreds of millions of dollars.[48]

The Work Support Strategies Initiative, a multiyear demonstration project funded by the Ford Foundation and several other major foundations, is currently working with a select group of states to design, test, and implement "21st century" approaches that will make it easier for families to get the work supports for which they are eligible. As noted in Gov. C.L. "Butch" Otter's (R-ID) essay following this chapter, these modern approaches aim to deliver work supports more effectively and efficiently through technologically savvy and customer-driven methods of eligibility determination, enrollment, and retention.[49]

At the federal level, it is imperative that Congress continues to support and incentivize state efforts to modernize benefit systems. The Affordable Care Act provides enhanced federal funding to modernize benefit systems through 2015. State human services directors have called for extending that funding to give them more time to complete the challenging task of overhauling systems.

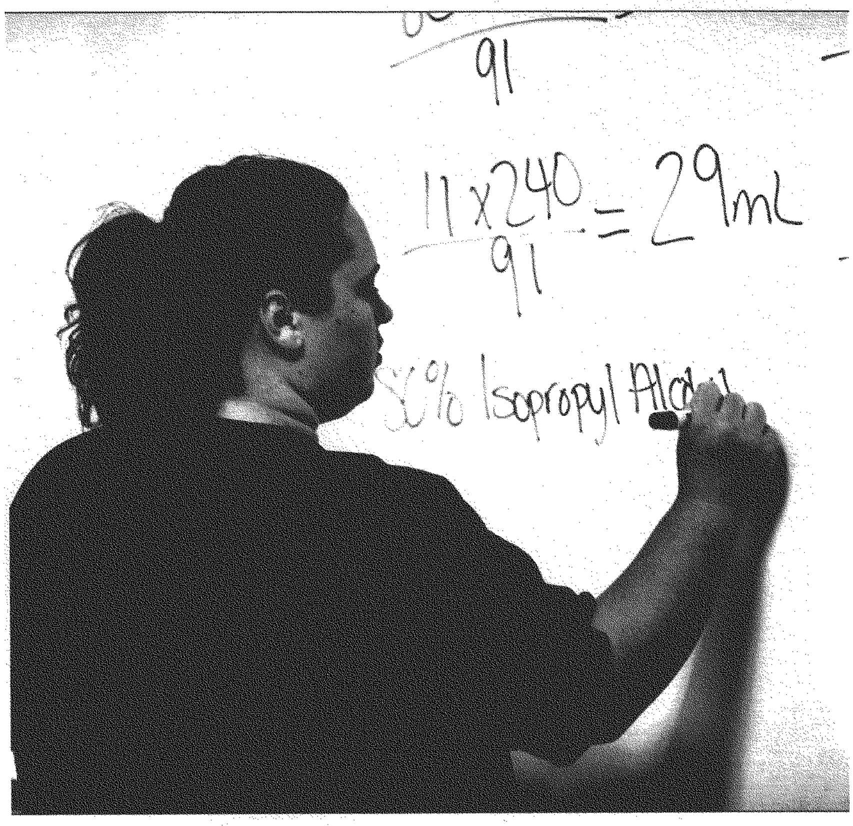
States should also be given the option to enroll eligible adults in Medicaid based on information the individual has already provided when applying for SNAP benefits; the existing option to do this for children, set to expire in September 2014, should be made permanent. A recent review by the Government Accountability Office found that this option has produced substantial administrative savings, while increasing the number of children with health insurance.[50]

OPENING DOORS FOR TOMORROW'S BREADWINNERS AND CAREGIVERS

As Anthony Carnevale and Nicole Smith explain in their chapter for this report, a college degree or other postsecondary education in well-paying fields can make a tremendous difference in the lives of women and their children.

Women have made considerable progress in education over the past five decades. Today, some 38 percent of women between the ages of 25 and 34 have a four-year college degree or higher, compared to 31 percent of men.[51] Yet that still leaves most young women without a four-year degree. And only 14 percent of low-income women in this age range have a four-year degree.[52] We need to ensure that college is affordable for young women and men, and that they have the preparation and support they need to enter and complete college.

It is also important to remember that the gender gap in wages is partly driven by a gender gap in occupations, which exists even after taking educational requirements into account. Two-thirds of women work in just 5 percent of occupational



Investing in the future for her sons, Jessica McGowan is working towards her degree at Virginia College School of Business and Health in Chattanooga, Tennessee. She also works another part-time job.
{BARBARA KINNEY}

categories.[53] And, with the exception of teaching and nursing, the jobs in these categories are among the lowest-paying in our economy.

Women are particularly underrepresented in well-paying "STEM" occupations—science, technology, engineering, and math—as well as many occupations that provide good jobs without requiring a college education. For instance, neither the male-dominated occupation of truck driver nor the female-dominated occupation of child care worker requires more than short-term, on-the-job training. But the typical heavy truck driver earns $18.37 an hour while the typical child care worker earns only $9.38 an hour.[54]

Two-thirds of women work in just 5 percent of occupational categories. And, with the exception of teaching and nursing, the jobs in these categories are among the lowest-paying in our economy.

One important step is to make sure young women have the information and advice they need to make smart education and career decisions. While students can get information on a school's ranking on particular subject matters, teachers, or campus life, little public information is available on average student debt or starting salaries for students graduating from various programs. This type of information is critical for all students, but especially for lower-income students who can ill afford a misstep with the limited dollars they have to spend on higher education or training.

The Obama administration's efforts to produce a college scorecard have promise, but only when information on earnings, particularly at the program level, become available. Bipartisan legislation such as the Student Right to Know Before You Go Act proposed by Sens. Marco Rubio (R-FL) and Ron Wyden (D-OR) could speed implementation of these initiatives, helping to connect women on the brink with the information they need to make informed decisions about careers.

Finally, we need to enforce existing equal pay and equal opportunity laws. There is evidence that discrimination is one factor contributing to the gender gap in STEM fields. A 2012 study showed that science faculty at research universities rated male applicants higher than identical female applicants and offered male applicants higher starting salaries as well as more career mentoring.[55]

The vigorous enforcement of Title IX in school sports has dramatically increased the participation of women and girls in school sports activities. The National Women's Law Center recommends that the U.S. Department of Education's Office for Civil Rights strengthen the enforcement of Title IX by conducting compliance reviews of schools to ensure that women and girls have equal access to STEM fields and classes.

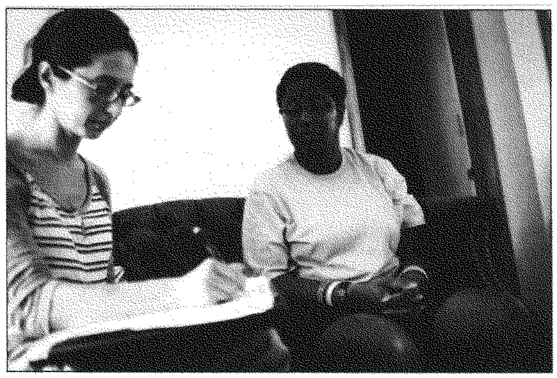
All federal science agencies should conduct similar reviews for their grantee institutions. Similarly, the Office of Vocational Education could publish a proactive roadmap on how educational institutions can recruit and retain students in nontraditional gender fields. Educational institutions could hold regular trainings for teachers and administrators about Title IX, address factors that could discourage girls and women such as harassment and lack of mentorship, and work to make campuses more welcoming for female teachers in STEM fields to increase the number of role models for women and girls interested in entering these sectors.[56]

WHEN BREADWINNING IS CAREGIVING: A FAIRER DEAL FOR CARE WORKERS AND DOMESTIC WORKERS

About 4.5 million people are paid care workers; these jobs include child care workers, nursing aides, personal and home care aides, and home health aides.[57] About 89 percent of these paid care workers are women. And nearly half are black, Hispanic, or Asian.[58]

The good news for women interested in these fields is that the jobs are plentiful and growing rapidly. According to projections by the Bureau of Labor Statistics, the number of jobs in child care and adult care will grow by more than 1 million between 2010 and 2020. In percentage terms, two adult care occupations—personal care aide and home health aide—are currently the two fastest-growing occupations in the United States, with both needing 70 percent more workers by 2020.[59]

But the bad news is that these workers are paid much less than workers on average, and too few of them receive health, retirement, and other benefits. The typical wage for a child care worker in 2012 was only $9.38 an hour ($19,510 annually); for a home health aide, it was $10 an hour.[60] Nearly one out of every three adult



Sabrina Jenkins of Goose Creek, South Carolina, meets with occupational therapist Tania McElveen. Sabrina has rheumatoid arthritis and has been receiving care to restore movement—even simple exercises are painful. (CALLIE SHELL)

and child care workers are uninsured, and roughly three-quarters do not have employer-provided retirement benefits.[61]

The workers who care for our children, parents, and grandparents, often women on the brink, deserve a better deal. Policies discussed in this chapter including raising the minimum wage, increasing access to benefits, and expanding educational opportunities are essential parts of that deal.

But we also need to reform the very structure of these jobs. Along these lines, Caring Across Generations, a campaign formed in 2011, has developed a policy agenda focused on both improving the quality of the care provided by adult care workers, and ensuring that these jobs come with basic rights and a career ladder for workers.[62] An important step forward came in September 2013 when the Obama administration finalized a rule that will end the exclusion of nearly 2 million home care workers from minimum wage and overtime protections starting in January 2015.[63] While the rule will improve the basic economic security of many home care workers, there is still much more work to do to help the women who care for our aging and disabled family members to push back from the brink.

The 30 occupations projected to add the most new jobs by 2020: Most already have female majorities, but few pay above median wages

Occupation
All occupations
High-growth occupations in which 60 percent or more of jobs are currently held by women
Medical secretaries
Licensed practical and licensed vocational nurses
Child care workers
Medical assistants
Receptionists and information clerks
Teacher assistants
Registered nurses
Bookkeeping, accounting, and auditing clerks
Nursing aides, orderlies, and attendants
Home health aides
Personal care aides
Office clerks, general
Elementary school teachers, except special education
Cashiers
Waiters and waitresses
First-line supervisors of office and administrative support workers
Customer service representatives
Combined food preparation and serving workers, including fast food
Accountants and auditors
High-growth occupations in which less than 60 percent of jobs are currently held by women
Retail salespersons
Postsecondary teachers
Physicians and surgeons
Janitors and cleaners, except maids and housekeeping cleaners
Sales representatives, wholesale and manufacturing, except technical and scientific products
Laborers and freight, stock, and material movers, hand
Security guards
Heavy and tractor-trailer truck drivers
Landscaping and groundskeeping workers
Construction laborers
Carpenters

Sources: Bureau of Labor Statistics, Employment Projections Program and Table 11 in Bureau of Labor Statistics, Household Data Annual Averages.

This table lists the 30 occupations that the Bureau of Labor Statistics projects will add the most jobs during the current decade, sorted by the share of jobs in each occupation currently held by women. For example, BLS projects that there will between 706,800 more people working as home health aides in 2020 than in 2010. The home health aide occupation is currently dominated by women, who account for 87.6 percent of workers, and pays only 61 percent of the overall median wage for all occupations. Women currently hold more than 60 percent of the jobs in 19 of the top 30 high-growth jobs. Only 5 of the top 15 growth jobs pay wages above the overall median. But only six of the disproportionately female jobs listed here typically pay wages that are above the overall median wage.

Percentage of jobs in occupation currently held by women	Number of jobs (in thousands)		New jobs (in thousands) projected to be created between 2010-2020		Median annual wage in 2010	Median annual wage for occupation as percentage of median annual wage for all occupations ($33,840 in 2010)
	2010: actual	2020: projected	Number	Percent increase		
47.0%	**143,068.2**	**163,537.1**	**20,468.9**	**14.3**	**$33,840**	**100%**
95.3%	508.7	718.9	210.2	41.3	30,530	90%
94.2%	752.3	920.8	168.5	22.4	40,380	119%
94.1%	1,282.3	1,544.3	262.0	20.4	19,300	57%
93.8%	527.6	690.4	162.9	30.9	28,860	85%
91.5%	1,048.5	1,297.0	248.5	23.7	25,240	75%
91.1%	1,288.3	1,479.3	191.1	14.8	23,220	69%
90.6%	2,737.4	3,449.3	711.9	26.0	64,690	191%
89.1%	1,898.3	2,157.4	259.0	13.6	34,030	101%
87.9%	1,505.3	1,807.2	302.0	20.1	24,010	71%
87.6%	1,017.7	1,723.9	706.3	69.4	20,560	61%
84.7%	861.0	1,468.0	607.0	70.5	19,640	58%
83.4%	2,950.7	3,440.2	489.5	16.6	26,610	79%
81.4%	1,476.5	1,725.3	248.8	16.8	51,660	153%
71.8%	3,362.6	3,612.8	250.2	7.4	18,500	55%
71.2%	2,260.3	2,456.2	195.9	8.7	18,330	54%
68.5%	1,424.4	1,627.8	203.4	14.3	47,460	140%
67.8%	2,187.3	2,525.6	338.4	15.5	30,460	90%
64.9%	2,682.1	3,080.1	398.0	14.8	17,950	53%
60.9%	1,216.9	1,407.6	190.7	15.7	61,690	182%
50.2%	4,261.6	4,968.4	706.8	16.6	20,670	61%
48.2%	1,756.0	2,061.7	305.7	17.4	45,690	135%
34.3%	691.0	859.3	168.3	24.4	111,570	330%
29.7%	2,310.4	2,556.8	246.4	10.7	22,210	66%
27.0%	1,430.0	1,653.4	223.4	15.6	52,440	155%
18.7%	2,068.2	2,387.3	319.1	15.4	23,460	69%
18.5%	1,035.7	1,230.7	195.0	18.8	23,920	71%
5.4%	1,604.8	1,934.9	330.1	20.6	37,770	112%
5.1%	1,151.5	1,392.3	240.8	20.9	23,400	69%
2.9%	998.8	1,211.2	212.4	21.3	29,280	87%
1.6%	1,001.7	1,197.6	196.0	19.6	39,530	117%

Because federal and state governments play a major role in financing care services through programs such as Medicaid, they could play a major role in improving compensation of the workers who provide these services. The government already plays such a role in certain male-dominated sectors such as the construction of highways and other public works. The Davis-Bacon Act effectively requires companies and employers working on federally funded infrastructure work to pay decent wages to their workers. It's time to apply a similar standard to ensure that public funds are being used to create living-wage jobs in the female-dominated care sectors.

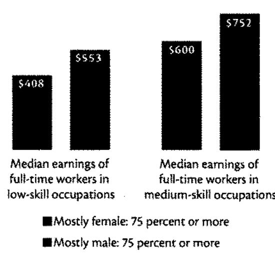
Home care or domestic workers—workers in private households who provide care, housekeeping, or various other services—are among the most vulnerable of all care workers. While the new rule on extending minimum wage and overtime laws to domestic workers is a step forward, these workers are often excluded from other basic labor standards that apply to the vast majority of the workforce.

A growing number of states have adopted or are considering Domestic Worker Bill of Rights laws. These laws would ensure that domestic workers have basic employment protections, such as an eight-hour day, overtime protections, and paid time off. These laws would also extend other protections specific to the unique circumstances of domestic work, such as a right to a minimum number of hours of uninterrupted sleep under adequate conditions.

New York approved Domestic Worker Bill of Rights legislation in 2010, and California and Hawaii approved legislation in 2013. In addition to state-level initiatives like this, we need a nationwide Domestic Worker Bill of Rights, as Ai-jen Poo calls for in this report. Basic labor standards such as these are a win-win—when domestic workers are better off, the people they care for are better off.

FIGURE 3

Female dominated professions are lower paid across skill levels



Source: Institute for Women's Policy Research

ENSURING EQUAL PAY

Many of the solutions discussed in this chapter would help close the wage gap, by helping women balance their roles as breadwinners and caregivers, improving the quality of low-wage work, better enforcing current equal opportunity laws, and providing better pathways into nontraditional, higher-paying fields. But even when controlling for education, experience, occupational choice, and time out of the labor market, there is still an unexplainable gap between men's and women's wages.[64] We need equal pay.

Ensuring equal pay for women has enormous public support: Our poll found that 90 percent of women on the brink and 73 percent of respondents overall strongly favored addressing the gender wage gap as a way to increase women's wages.

Enacting the Paycheck Fairness Act addresses the wage gap factors unexplained by occupation, industry, labor force experience, or education. And it would bring us one step closer to ensuring that women can bring home a paycheck equal to their male counterparts.

The bill would strengthen the Equal Pay Act in several important ways, including:

- Requiring employers to show that wage disparities between men and women performing the same work have a business justification and are not gender related

The gender wage gap in action

		Median weekly earnings, 2012		Workers (in thousands)			
		Male	Female	Male	Female	Percent of workers with education beyond HS	Typical/ required education
Male-dominated	Driver/sales workers and truck drivers	$736	$537	2433	101	31%	HS, Short-term OJT
	Grounds maintenance workers	$452		766	29	25%	LT HS, Short-term OJT
	Construction laborers	$609		913	24	24%	LT HS, Short-term OJT
	Security guards	$537	$501	603	138	54%	HS, Short-term OJT
Female-dominated	Nursing, psychiatric, and home health aides	$508	$445	173	1285	44%	Post secondary non degree award
	Personal and home care aides	$465	$412	99	450	44%	LT HS, Short-term OJT
	Secretaries and administrative assistants	$803	$665	105	2146	65%	HS, Short-term OJT
	Bookkeeping, accounting, and auditing clerks	$740	$672	102	755	64%	HS, Short-term OJT

Source: Table 39 in Bureau of Labor Statistics, 2013 Employment and Earnings Online, Annual Average Household Data, February 13, 2013.

HS = High school
LT HS = Less than high school
OJT = On-the-job training

Ensuring equal pay for women has enormous public support: Our poll found that 90 percent of women on the brink and 73 percent of respondents overall **strongly** *favored addressing the gender wage gap as a way to increase women's wages.*

- Banning employer retaliation against workers who ask about their employers' wage practices or share information about their own wages, both of which help women understand what they are making relative to their colleagues
- Creating a grant program to provide salary negotiation training for women and girls
- Improving remedies for equal pay violations to deter employers from discriminating in the first place
- Strengthening the capacity of the relevant enforcement agencies to prevent gender discrimination and to enforce the law by authorizing additional training, research, education, and data collection[65]

CONCLUSION

At the beginning of this chapter, we posed the question: How do we put women and their families at the center of our public policymaking? Answering this question requires us to acknowledge that today, two-thirds of U.S. mothers are primary or co-breadwinners, but that too many of our public policies are stuck back in 1964, when most families had a woman at home to be the full-time caregiver.

It's time to enact 21st-century policies that help 21st-century women manage their care responsibilities and bolster their potential as breadwinners. Doing so would provide greater opportunities for women to join the workforce and help close the persistent gender wage gap—helping millions of families join the middle class and contributing to long-term economic growth for the nation.

Putting women at the center of our policymaking means enacting paid sick days legislation so that people like Elose don't have to choose between their health and their job. It means expanding affordable, quality pre-K and child care so that more families like Jennifer's can get back on their feet. It means modernizing our policies to provide access to paid family leave, so that people don't have to choose between taking a few weeks to welcome a newborn child or earning enough income to provide economic security for their new family. And it means boosting wages for breadwinners through an increase in the minimum wage, modernizing public work supports, giving future college students better information about educational investments, and providing tools for pay equity.

These solutions would help millions of working women achieve financial security. At the same time, the solutions deliver long-term economic benefits and help strengthen our economy.

There are 42 million Eloses and Jennifers—women on the brink, and another 28 million children who depend on them. There is clear evidence that the public solutions outlined in this chapter would help millions of women and families push back, and in the process enhance U.S. economic growth and competitiveness.

It's not a question of if we know how to do it. It's a question of whether or not we have the political will to get it done.

THINK ABOUT THIS

The United States is the only industrialized nation in the world without paid sick leave.

ENDNOTES

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We Have Blown a Huge Hole in Our Safety Net

By PETER EDELMAN, professor of law, Georgetown Law Center, and faculty director, Georgetown Center on Poverty, Inequality, and Public Policy. His most recent book is **So Rich, So Poor: Why It's So Hard to End Poverty in America.** *He has served in all three branches of the federal government.*

In our rich nation, one-third of American citizens—106 million people—have incomes below twice the poverty line, which is just $46,000 for a family of four. Why? And why are they disproportionately women, children, and people of color?

Look back to the early 1970s, when America seemed to be heading in the right direction. We had cut poverty almost in half, to the low rate of 11.1 percent. Of course, the hot economy helped, as did programs from the War on Poverty and changes from the civil rights movement, which resulted in large employment gains for African Americans.

What happened later was mostly unforeseeable. Globalization and new technology started destroying the industrial jobs that had built the middle class. Unions began to lose members. The minimum wage stagnated. Family structures changed, creating a much larger cohort of single mothers coping in the job market by themselves. Urban school systems declined in quality. The concentration of poverty in inner-city areas—already a problem in the 1960s—got far worse. Immigration—especially illegal immigration—flooded the labor market with people willing to work for low wages. The ugly politics of race continued, especially in relation to welfare and crime; drug laws and racialized law enforcement targeted African American and Latino men for incarceration. And as the number of people who fell into poverty grew and grew, inequality spectacularly widened, with the fruits of economic growth going to those at the very top.

But in spite of what conservative politicians and commentators say, the problem is not that the poor prefer to depend on public benefits rather than go to work. Neither is it an undue use of public benefits. These shopworn accusations persist, but they were false from the start.

The truth is that 68 percent of children who are poor live in families in which someone does have a job.[1] But often, these jobs pay so little that they don't lift families out of poverty, or they leave these families living on the brink. Yes, there are other pressing problems: public education, law enforcement policy, a decent safety net, concentrated poverty, and more. But the fundamental problem with regard to poverty and economic insecurity today is the flood of extremely low-wage work that keeps families stuck on the lower rungs.

Half of the jobs in the country pay less than $34,000 per year. A quarter of them pay less than the federal poverty level for a family of four, which is approximately $23,000 per year. While money has poured into the upper reaches of our economy, wages in the lower half are basically stagnant, having increased by a mere 7 percent over the past 40 years—just one-fifth of a percent per year. The people who hold these low-wage jobs are disproportionately women, especially women with children. It's no wonder that the poverty rate for children who live with single mothers is well over 40 percent, and that four out of five families headed by a single mother live on the financial brink.

Public benefits definitely help. A family with a minimum-wage job holder and two children gets about $5,500 from the earned income tax credit and another $1800 from the child tax credit—nearly a 50 percent increase in income. But we need to do much more, and increasing wages remains at the top of the list. President Barack Obama's proposal to raise the minimum wage to $9 an hour and index it to inflation would help,[2] and Congressman George Miller's proposal to increase it to $10.10 would help even more.[3] The Medicaid expansion in the Affordable Care Act is phenomenally important. Increased investments in child care, housing assistance, and help with postsecondary education would all raise incomes too. These policies free up money for families to spend in their local economies.

The space allotted for this essay does not permit a detailed discussion of education, crime policy, and initiatives focused on concentrated poverty, so I will focus on only one more issue: deep poverty—the 20 million people who, according to the Census, have incomes below half of the poverty line, which is below approximately $9,500 per year for a family of three.

Since 1996, we have blown a huge hole in our safety net with the demise of welfare. The federal "reform" enacted that year led to the virtual disappearance of welfare in about half the states. Before then, 68 percent of families with children received income assistance. Now the number is just 27 percent. It is true that the welfare system needed reform, but it is now clearer than ever that the welfare reform of 1996 has trapped millions of women and children not just in poverty but also often in deep poverty—and they cannot get out. Six million people—again, disproportionately women and children—have an income comprised only of food stamps. That is an income of little more than $6,000 per year for a family of three, or just one-third of the income level considered "poverty."

The large class of people living on the brink is traceable to our economic malaise and the power that some politicians wield in Washington and many states. But our most glaring public policy error is what we have done to the safety net for the most vulnerable women and children in our nation. And our most glaring omission is our failure to address the proliferation of poorly-paid jobs that leave working families struggling. We have a lot of work to do.

ENDNOTES

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The Circle of Protection: Balancing the Budget Does Not Require Burdening the Poor

By LEITH ANDERSON, president of the National Association of Evangelicals and former senior pastor of Wooddale Church in Eden Prairie, Minnesota. He is a signatory of the Circle of Protection, a religious advocacy group focused on protecting programs for the poor.

In the time of the Old Testament, Ruth came to Bethlehem as a foreigner from a strange land and a poor widow. Her story is of a life transformed. Ruth became not just a wife and a mother, but also a leader of her people and the great-grandmother of Israel's King David. Her story became the eighth book of the Bible, and the New Testament lists her as one of the foremothers of Jesus Christ. For 3,000 years, millions of parents around the world have named their daughters after this once-obscure woman. How did all that happen? Believe it or not, it all started with a government-assistance program!

The biblically mandated program that transformed Ruth from powerless to powerful was an Old Testament practice called "gleaning." The law required farmers not to harvest the corners of their fields, to leave behind crops missed by the first harvest, and not to collect some grapes in their vineyards. The poor, orphans, and immigrants were then invited to gather or "glean" the leftovers to provide for their own families. It was more than charity; it was the law.

Ruth was one of the law's beneficiaries. In Bethlehem, this poor immigrant woman from Moab gleaned the fields of a man named Boaz. She eventually married Boaz and began one of the most famous family dynasties in history.

We evangelical Christians take the Bible seriously, so what does Ruth's story teach us? It teaches us to protect and provide for modern-day Ruths—poor women and others who need help. Even without a government mandate, our churches have established ministries to provide housing, food, preschool education and day care, job placement, medical clinics, and much more for the poor in our communities.

But we also recognize that voluntary help isn't enough. Just as in biblical times, we have government-mandated programs that help the poor and nearly poor in our country. But recently, budget considerations have put these programs in jeopardy.

That is why the National Association of Evangelicals has partnered with a broad array of other religious organizations in a program called "The Circle of Protection" to assure continued help for our population's most vulnerable people. More than 65 heads of denominations, relief and development agencies, and other Christian organizations have joined hands and voices in this coalition. We are forming a Circle of Protection around programs that meet the essential needs of hungry and poor people at home and abroad.

Those of us in the circle are always in favor of fiscal restraint and the elimination of government budget deficits, but we also insist that budget cuts are not made at the expense of those who need help, most of whom are women, children, and the elderly. Balancing the budget does not require burdening the poor.

In all of the current budget debates, the focus has been on the needs of middle-class Americans. That's legitimate; a strong middle class forms the economic backbone of our country. But little has been said about the tens of millions of poor Americans. If they are discussed, the conversation turns too often to blaming them, dismissing them, slashing programs that help them, and generally pushing them out of sight and out of mind. This is wrong.

We know it's wrong because of the Bible's hundreds of commands to care for the widows, the orphans, the strangers, the marginalized, and the needy. That is why we need what we would call a "moral budget" that protects those whom Jesus called "the least of these." That is, first and foremost, a moral mandate from God to respect those who are created in his image.

But this isn't just about morality; it is a matter of economic pragmatism. Programs that feed the hungry, educate the underemployed, prepare preschoolers, and preserve the family unit are good for everyone. They provide ladders out of poverty and into the middle class. Government-supported job training and work assistance programs help poor people work their way up, ultimately strengthening the U.S. economy by lessening the need for other types of federal aid—a way to reduce the nation's debt. These are not drains on our wealth. They are investments in our nation's greatest source of wealth—its people. It is important to reduce deficits, yes—but in ways that do not increase poverty or inequality.

Since the poor and vulnerable do not have the financial resources or organizational clout to influence government budgets, we will continue to use our influence on their behalf. At the same time, we must do our part to help them outside of government as individuals, churches, and nongovernmental organizations.

Let us all make sure we keep the gate to the American Dream of life, liberty, and the pursuit of happiness open for everyone. It's not just the right thing; it's the smart thing. Just ask Ruth.

From VISTA Corps to Shriver Corps: Providing Solutions for 50 Years

By SHIRLEY SAGAWA, presidential appointee and advisor in the first Bush and Clinton administrations, who has been called "the founding mother of the modern service movement." She was instrumental in the drafting and passage of legislation creating AmeriCorps and the Corporation for National and Community Service.

In 2012, Rosa Carty, a single mom and Army veteran who served her country during the Afghanistan War, was planning a law enforcement career when a car struck her, injuring her badly. As Rosa describes it, "I felt like I was in the prime of my life. Then, all of a sudden, my plans were stripped away from me." During her lengthy recovery, she was unable to find employment that would support her daughter and get her the ongoing medical help she needed. She spent months unsuccessfully seeking help from government and community agencies, but she kept hitting brick wall after brick wall. "There was a lot of misinformation out there, and I was literally nothing more than a case number," she says.

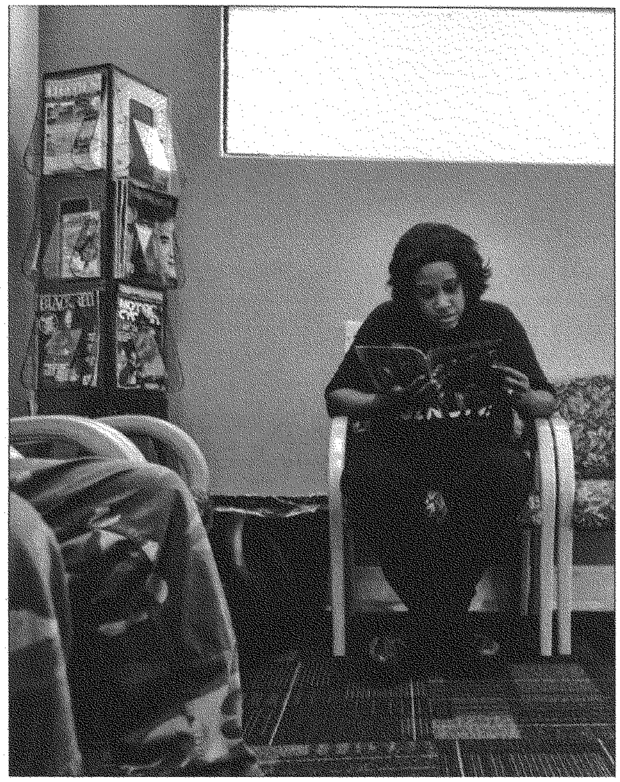
Then Rosa discovered LIFT, an anti-poverty organization where she found not brick walls, but solutions. At LIFT, AmeriCorps members and volunteers teamed up to help her develop an action plan, then find and connect her to the resources she needed. Their efforts paid off. She was able to stabilize her housing situation and find a job.

As Rosa's story shows, national service volunteers can directly help struggling women get on the path to self-sufficiency. Of course, this isn't a new idea. National service as a strategy to address poverty dates back to 1964, when Sargent Shriver created the domestic Peace Corps equivalent called Volunteers in Service to America, or VISTA, for President Lyndon B. Johnson's War on Poverty. VISTA became part of AmeriCorps when that national volunteer service network was created in 1993.

AmeriCorps members, supported in part through the federal Corporation for National and Community Service, receive modest living allowances and education scholarships in exchange for one or two years of full-time service.[1]

LIFT has made use of AmeriCorps members in its own innovative service-delivery model, which pairs clients like Rosa with these highly trained volunteers who help them identify and achieve their goals: getting a decent job and providing their families with safe homes, quality education for their kids, and economic stability and security. Rosa Carty says that at LIFT, she was a person with a name, not just a number, and that is what differentiates it from other service providers.

Kirsten Lodal—who was a college student when she co-founded LIFT in 1998—says LIFT's culture



Air Force veteran Kristy Richardson relies on public transportation to travel to and from work and the Veterans Administration Hospital in Pittsburgh, Pennsylvania, where she is being treated for PTSD. Even in the face of trauma, Kristy maintains a good attitude and wants to succeed. (MELISSA FARLOW) of service is based on respect and collaboration. AmeriCorps members and other LIFT volunteers provide direct personal contact and connections—not only helping thousands of clients get hooked up to resources they need now, but also providing the support network, the confidence, and the skills they will need to manage tough times in the future, and to ultimately give back to others through service.

"AmeriCorps members serve because they want to make a difference for a year or two," says Lodal. "But their experience inspires a lifelong commitment to ending poverty." For example, Rosa Carty was inspired to pay it forward herself, returning to LIFT to lead the program that teams AmeriCorps volunteers with veterans like her, and connecting them to life solutions.

For 50 years, this national service model has worked. Today, there are many AmeriCorps programs helping people who are struggling to find the help they need. Here are just a few of those programs:

- **The National Anti-Hunger and Opportunity Corps** engages VISTA volunteers to fight hunger and improve nutrition, primarily by increasing participation in the Supplemental Nutrition Assistance Program, or SNAP—formerly known as food stamps—and by helping anti-hunger community organizations increase their capacity to provide comprehensive benefit assistance and outreach to low-income constituents.

- **VetCorps** in Washington state engages AmeriCorps members to provide support, resources, and information to help veterans in college navigate the G.I. Bill and university financial aid offices, and also access other federal, state, or local veterans benefits.

- **Minnesota Opportunity Corps Employment Navigators** are AmeriCorps members who use research-based instruction and tools to help clients navigate through employment and post-secondary education and become self-sufficient.

These and so many other programs demonstrate what Sargent Shriver knew 50 years ago. National service members don't just bring savvy and skills plus caring and commitment to their work; they also offer a critical advantage over many traditionally staffed government programs because AmeriCorps members and the volunteers they recruit don't have to keep a constant eye on the clock. They can take the time clients need to get their problems solved.

So today, with many millions of women and families living on or over the brink of poverty, we have a new opportunity. The national service model could present a scalable way to increase opportunity for millions of families.

To this end, Corporation for National and Community Service CEO Wendy Spencer has agreed to deploy VISTAs around the country in a new **Shriver Corps.** They will develop tools connecting eligible low-income families with the educational opportunities, job training, and access to public benefits that can help them get on firm economic footing—and then train community volunteers how to use these tools. By pairing the Shriver

Corps' low-cost, high-impact human capital with computer technology we have today, we can help states easily and efficiently identify and connect struggling women and their families to available sources of assistance—providing more efficient access instead of brick walls.

Unfortunately, even though Congress authorized a large expansion of AmeriCorps in 2009, funding has actually declined in recent years, causing many programs to close. Fully funding AmeriCorps, particularly VISTA and the Opportunity Corps authorized under the Edward M. Kennedy Serve America Act, would enable programs such as LIFT to grow. In addition, states could use federal TANF block-grant funds to support AmeriCorps positions that assist TANF recipients; one of the goals of the law is to "end the dependence of needy parents on government benefits by promoting job preparation, work and marriage."

In this way, a national system of AmeriCorps members leading, training, and working with volunteers—all using shared computer technology to connect clients with programs and opportunities—could provide a scalable solution to supply the human resources needed to help every low-income family find a way out of poverty. Fifty years after the War on Poverty was launched, we can do this.

ENDNOTES

1 AmeriCorps service may also be part time, with benefits prorated.

AMI VITALE

ALLIE WINANS • Missoula, Montana

Allie Winans is the mother of two daughters, and her husband, Frank, is a truck driver for Missoula Septic Services. Both of their daughters suffer from severe disabilities, and Allie is their 24-hour caretaker.

Forced to file for bankruptcy due to health care costs and medical-bill debt, the family struggles to stay afloat financially and emotionally. "We are in survival mode," Allie said. But they remain focused on getting through each day as a team. Allie also relies on Women's Opportunity and Resource Development, Inc. of Missoula for support and as a connection to resources to help her and her family.

A Hand Up, Not a Handout

By C.L. "BUTCH" OTTER, Governor of Idaho.

Similar to many states, Idaho has spent much of the past five years weathering the Great Recession and its challenges, from job losses to home foreclosures to budget shortfalls. Such dire challenges, however, can often bring change, and these recent changes in our economic landscape have opened the door to a great opportunity.

In 2010, Idaho became one of nine states partnering with the Urban Institute and the Ford Foundation in the Work Support Strategies project, a focused effort to transform the landscape of health and human services—and specifically the delivery of those services to low-income working families—by sharing innovative ideas, identifying best practices, and collaborating on solutions. Idaho's goal is to approach "welfare" from a new perspective: not as a handout, but rather as a strategic hand up.

There is broad consensus in our state that government services should be aimed not at growing entitlement programs but rather at helping families enter and succeed in the workforce. This isn't a new idea. As Thomas Jefferson once said, "If we can but prevent the government from wasting the labors of the people under the pretense of taking care of them, they must become happy."

Through the Work Support Strategies project, the Idaho Department of Health and Welfare has joined with community partners, policymakers, officials in other states, and the Urban Institute to identify gaps in the services available to low-income working Idahoans and reduce the impediments to receiving those services for which they are eligible. We have specifically focused on improving delivery of Supplemental Nutrition Assistance Program, or SNAP, benefits—formerly known as food stamps—Medicaid, child care subsidies, and our temporary cash program to the working poor, while streamlining administration and reducing our own operating costs.

For instance, we have introduced technological innovations such as a cloud-based phone system for statewide universal case management. Now when someone calls to apply for or recertify benefits, any eligibility decision maker anywhere in Idaho can take the phone call and complete the interview. In addition, our new case management system auto-loads verified information, triggering eligibility immediately. We have also enhanced our verification process into one easy-to-use, on-demand tool for those who make eligibility decisions. That increases the accuracy of decision making, while decreasing costly interactions with applicants.

Idaho is also on the cutting edge of what we call "business process re-engineering" to simplify cumbersome agency processes and reduce red tape. One example is our integrated application and interview process, which puts the person in direct and immediate contact with an eligibility decision maker, eliminating the need to fill out our typical eight-page paper application. We are also reducing application-processing time by using telephonic signatures, eliminating the delay caused by moving forms through the mail. One result of all this: Idaho now consistently approves SNAP applications in less than two days on average.

A big focus of our Work Support Strategies project has involved integrating the various programs for low-income families. States have to deal with multiple federal programs administered through multiple federal agencies, each with competing policies, budgets, and reporting requirements. Idaho has spent the past two years integrating our SNAP; Medicaid; Temporary Assistance for Needy Families, or TANF; and child care programs as much as possible. To do this, our state rules on poverty levels, income calculations, verification standards, and reporting requirements have been changed across all programs.

So now with federal waiver requests, integrated application and recertification processes, and new case-management disciplines, Idaho has created a holistic, family-centric approach to service design and delivery.

Improving the Idaho Child Care Program has been another one of our goals. For breadwinners in families living near or below the poverty level—particularly single-parent families—finding and paying for child care is very often a big roadblock to finding and maintaining stable employment. We have redesigned our subsidy calculations to provide a flat rate per child, thereby creating stable, reliable subsidies for both parents and child care providers. We also have changed policies to ensure access for students receiving child care assistance while in school, but not at the expense of low-income working families.

Idaho's commitment to enabling low-income families to enter and stay in the workforce has meant investing in innovative solutions such as these. Yes, acquiring the right technology is critical. But technology is not the driver for innovation; it is only a facilitator. Real change and effective governance come from policy and eligibility innovation, simplified business redesigns with reduced paperwork, integrated verification systems, and improved communication. Now our Welfare Division, which serves one in three Idahoans over the course of a year, operates with one of the lowest-cost and most effective program administrations in the country. Outcomes such as these are proof that government can operate effectively at lower costs and with better results.

We believe that providing cost-effective administration is a responsibility of government. So, too, is providing key supports such as health coverage, food and nutrition assistance, and child care. We also believe that the path to self-sufficiency cannot be found in welfare programs alone but must include integrated and supportive services that help families get into and stay in the workforce, take advantage of new opportunities unfolding as the economy improves, and pave their own path out of poverty and into the mainstream of Idaho's economy. That's not just good for our families but also for our state.

A hand up, not a handout. Idaho's spirit of self-determination and independence is based on this principle, and we value the partnerships we've gained with the Ford Foundation, the Urban Institute, and community and state leaders who are helping us put this spirit into practice.

On the Brink with a Disabled Child

By KATIE BENTLEY of Covington, Kentucky, who testified before Congress about Supplemental Security Income, or SSI, benefits for low-income disabled children. She is on the board of The Arc of the United States, an organization advocating for the intellectually and developmentally disabled.

Will is my 10-year-old son, and he is my hero. He fuels my passion to make the future better for disabled kids and their families. He has taught me everything I know about courage and commitment.

Will seemed fine as a baby, but as he grew, it became clear that something was very wrong. He was unable to talk, take a drink, or feed himself, and the doctors thought that he had autism. Then, when he was 3, he collapsed with a massive seizure. I held him for terrifying minutes as his body banged against me, afraid he would never breathe again.

An MRI revealed brain lesions, the cause of what became frequent, violent electrical storms in his head. The diagnosis: A severe seizure disorder causing memory loss, sensory integration disorder, and developmental and intellectual disability in just about every area of his life.

He went downhill. The more seizures he had, the more he fell behind—struggling every day with feeding himself, walking, and communicating. During the day, he would learn how to do or say something; at night, seizures wiped out the information. He had to learn over and over again, and he did.

My husband William and I both had jobs and medical insurance. He is a diesel mechanic, and I operated a state-certified child care facility. But I was missing too much work because of ferrying Will to therapists and doctor appointments, emergency room visits, and long nights filled with seizures. I closed my business and took a much lower-paying job with flexible hours so I could care for him.

Eventually, Will's anxiety and need for constant care became so great that he was unable to cope. The nurses at his daycare said he would lie listless and cry all day long. He would get sick and not eat for days, causing more seizures. Finally, I quit my job to care for my son full time.

William and I had always promised ourselves we would do all of this on our own. But we had to pay $1,000 a month not covered by insurance for Will's anti-seizure medications, and we found we could barely afford the fuel to drive him to frequent appointments for speech, physical, and occupational therapy, not to mention constant visits to physicians on his medical team, including a developmental pediatrician, immunologist, psychologist, allergist, and others—and the co-pays for all those sessions. We were on the brink and needed help.

We turned to Social Security Insurance for low-income children with disabilities. We held our breath, as Social Security turns down almost 60 percent of all applications for this benefit.[1] Months later, Will was awarded SSI. That meant he also qualified for Medicaid coverage to supplement our own policy, alleviating the burden of so many huge co-pays for professionals and medication. And we were now able to purchase the specialized education supplies, therapy equipment, and feeding items we couldn't afford before. Every three years, SSI requalifies him for the benefit by examining his medical records and our income level.

Today, Will is much improved. He has breakthrough seizures, but for the first time, they are mostly under control. He is reading at a third-grade level. Slowly but surely, he is learning how to swim. He has become a great activist for kids with disabilities, and he got a Kentucky State Advocacy Award for helping pass a law protecting children from "restraint and seclusion"[2] in public school—a practice of which Will was a victim. We believe his preschool teacher punished him because he couldn't learn like the other kids, and we found out only after he learned how to talk and told us.

In 2011, Will and I attended a hearing held by the House Ways and Means Subcommittee on Human Resources. I listened as "experts" shared their belief that families of children with severe disabilities are getting rich from SSI government aid. Rich? I told them of our struggles to get and keep what Will needed. I told them that Will wouldn't be where he is today if we hadn't had access to these resources. I talked about my expectations that he will contribute to his community and not be the burden the experts believe these children become as adults. As a matter of fact, I now work part time helping other children with disabilities learn how to do just that: not be afraid to go out and be an active part of their world.

Right before that trip, when he was almost 7, Will picked up a book and read for the first time. I burst into tears. After that, he'd say before reading, "Mommy, are you gonna cry?" My son—my hero—has a big heart. With all of his setbacks, he never quits. And that's the greatest lesson he ever taught me.

ENDNOTES

1 Social Security Administration, "Table V.C2.—Disabled Child Claims: Disposition of Applications for SSI Disability Benefits by Year of Filing and Level of Decision." in "Annual Report of the Supplemental Security Income Program" (2012), available at http://www.ssa.gov/OACT/ssir/SSI12/ssi2012.pdf.

2 U.S. Department of Education, "Restraint and Seclusion," available at http://www2.ed.gov/policy/seclusion/index.html (last accessed September 2013).

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A Grand Gender Convergence: Its Last Chapter†

By CLAUDIA GOLDIN*

The converging roles of men and women are among the grandest advances in society and the economy in the last century. These aspects of the grand gender convergence are figurative chapters in a history of gender roles. But what must the "last" chapter contain for there to be equality in the labor market? The answer may come as a surprise. The solution does not (necessarily) have to involve government intervention and it need not make men more responsible in the home (although that wouldn't hurt). But it must involve changes in the labor market, especially how jobs are structured and remunerated to enhance temporal flexibility. The gender gap in pay would be considerably reduced and might vanish altogether if firms did not have an incentive to disproportionately reward individuals who labored long hours and worked particular hours. Such change has taken off in various sectors, such as technology, science, and health, but is less apparent in the corporate, financial, and legal worlds. (*JEL* J3, J16, J22, J24, J31, J33, N3)

I. Converging Roles

Of the many advances in society and the economy in the last century, the converging roles of men and women are among the grandest. A narrowing has occurred between men and women in labor force participation, paid hours of work, hours of work at home, life-time labor force experience, occupations, college majors, and education, where there has been an overtaking by females.[1] And there has also been convergence in earnings, on which this essay will focus. Although my evidence is for the United States, the themes developed here are more broadly applicable.

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[1] See Goldin, Katz, and Kuziemko (2006) on women's college education. In terms of years of schooling, US women were ahead of men until the 1930s and then regained the lead (Goldin and Katz 2008a).

These parts of the grand gender convergence occupy various metaphorical chapters in the history of gender roles in the economy and society. But what must be in the "last" chapter for there to be real equality?

The answer may come as a surprise. The solution does not (necessarily) have to involve government intervention. It does not have to improve women's bargaining skills and desire to compete. And it does not necessarily have to make men more responsible in the home (although that wouldn't hurt). But it must involve alterations in the labor market, in particular changing how jobs are structured and remunerated to enhance temporal flexibility. The gender gap in pay would be considerably reduced and might even vanish if firms did not have an incentive to disproportionately reward individuals who worked long hours and who worked particular hours. Such change has already occurred in various sectors, but not in enough.

Before I discuss what is needed to close the gender gap and what must be in the last chapter, I should first discuss what is contained in the preceding figurative chapters. That will set the stage for the detective work necessary to uncover what the last chapter must contain.

The preceding metaphorical chapters unfolded across at least the last century. Narrowing occurred in a host of economic areas. Changes in labor force participation and the reasons for the changes were discussed in my Ely Lecture (Goldin 2006). A grand convergence occurred in labor force participation for adult women from the early twentieth century to more recently. But a plateau in participation has emerged for US women in most age groups, even for college graduate women, since around the 1990s. The plateau may be related to the relative earnings issues that I will soon discuss. If certain women are disadvantaged in the labor market their participation will be stymied.[2]

Lifetime job experience rose along with labor force participation. Years of education for women increased more than it did for men and it changed in content for secondary and college education toward more investment-oriented and fewer consumption-oriented courses and concentrations. Professional and graduate program enrollment increased for women so that about half of all law and medical enrollments today are women, and women lead men in fields such as the biological sciences, pharmacy, optometry, and veterinary medicine.

Women, particularly college graduates, increased their desire to attain "career and family."[3] Hours of work for women increased in the market and decreased in the home relative to those of men. Female earnings rose relative to males in an era that saw women "swimming against the tide" of generally rising income inequality.[4] Thus the various metaphorical chapters that precede the "last" chapter explored here are those of a grand gender convergence.

Convergence in some economic outcomes has also occurred *within* various groups of women. Until the 1970s most non-employed adult women had not been in the workforce since they were first married or since having their first child. Currently

[2] The labor force participation plateau is also related to government policies regarding the length of family leave job protections. See Blau and Kahn (2013).

[3] The history of the goal and achievement of career and family is discussed in Goldin (2004, 2006).

[4] On trends in the gender pay gap, in particular the narrowing in the 1980s and 1990s, see Blau and Kahn (1997, 2000, 2006a).

employed women, however, had worked most years since leaving school.[5] With increased labor market participation women were no longer divided as much along the lines of currently or not currently employed.

II. Gender Gaps in Earnings over the Life-Cycle and by Occupation

Even though there are many ways to measure the degree of gender equality in the economy, the one that stands out is earnings, particularly earnings per unit time or the wage. Because relative earnings often signify how individuals are valued socially and economically, earnings ratios between men and women have been banners for social movements. The mantra of the women's movement in the 1970s was "59 cents on the dollar" and a more recent crusade for pay equality has adopted "77 cents on the dollar."

The wage is also a summary statistic for an individual's education, training, prior labor force experience, and expected future participation. The gender gap in wages is a summary statistic for gender differences in work. For a long time the gender gap in wages has been viewed as summarizing human capital differences between men's and women's productivity as well as differential treatment of men and women in the labor market. As the grand gender convergence has proceeded, underlying differences between the human capital capabilities of women and men have been vastly reduced and in many cases eliminated.[6]

What do we know about how much of the difference between male and female wages is due to differential treatment in the labor market and how much to differences in productive characteristics? That question has been addressed by many and I will briefly summarize the findings and provide further comment.

Most of the gender wage gap studies have produced estimates of an "explained" and a "residual" portion.[7] The "residual" is often termed "wage discrimination" since it is the difference in earnings between observationally identical males and females.

The explained portion of the gender wage gap decreased over time as human capital investments between men and women converged. Differences in years of education, in the content of college and in accumulated labor market experience narrowed. In consequence, the residual portion of the gap rose relative to the explained portion.[8]

But what can explain the residual portion of the gap that now remains? There are many contenders. Some would claim that earnings differences for the same position are due to actual discrimination. To others it is due to women's lower ability

[5] Data on "heterogeneity" and "homogeneity" of labor force participation are in Goldin (1989). Wage inequality, however, has risen within the group of employed women since the 1980s as it has for men.

[6] Altonji and Blank (1999) present a standard treatment and find (table 4) that the gender gap in CPS data for 1979 was larger than for 1995 and that a larger fraction was explained by human capital variables.

[7] Estimates of the explained and residual portions can be found in Blau and Kahn (2006b) and O'Neill and Polachek (1993), who put considerable emphasis on the increase in job market experience for the narrowing of the gender wage gap in the 1980s. Mulligan and Rubinstein (2008), however, claim that changes in selection were responsible.

[8] According to Blau and Kahn (2006b, table 3) who use the PSID, the raw gender gap in earnings for full-time employed workers was 0.459 in 1979 and 0.227 in 1998. Human capital factors explain 24.6 percent of the raw gender pay gap in 1979 but just 7.93 percent of the gap in 1998.

to bargain and their lesser desire to compete.[9] Still others blame it on differential employer promotion standards due to gender differences in the probability of leaving.[10]

The existing explanations for the residual gender pay gap regarding how women compete and bargain relative to men have some merit. But they do not explain why different amounts of time out of the labor force and different numbers of hours worked per day or per week have a large effect on the time-adjusted earnings in some occupations but not in others. They do not explicate why some positions have a highly nonlinear (convex) pay structure with regard to hours worked and some are almost perfectly linear.[11]

The alternative reasons for the residual gender pay gap do not help illuminate why earnings differences by sex expand so greatly with age. They also do not explain why women without children generally have higher earnings than women with children and why the former's earnings are almost equal to those of comparable men.[12]

A better answer, I will demonstrate, can be found in an application of personnel economics.[13] The explanation will rely on labor market equilibrium with compensating differentials and endogenous job design.

As women have increased their productivity enhancing characteristics and as they "look" more like men, the human capital part of the wage difference has been squeezed out. What remains is largely how firms reward individuals who differ in their desire for various amenities. These amenities are various aspects of workplace flexibility. Workplace flexibility is a complicated, multidimensional concept. The term incorporates the number of hours to be worked and also the particular hours worked, being "on call," providing "face time," being around for clients, group meetings, and the like. Because these idiosyncratic temporal demands are generally more important for the highly-educated workers, I will emphasize the college educated and occupations at the higher end of the earnings distribution.

Jobs for which bargaining and competing matter the most, I will demonstrate, are also positions that have the greatest nonlinearities (meaning convexity) of pay with respect to time worked. Field and laboratory experiments often show that women shy away from competition.[14] But these experiments do not consider the types of jobs that reward competition the most. Often those are winner-take-all positions, such as partner in a firm, tenured professor at a university, or top manager. These are also positions for which considerable work hours leads to a higher chance of obtaining the reward, and it is often the case that hours alone get rewarded. Persistence in these positions and continuous time on the job probably matters far more to one's success than a desire and ability to compete.

[9] On the role of bargaining, see Babcock and Laschever (2003). On competition see Gneezy, Niederle, and Rustichini (2003) and Niederle and Vesterlund (2007). Manning and Saidi (2010), however, find little empirical evidence for competition in explaining the gender gap in earnings.

[10] Lazear and Rosen (1990) assume narrowly defined occupations in which there should be no gender gap but they generate one based on different preferences for employment discontinuity between women and men. Employers have higher ability standards for promoting women than men.

[11] As used here, the term "nonlinear" means convex.

[12] A large literature on the "child earnings penalty" exists. See, for example, Waldfogel (1998).

[13] For a modern version of the field of personnel economics see Lazear (1995).

[14] For a description of many field and laboratory experiments see Gneezy and List (2013).

But I have gotten ahead of myself. Let us first look at the evolution of gender gaps in earnings over the life-cycle and differences by occupation. These hold clues to what must be in the last chapter for it to be the finale of the grand gender convergence.

A. *In the Aggregate and over the Life-Cycle*

The ratio of (mean) annual earnings between male and female workers (full-time, full-year, 25 to 69 years) was 0.72 in 2010 and that of the medians was 0.77. The ratio of the medians for the same group was 0.74 in 2000 but 0.56 in 1980.[15] These aggregate ratios have been somewhat sticky for the last ten years or so after greatly increasing in the preceding decades, especially in the 1980s. The same is true looking only at college graduates, for whom the ratios are lower—0.65 in 2010 for the means and 0.72 for the medians, about the same as it was in 2000. Interestingly, across the past decade the gender pay gap has narrowed *within* almost all age groups even though the aggregate has not budged as much. How can that be?

The answer concerns what happens to the gender gap over the life-cycle. The ratio of female to male earnings greatly decreases for some time as cohorts age. It is lower for individuals in their forties compared with the same individuals in their twenties. And because the baby boom is still working its way through the population, the aggregate ratio can be fairly stable even though the underlying components are actually increasing.

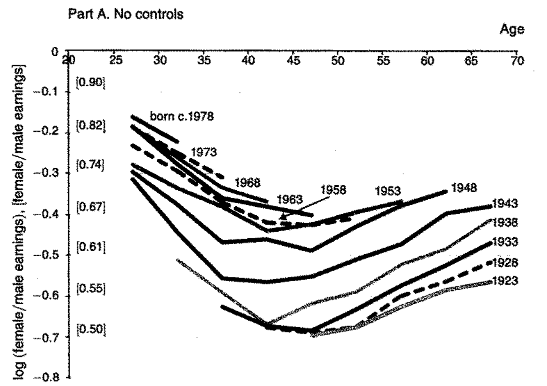
One way to see change in the earnings gender gap by age is to construct synthetic birth cohorts, as shown in Figure 1, part A for college graduate men and women working full-time, full-year and in Figure 1, part B for college graduates with controls for hours, weeks, and further education.[16] The data used are from the US Census and the American Community Survey (ACS) for the years from 1970 to 2010.

The most obvious and important findings from these depictions are that each cohort has a higher ratio of female to male earnings than the preceding one and that the ratio is closer to parity for younger individuals than it is for older individuals, at least up to some age. One part of the story of the preceding metaphorical chapters is that there have been large gains in the earnings of women relative to men. An important clue to what it will take to create gender equality in earnings is that something happens that decreases women's earnings relative to those of men as they age.

Men and women begin their employment with earnings that are fairly similar, both for full-time year-round workers and for all workers with controls for hours and weeks. In the case of the latter group, relative earnings are in the 90 percent range for the most recent cohorts even without any other controls. But these ratios soon decline and in some cases plummet to below the 70 percent level.

[15] Full-time, full-year means 35 hours or more per week and 40 weeks or more per year, throughout this piece. The sample excludes earnings outliers (see notes to Figure 1) and members of the armed forces. The 2010 ratios are an average for 2009 to 2011 from the American Community Survey micro-data. Those for 1980 and 2000 are computed from the U.S. Census micro-data.

[16] The synthetic cohort ratios are derived from a set of cross-section regressions on white, native-born, non-military full-time, full-year workers. See the notes to Figure 1. Manning and Swaffield (2008) find similar results using British longitudinal and cross-section data.



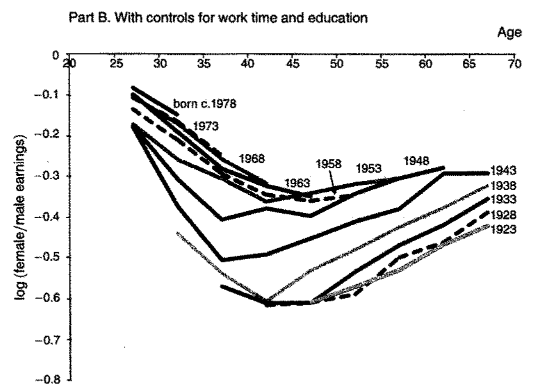


Figure 1. Relative Earnings of (Full-Time, Full-Year) College Graduate Men and Women for Synthetic Cohorts: Born 1923 to 1978

Notes: Sample consists of full-time (35+ hours), full-year (40+ weeks), college-graduate (16+ years of schooling), men and women (white, native-born, non-military, 25 to 69 years old), using trimmed annual earnings data (exceeding 1,400 hours × 0.5 × 2009 minimum wage) corrected for income truncation (top-coded values × 1.5). Part B contains controls for education beyond 16 years, log hours, and log weeks. Age is entered in five-year intervals with an interaction with female. In each graph the lines connect the coefficients on the five-year intervals for each birth cohort.

Source: US Census Micro-data 1970, 1980, 1990, 2000, and American Community Survey 2004 to 2006 (for 2005), 2009 to 2011 (for 2010).

Interestingly, in most cases the ratio increases again when individuals are in their forties (for the most recent of the cohorts to be old enough to be in that age bracket). Why it increases is beyond the scope of the present work. It would appear to be less a function of selection since in most cases the women who left would be drawn disproportionately from the lower part of the earnings distribution and those returning would presumably be the same individuals with less accumulated human capital. If anything, the function should increase and then decrease.

The main conclusion from the aggregate earnings gender gaps is *that the difference in earnings by sex greatly increases during the first several decades of working life.* That conclusion will be reaffirmed by the findings of studies of several highly specific occupations for which the training for both men and women is identical. The two degrees are MBA and JD. The data for these occupations, moreover, is longitudinal (or retrospective) thereby containing actual cohorts, not synthetic ones. In addition, the data contains detailed productivity-related characteristics.

B. *By Occupation*

Within versus Between Occupation Differences by Gender.—Another important clue concerning what the last chapter must contain arises from the fact that the majority of the current earnings gap comes from *within* occupation differences in earnings rather than from between occupation differences. What happens within each occupation is far more important than the occupations in which women wind up.

The fact can be demonstrated several ways. One is by observing the coefficient on female in a log earnings regression when a full set of three-digit occupation dummies are added. Table 1 gives the results for four samples from the 2009 to 2011 ACS: two for all education groups and two limited to college (BA) graduates. For each of these samples, one version is for all workers and one is for those working full-time, full-year. All regressions include age as a quartic, race, and year. Measures of time worked (log hours, log weeks) and education levels (above college for the college graduates) are successively added. Occupation dummies (three-digit level) are included in the most complete specification.

Absorbing the effect of all occupations decreases the coefficient on female by no more than one-third. Take the case of college graduates working full-time, full-year ("full-time, BA"). The female coefficient is −0.285 (a ratio of 0.752) with no additional variables. Adding log hours and log weeks reduces the coefficient to −0.230 (0.795). Absorbing all occupations reduces the coefficient on female to −0.163 (0.850), or almost 30 percent of the distance to equality. In the case of all education groups, the inclusion of all occupations decreases the gap by somewhat less. For the full-time, full-year sample that includes the education variables, the gap decreases from −0.247 (0.781) to −0.192 (0.825) or by just 22 percent.

Another way to measure the effect of occupation is to ask what would happen to the aggregate gender gap if one equalized earnings by gender within each occupation or, instead, evened their proportions for each occupation. The answer is that equalizing earnings within each occupation matters far more than equalizing the proportions by each occupation. The precise results of the exercise will depend on the choice of weights.

Table 1—Residual Gender Differences in Earnings and the Role of Occupation

Sample	Variables included	Coefficient on female	Standard error	R^2
Full-time	Basic	−0.248	0.00101	0.112
Full-time	Basic, time	−0.193	0.00100	0.163
Full-time	Basic, time, education	−0.247	0.000905	0.339
Full-time	Basic, time, education, occupation	−0.192	0.00104	0.453
All	Basic	−0.320	0.00105	0.102
All	Basic, time	−0.196	0.000925	0.353
All	Basic, time, education	−0.245	0.000847	0.475
All	Basic, time, education, occupation	−0.191	0.000963	0.563
Full-time, BA	Basic	−0.285	0.00159	0.131
Full-time, BA	Basic, time	−0.230	0.00158	0.177
Full-time, BA	Basic, time, education	−0.233	0.00155	0.216
Full-time, BA	Basic, time, education, occupation	−0.163	0.00158	0.374
All, BA	Basic	−0.384	0.00173	0.119
All, BA	Basic, time	−0.227	0.00151	0.380
All, BA	Basic, time, education	−0.229	0.00148	0.407
All, BA	Basic, time, education, occupation	−0.163	0.00151	0.525

Notes: "Basic" regression is the log of annual earnings regressed on the female dummy, age as a quartic, race, and year. "Time" adds log hours per week and log weeks. "Education" adds dummies for education categories (and those above a BA for the college graduate sample). "Occupation" adds three-digit occupation dummies. "Full-time" is 35 and above hours per week and 40 and above weeks per year. "All" includes workers 25 to 64 years old with positive earnings and positive hours worked during the past year. The "full-time" sample consists of full-time, full-year individuals 25 to 64 years old excluding those in the military using trimmed annual earnings data (exceeding 1,400 hours × 0.5 × 2009 minimum wage). The "BA" sample includes workers with at least a college or university bachelor's degree. The number of observations is 2,603,968 for full-time, 3,291,168 for all, 964,705 for full-time BA or more, and 1,162,638 for all BA or more.

Sources: American Community Survey 2009 to 2011.

Taking the case of gender gaps by occupation for college graduates (full-time, full-year) ~~including age as a quartic, race, year, additional education levels, log hours, and log weeks~~, the aggregate gap is 0.323 log points. Of that difference, 68 percent is due to the within gap and 32 percent to the between gap when the male weights and the female earnings are used. If the opposite is used (the female weights and male earnings) 58 percent is due to the within gap and 42 percent to the between.

The main takeaway is that what is going on within occupations—even when there are 469 of them as in the case of the Census and ACS—is far more important to the gender gap in earnings than is the distribution of men and women by occupations. That is an extremely useful clue to what must be in the last chapter. If earnings gaps within occupations are more important than the distribution of individuals by occupations then looking at specific occupations should provide further evidence on how to equalize earnings by gender. Furthermore, it means that changing the gender mix of occupations will not do the trick.

Gender Differences in Pay for High-Earning Occupations.—To further understand differences by occupations, I estimate log earnings equations using the 2009 to 2011 ACS including various observables, such as a quartic in age, education dummies, race, years, log hours, and log weeks. The regression also includes occupation dummies, a female dummy, and an interaction of occupation and female.

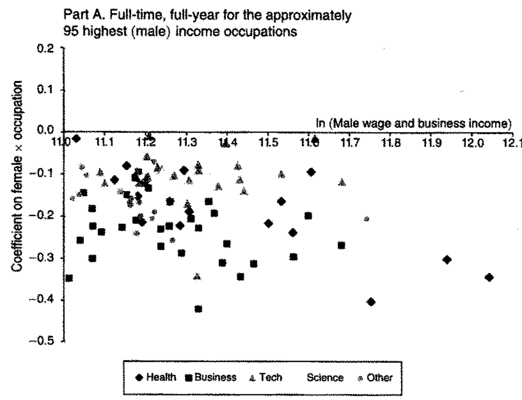


FIGURE 2A. GENDER PAY GAPS BY OCCUPATION: 2009 TO 2011

Notes: Sample consists of full-time, full-year individuals 25 to 64 years old excluding those in the military using trimmed annual earnings data (exceeding 1,400 hours × 0.5 × 2009 minimum wage). Regression contains age in a quartic, race, log hours, log weeks, education levels, census year, all occupations (469), and an interaction with female and occupation. Part A contains all full-time, full-year workers (2,603,968 observations); part B has those who graduated (BA) college (964,705 observations); part C has the group < 45 years old among those included in part A (1,333,013 observations). Each of the symbols in part A is an occupation for which the mean annual income for males exceeds $60K (current $) and is limited to occupations with at least 25 males and at least 25 females. For parts B and C the same occupations are graphed.

Sources: American Community Survey 2009 to 2011.

Three versions of the residual gender difference by occupation have been graphed in Figure 2. Each is for full-time, full-year workers. Part A gives the whole sample; part B is for only college graduates; and part C includes only "young" (less than 45 years old) workers.

The graphs give the coefficients for approximately the top 95 occupations ranked by male (wage and business) income. I have graphed only the top occupations because they are more easily grouped by occupation type.[17] In addition, they include a large fraction of all college graduate workers: 61 percent of all college graduate men and 45 percent of all college graduate women are in the top group depicted in Figure 2 using the full-time, full-year college sample.[18]

[17] Another reason to focus on top earners is that they comprise the bulk of professional service workers (see Briscoe 2007) for whom the framework to be developed here is most relevant.

[18] A smaller fraction of women than men is included because elementary and secondary school teachers are just below the income cutoff. Little would change in the analysis if the income cutoff was lowered. Note that for all workers there is a very weak positive relationship between the (residual) gender pay gap and earnings for all occupations ($\rho = +0.057$) and a weak negative relationship ($\rho = -0.16$) for the college graduate group (in both cases for occupations with more than 25 men and more than 25 women).

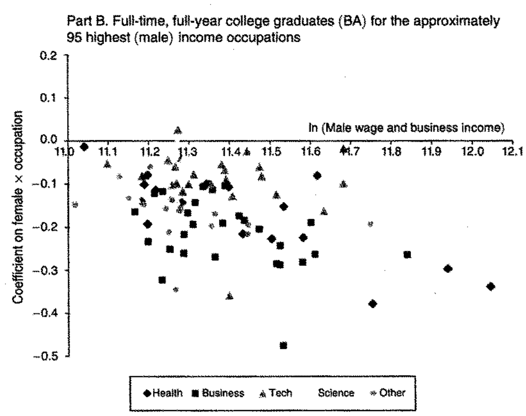


FIGURE 2B

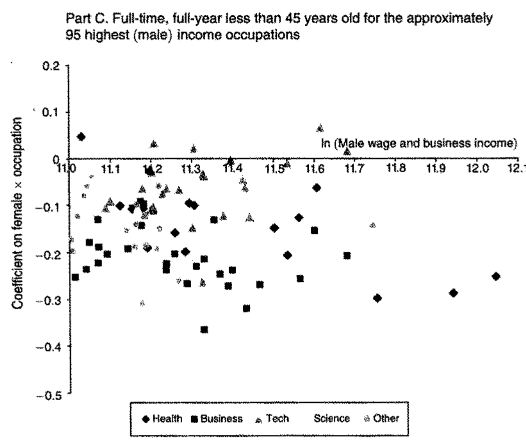


FIGURE 2C

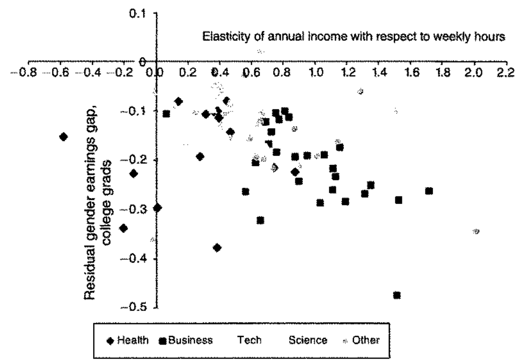


Figure 3. Relationship between the Elasticity of Earnings with Respect to Hours and the Gender Earnings Gap

Notes: The controls are as follows: Age as a quartic, race, ln(hours), ln(weeks), education, ACS years, occupation and occupation × female; 35+ hours, 40+ weeks; 25 to 64 year old college graduates. Only occupations with more than 25 males and more than 25 females are graphed. The vertical axis is the coefficient on occupation × female from Figure 2, part B. The computation of the elasticity of annual income with respect to weekly hours by occupation adds to the regression in Figure 2, part B the interaction of ln(hours) with occupation. The regressions include all three-digit occupations but just the categorized group of about 95 occupations is shown.

Source: American Community Survey 2009 to 2011 and Figure 2, part B.

The findings gleaned from each of the graphs are similar although the levels are a bit different. In almost all cases the coefficient on female for each of the occupations is negative. That should not come as a surprise since it is a reflection of the lower earnings women receive relative to men in almost all occupations. If the individual's past employment history was included, as it will be for specific occupations presented later, the coefficients would be considerably smaller. Presented as in Figure 2, the coefficients give the raw gender gap in pay adjusted for age, education and time worked.

One way to think about the coefficient is that it is the penalty to being a woman relative to a man of equal education and age, given hours and weeks of work for each of the occupations. But why should the penalty differ so greatly by occupation, even for occupations that are high paying?

Each of the occupations has been categorized into one of five sectors: Business, Health, Science, Technology, and a miscellaneous group called "Other." Although the categorization is generally clear (e.g., engineers in Technology; physicians in Health), occupation descriptions and groupings of the occupations in O*Net were used for less obvious cases.[19] The list of occupations by category is given in online Appendix Table A1.

[19] The Department of Labor's Occupational Information Network (O*Net) is the successor to the Dictionary of Occupational Titles (DOT), which was first published by the Department of Labor in 1938 and last updated in 1991.

The clear finding is that the occupations grouped as Business have the largest negative coefficients and that occupations grouped as Technology and Science have the smallest ones. That is, given age and time worked residual differences for Business occupations are large and residual differences in Technology and Science are small. In fact, for the "young" group (less than 45 years old) some Technology and Science occupations have positive coefficients.[20]

For the full-time, full-year sample including log hours, log weeks, and education in years (in addition to the basic set of variables), the residual difference for the Business occupations is −0.240 and the residual difference for the Technology and Science occupations combined is −0.114. For the sample of college graduates, the differences are −0.227 for Business and −0.102 for Science and Technology. Residual differences for the Health and Other groups are heterogeneous.[21]

These residual differences by occupation provide another important clue about what must be in the last chapter for there to be gender equality. If one can isolate the features of occupations that have high and low residual differences by gender one can figure out what factors make for more equal pay. But before I explore the reasons for these differences I must address the possibility that the coefficients for some of the occupations, in particular the "technology" occupations in which there are relatively few women, are largely driven by selection. My answer will be that selection is not the dominant reason for the small penalty to being a woman working in the technology and science fields.

Potential Biases: Technology Occupations.—The fact that individuals in the technology occupations have among the lowest residual gender gaps may be greeted with some skepticism. These are not occupations in which women are a large fraction and the fields of training for many of them are also not those in which women are abundant. Perhaps the finding is due to selection: the best men and the worst women could leave technology occupations after a brief tenure. The men who leave could begin their own businesses and have titles like CEO and the women who leave could become science teachers. These individuals would not show up in the technology occupations. Another issue is whether the low gender gaps in recent data are because of the industries in which these individuals are hired rather than something about the technology occupations.

I use the National Survey of College Graduates, 2003 (NSCG03) to explore if women with technology degrees have different labor force participation rates than those of other college graduate women. The answer is that they do not have lower participation rates given age (entered as a quartic). In fact, women with BAs or higher degrees in technology fields have somewhat greater participation than other women.[22] One reason for their slightly higher participation is that having young children (less than two years old) reduces participation for all college graduate women but there is a lesser impact on those with technology degrees. "Tech" appears to enable women to work part-time or to work more flexibly.

[20] All but one coefficient has a t-statistic exceeding 2.8.

[21] These averages are for the 95 occupations for which the groupings are identified and are weighted by the number of individuals in each of the occupations.

[22] All of these results hold if technology field is defined as a BA field rather than including MA and PhD fields. Women with degrees in technology fields have a 2 percentage point higher participation rate.

Does the smaller gender gap result mainly from the characteristics of the technology occupations or from the features of the industries of the technology employees? The answer is that it results far more from the occupation than from the industry. To examine whether industry is the locus of greater gender equality rather than occupation I create a variable measuring the fraction of the industry's workforce in one of the identified technology occupations.

To see whether the industry of the technology workers matters, a log earnings regression is estimated similar to the previous ones but is limited to individuals in one of the technology occupations. I add a variable measuring the fraction of the industry workforce in technology (see online Appendix Table A2). Some industries, such as "computer systems design," have a large fraction of their workers in technology occupations (around 60 percent) whereas others, such as "motor vehicle manufacturing," are moderate (around 12 percent) and still others are very low. Engineers and information technology workers are hired in almost all industries. The technology industry variable is also interacted with female.

The results are that technology workers in industries with more technology workers earn considerably more than workers in other industries, even with occupation fixed effects. But women do not earn disproportionately more than men within the technology industries. The bottom line is that technology occupations and not technology industries more generally are associated with greater gender equality in earnings.[23]

III. A Personnel Economics Theory of Occupational Pay Differences

A. *Micro-foundations of Compensating Differentials*

Residual differences by occupation in earnings by gender, I will demonstrate, are largely due to the value placed on the hours and job continuity of workers, including the self-employed.[24] Individuals in some occupations work 70 hours a week and receive far more than twice the earnings of those who work 35 hours a week. But in other occupations they do not. Some occupations exhibit linearity with respect to time worked whereas others exhibit nonlinearity (convexity).[25] When earnings are linear with respect to time worked the gender gap is low; when there is nonlinearity the gender gap is higher.

Total hours worked are generally a good metric for time on the job. But often what counts are the particular hours worked. The employee who is around when others are as well may be rewarded more than the employee who leaves at 11 AM for two hours

[23] The results are robust to using the entire sample of occupations and comparing technology workers to all workers and they are also robust to using other measures of technology industries.

[24] The model described here contains similarities to that in Mincer and Polachek (1974) and Polachek (1981) in the concern with choice among occupations that depends on expected time employed. The difference is that the Mincer-Polachek sorting depends on differential skill depreciation by occupation whereas my model rests on differences in the productive efficiency of individuals who work for different amounts of time. A recent version of these notions is in Adda, Dustmann, and Stevens (2011) who analyze data for non-college women in apprenticeship training programs.

[25] Many others have explored the earnings consequences of working lower hours. On physicians, see Sasser (2005) who also uses a compensating differentials framework. Still other researchers have asked whether firms offer an inefficiently small number of low-hour jobs and use high hour jobs to screen. See Gicheva (2013), Landers, Rebitzer, and Taylor (1996), and Rebitzer and Taylor (1995).

but is hard at work for two additional hours in the evening. Even the self-employed may have nonlinear earnings because they cannot fully delegate responsibility.

Gender differences in earnings across occupations and occupational groups substantially concern job flexibility and continuity. By job flexibility I mean a multitude of temporal matters including the number of hours, precise times, predictability and ability to schedule one's own hours.

I will now provide some micro-foundations for the notion that nonlinear pay with respect to hours worked is responsible for the majority of the residual differences observed in earnings by gender. These notions are the micro-foundations underlying the compensating differentials model of pay with respect to the amenity "job-flexibility."

In many workplaces employees meet with clients and accumulate knowledge about them. If an employee is unavailable and communicating the information to another employee is costly, the value of the individual to the firm will decline. Equivalently, employees often gain from interacting with each other in meetings or through random exchanges. If an employee is not around that individual will be excluded from the information conveyed during these interactions and has lower value unless the information can be fully transferred in a low cost manner.

The point is quite simple. Whenever an employee does not have a perfect substitute nonlinearities can arise.[26] When there are perfect substitutes for particular workers and zero transactions costs, there is never a premium in earnings with respect to the number or the timing of hours. If there were perfect substitutes earnings would be linear with respect to hours. But if there are transactions costs that render workers imperfect substitutes for each other, there will be penalties from low hours depending on the value to the firm. A sparse framework will demonstrate these points and develop them further.

B. *Framework to Understand the Nonlinear (Convex) Hours-Wages Relationship*

Assume that each employee, i, invests in training (e.g., MBA, MD) only prior to the job and that the training is valuable in a hierarchy of positions, j. The positions can be separate occupations or they can be different varieties of the same occupation. Let $0 < \lambda \leq 1$ be the fraction of full-time employment worked by the employee or some metric concerning which hours are worked. Output, Q, for an employee is given by

$$\text{(1)} \qquad \mathrm{Q} = \begin{cases} \lambda_i k_j & \textit{if} \ \ \lambda_i > \lambda_j^* \\ \lambda_i k_j \cdot (1 - \delta_j) & \textit{if} \ \ \lambda_i \leq \lambda_j^* \end{cases},$$

where k_j is output per unit time when time exceeds some amount, δ_j is the reduction in output because the employee works less than some amount in occupation j. The

[26] Briscoe (2006, 2007) makes similar points about the ability of employees to "hand off" clients, the role of substitutes and temporal flexibility. Blair-Loy (2009) shows how information systems increased substitutability among discount stockbrokers whereas, ironically, traditional stockbrokers with ostensibly more flexibility in their schedules had greater client demands on their time.

$$Q = \begin{cases} \lambda_i k_j & \text{if } \lambda_i > \lambda_j^* \\ \lambda_i k_j \cdot (1 - \delta_j) & \text{if } \lambda_i \leq \lambda_j^* \end{cases}$$

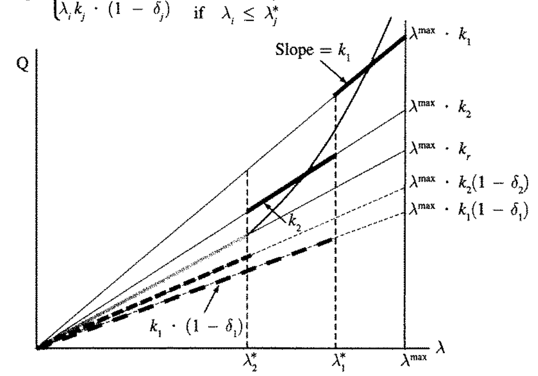


Figure 4. A Theory of Occupational Pay Differences

Notes: Each of the lines gives the relationship between output, Q, in some occupation and the time input, λ, of a worker where $0 < \lambda \leq \lambda^{max}$. When the time input is reduced below some level, λ^*, output decreases discretely for occupations 1 and 2. Occupation r has a linear relationship between time worked and earnings throughout. An individual who works between λ_1^* and λ^{max} will be in occupation 1, an individual between λ_1^* and λ_2^* will work in 2 and all others will work in r, if they remain in the labor force.

setup given by (1) contains a discontinuity in productivity if the worker is absent more than some amount.

Several occupations or positions may exist among which individual i can choose. To begin with, assume two positions exist such that $k_1 > k_2$ and that output is reduced when hours do not exceed some level such that $\delta_1 > \delta_2$. In addition, assume $k_1(1 - \delta_1) < k_2(1 - \delta_2)$ so that one occupation or work setting does not dominate the other. Now add a third position, r, characterized by linearity ($\delta_r = 0$) for which $k_r < k_2$. That position, which can be called the reservation occupation, will dominate the other two when λ is sufficiently low. Also assume that $k_2(1 - \delta_2) < k_r$.

As shown in Figure 4, an employee will work in occupation 1 as long as $\lambda > \lambda_1^*$ and will then shift to occupation 2 at lower hours and finally to the reservation occupation when $\lambda < \lambda_2^*$. The relationship between output and hours, and thus between earnings and hours, is nonlinear (convex). On a per unit time basis the employee receives more in occupation 1 than 2 and more in occupation 2 than in the reservation occupation, r.

In the framework, the position with the highest slope is also the one with the highest penalty with regard to reduced hours. Rather than stay in that position, an employee who wants lower hours will shift to one that has a lower penalty but also a lower slope. If the level of hours that the worker wants is yet lower, then the worker will take the reservation job, which involves complete linearity with respect to hours.

The point of the framework is to emphasize that certain occupations impose heavy penalties on employees who want fewer hours and more flexible employment. The lower remuneration can result in shifts to an entirely different occupation or to a different position within an occupational hierarchy or to being out of the labor force altogether.

Illustrations of the framework will be useful. Lawyers, for example, constitute an occupational group, certainly one professional degree group. But an individual with a law degree can be partner in a large law firm in which there is a premium for working long and continuous hours. The same lawyer could, instead, be employed as general counsel and work fewer and more flexible hours. Finally, the lawyer can work in a small firm that allows short and discontinuous hours at no penalty. These can be thought of as position 1, position 2, and the reservation position in the framework. The remuneration of these lawyers, all of whom have the same formal education, would map out a nonlinear (convex) relationship of total earnings with respect to hours or to the flexibility of hours.[27]

Pharmacy, on the other hand, has nearly linear earnings with respect to time worked. Pharmacists who work more hours earn more, linearly. Those who are in managerial positions in a pharmacy earn more chiefly because they work more hours. Those who work part-time get paid less in a linear fashion.[28]

The explanation just provided for differences across occupations is more a part of personnel economics than human capital theory because the underlying notions are those of compensating differentials. Differences in pay arise because of productivity differences in the workplace, not because of inherent differences in human capital across workers. Some workers want the amenity of flexibility or of lower hours and some firms may find it cheaper to provide.

The framework just outlined can be viewed as the micro-foundations of a compensating differentials model.[29] Individuals place different values on the amenity "temporal flexibility," and firms or sectors face different costs in providing the amenity. The framework gives reasons why there are different costs and how they might change.[30]

IV. Occupational Differences from O*Net Characteristics

Do the notions of the framework have explanatory power regarding the estimated gender gaps for the 95 occupations previously identified and classified by group? To explore the relationship between the residual gender earning gap and occupational features I have used detailed occupation descriptions from O*Net online.[31]

O*Net lists hundreds of separate characteristics grouped in seven categories. The two categories most relevant for the issues at hand are "work context" (57 characteristics) and "work activities" (41 characteristics). Five characteristics seem most

[27] See Bertrand, Goldin, and Katz (2010) and the sections below on MBAs and lawyers.
[28] See Goldin and Katz (2013) and the section below on pharmacists.
[29] The classic article on compensating differentials is Rosen (1986).
[30] Goldin and Katz (2011, 2013) set forth a compensating differentials model with predictions for changes in the gender gap with shifts in the costs of providing the amenity and in preferences for the amenity.
[31] Occupation characteristics in O*Net, the Department of Labor's Occupational Information Network, are comprehensively used by Acemoglu and Autor (2011) to identify tasks.

TABLE 2—O*NET CHARACTERISTICS: MEANS (NORMALIZED) BY OCCUPATIONAL GROUP

O*Net characteristics	Technology and science	Business	Health	Law
1. Time pressure	−0.488	0.255	0.107	1.51
2. Contact with others	−0.844	0.171	0.671	0.483
3. Establishing and maintaining interpersonal relationships	−0.611	0.548	0.276	0.781
4. Structured vs. unstructured work	−0.517	0.313	0.394	1.22
5. Freedom to make decisions	−0.463	−0.00533	0.974	0.764
Number of occupations	31	28	16	1

Notes: The occupations are those in Figure 2, part A. When there is more than one O*Net occupation for an ACS occupation, the characteristic is weighted by the number of workers in each of the O*Net occupations. Each of the O*Net characteristics has been normalized to have a mean of 0 and a standard deviation of 1. The work setting characteristics and questions most relevant to the issues raised here are:

1. Time pressure: *How often does this job require the worker to meet strict deadlines?* Lower pressure means worker does not have to be around at particular times.
2. Contact with others: *How much does this job require the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it?* Less contact means greater flexibility.
3. Establishing and maintaining interpersonal relationships: *Developing constructive and cooperative working relationships with others, and maintaining them over time.* The more working relationships, the more workers and clients the employee must be around.
4. Structured versus unstructured work: *To what extent is this job structured for the worker, rather than allowing the worker to determine tasks, priorities, and goals?* If the job is highly structured to the worker, there would be a lower chance that the worker would have close substitutes.
5. Freedom to make decisions: *How much decision making freedom, without supervision, does the job offer.* Generally means that the worker determines what each client should receive, rather than being given a specific project, and thus workers are poorer substitutes for each other the greater are these freedoms.

Source: O*Net Online, http://www.onetonline.org/

relevant to features of the model and are listed in the notes to Table 2.[32] These characteristics reflect time pressure, the need for workers to be around at particular times, the flexibility of the occupation with regard to scheduling, the groups and workers the employee must regularly keep in touch with, and the degree to which the worker has close substitutes.

Each of the O*Net characteristics has been normalized to have a mean of zero and a standard deviation of one. I group the technology and science occupations together and compare the values of the five characteristics with those for occupations in business, health, and law, the largest and also the highest paying of the "other" occupations.

Because there are about twice as many O*Net occupations than Census occupations, the first task was to match occupations across the two sources. In most cases the difference was simply that O*Net occupations are cross-referenced by industry.

[32] A multitude of characteristics regarding abilities, knowledge, skills, and work values exist, although none seemed to relate to the concepts of the model. A few potentially relevant job features had ambiguities. For example, "work with work group or team" could refer to teams of substitutes (independent workers) or teams of complements (interdependent workers). Similarly, "face-to-face discussions" had a team component that was ambiguous.

The O*Net characteristic levels were then weighted by the relative number of individuals in the O*Net occupations to get the characteristic values for the Census occupations, for which the residual gender gaps had been computed.

As can be seen in Table 2, technology and science occupations score far below the others on each of the five measures and in some cases the differences are almost one standard deviation lower. That is to say, in comparison with business occupations those in technology and science have far greater time flexibility, fewer client and worker contacts, fewer working relationships with others, more independence in determining tasks, and more specific projects with less discretion over them. Each of these characteristics should produce a more linear relationship between hours and earnings and the greater linearity should produce a lower residual difference in earnings by sex.

The characteristics help differentiate the business from the technology and science occupations rather well. They do not always capture differences between the health professions and others. For one, they do not capture the time demands among the self-employed and many in the higher paid health occupations (e.g., dentist, podiatrist, physician, and veterinarian) have substantial rates of ownership. But they do pick up the fact that most health professionals have considerable contact with clients, have enormous discretion, and make decisions affecting the lives of others.[33] Within the "other" category, lawyers are clearly at the high end of the characteristics with considerable contact, time pressure, structure, and discretion.

The scatter plot of the simple mean of the O*Net characteristics for each of the 95 high-income occupations against the mean (adjusted) gender earning gap for each occupation among college graduates (full-time, year-round workers) is given in Figure 5. The relationship is clearly negative with a correlation coefficient of -0.463. A higher value for the characteristics is associated with a lower ratio of (adjusted) female to male earnings (a larger negative value for the log of the gender gap). In addition, the characteristics also pick up some of the within group variance. The relationship is strongest for time pressure, contact with others, and freedom to make decisions, but is also reasonable for establishing and maintaining interpersonal relationships and structured versus unstructured work.

V. Evidence on Nonlinear Pay and the Gender Gap in Earnings

I have thus far established that the gender gap in pay is small at the start of employment but greatly increases with age (even correcting for hours and weeks in a national sample) and that it significantly differs by occupation. I have also shown using the O*Net data that characteristics of work settings are associated with the (adjusted) gender gap in pay such that work environments that require more interactions or have more time pressure, for example, are those with larger gender earning gaps.

Another hint at what must be in the last chapter can be gleaned by adding a (log hours $\times$ occupation) interaction to the regression containing the occupation

[33] The flexibility in some of the health fields is not captured well in the aggregate O*Net characteristics. An important outlier here is pharmacy, which I will discuss in detail. But the regression in Figure 5 is almost no different if the health occupations are excluded.

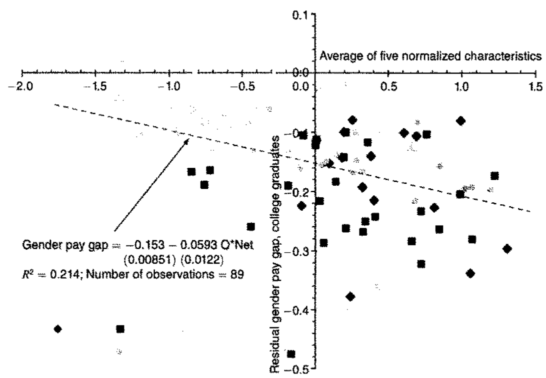


FIGURE 5: O*NET CHARACTERISTICS AND THE RESIDUAL COLLEGE GENDER EARNINGS GAP BY OCCUPATION

Notes: The gender pay gap for college graduate is from Figure 2, part B; the O*Net characteristics are described in Table 2. Only occupations with more than 25 male and more than 25 female observations for the college, full-time sample are included in the figure. Standard errors are in parentheses under coefficients.

Source: See Figure 2.

and log hours main effects. The interaction of log hours and occupation allows the relationship between hours and earnings to differ for each occupation. The computed elasticity of annual income with respect to weekly hours for each occupation is graphed in Figure 3 against the residual gender pay gap for college graduates from Figure 2, part B.[34] There is a clear negative association between the residual gender earnings gap and the elasticity of annual earnings with respect to weekly hours. Occupations with higher elasticities have more negative log earnings gender gaps.

The largest elasticities are for business occupations and the smallest are for technology, science and health occupations. In fact, almost half of the business occupations have a computed elasticity that exceeds one, as does law. The business occupation with the lowest elasticity is that of financial examiner, an occupation often found in the federal and state government settings. Only one of the science and technology occupations has an elasticity of earnings with respect to hours that exceeds one and it is that of actuary.

As I will later demonstrate using data on occupations in business and law, the impact of hours on the gender gap is large and goes far to explain much of the gender

[34]The computed elasticities will be biased downward in part because of measurement error with regard to weekly hours.

earnings gap.[35] Individuals who work long hours in these occupations receive a disproportionate increase in earnings. That is, the elasticity of earnings with respect to hours worked is greater than one.

In previous work, Katz and I (2008b) demonstrated that among Harvard College graduates, the penalty to time out of the labor market differs greatly by occupation. Among those who received their BAs around 1990, a 10 percent hiatus in employment time 15 years after the BA, thus amounting to an 18-month break, was associated with a decrease in earnings of 41 percent for those with an MBA, 29 percent for those with a JD or a PhD, and 15 percent for those with an MD.[36] In addition, the reduction in earnings from time off for MDs was linear in lost experience but was discrete (nonlinear) for MBAs. Any time off for MBAs is heavily penalized. We also found that MDs and PhDs took the shortest non-work spells after a birth and MBAs took the longest. That is, those with the greatest penalty to time out also took the most time out, largely because their jobs did not enable shorter or more flexible schedules.

In this section I expand on these findings and explore the widening gender gap in pay with age and differences in the gender gap by occupation using data sets specific to occupations and degrees. I will demonstrate that some occupations have high penalties for even small amounts of time out of the labor force and have nonlinear earnings with respect to hours worked. Other occupations, however, have small penalties for time out and almost linear earnings with respect to hours worked. In the first group of occupations are individuals who have earned an MBA or a JD. In the second group—the occupations with lower penalties for time out and the more linear ones—is one in the health sector (pharmacy).

The data sets I use are for fairly uniform groups of men and women who have received the same advanced degree or work in the same occupation. The information on job experience and time worked is highly detailed. The gender gap in annual earnings for the JDs and MBAs, although large by year 15, is almost entirely explained by various factors, such as hours worked, time out of the labor force, and years spent in part-time employment. Small differences in time away or in hours translate into large differences in pay. Nonlinearities in pay with respect to time worked can be seen. For the pharmacists, however, hours worked is also of importance in explaining gender differences in pay but earnings are fairly linear in time worked and time out of the labor force is of less importance to contemporaneous pay. In fact, because part-time work is prevalent in pharmacy, women do not take off much time.

A. *Business (MBA): Nonlinear Occupations*

At the start of their careers, earnings by gender are almost identical among MBAs graduating from the University of Chicago Booth School from 1990 to 2006.[37] But

[35] Cha and Weeden (2013) explore the role of "overwork" and the rising premium to it from 1979 to 2009 in slowing the narrowing of the gender gap in earnings.

[36] Goldin and Katz (2008b, table 2).

[37] These data come from a survey of about 2,500 University of Chicago Booth School MBA graduates from 1990 to 2006 matched with administrative school data. The survey asked retrospective questions yielding more than 18,000 person-years on earnings, hours and other employment information, and details on marriage and family. See Bertrand, Goldin, and Katz (2010) for details on the data.

after five years, a 30 log point difference in annual earnings develops and at 10 to 16 years after the MBA, the gender gap in earnings grows to 60 log points (that is, women earn 55 percent what men do). Three factors explain 84 percent of the gap. Training prior to MBA receipt, (e.g., finance courses, GPA) accounts for 24 percent. Career interruptions and job experience account for 30 percent, and differences in weekly hours are the remaining 30 percent. Importantly, about two-thirds of the total penalty from job interruptions is due to taking any time out.

At 10 to 16 years from MBA receipt, 23 percent of University of Chicago Booth School MBA women who are in the labor force work part-time and, interestingly, more than half of those working part-time employ themselves. Around 17 percent are not currently employed and 60 percent work full-time (51 percent do of those with children). Cumulative time not working is about one year for all women 10 to 16 years after the MBA.

Not surprisingly, children are the main contributors to women's labor supply changes. Women with children work 24 percent fewer hours per week than men or than women without children. The impact of children on female labor supply differs strongly by spousal income. MBA moms with high-earning spouses have labor force rates that are 18.5 percentage points lower than those with lesser-earnings spouses.[38] They work 19 percent fewer hours per week (when working) than those with spouses below the high-income level. The impact of higher income husbands may be a pure income effect but it more likely results from a combination of an income and a substitution effect in which the family requires some parental home time and the high-flyer husband offers little.[39]

Another important result is that the impact of a birth on labor supply grows over time in an individual, fixed-effects estimation. A year after a first birth, women's hours, conditional on working, are reduced by 17 percent and their participation by 13 percentage points. But three to four years later, hours decline by 24 percent and participation by 18 percentage points. Some MBA moms try to stay in the fast lane but ultimately find it is unworkable. The increased impact years after the first birth, moreover, is not due to the effect of additional births.

Part-time work in the corporate sector is uncommon and part-timers are often self-employed (more than half are at 10 to 16 years out). Differences in career interruptions and hours worked by sex are not large, but the corporate and financial sectors impose heavy penalties on deviation from the norm. Some female MBAs with children, especially those with high earning husbands, find the trade-offs too steep and leave or engage in self-employment.

In sum, the appeal of an MBA for women is large—incomes are substantial even if they are far lower than those of their male peers. But some women with children find the inflexibility of the work insurmountable.

[38] Annual earnings exceeding \$200K, in US\$2006, are used for the high-earning spouses. About 22 percent of MBA moms are not in the labor force at 10 to 16 years out.

[39] MBA mothers with high-income spouses, it should be noted, are not negatively selected on initial earnings, hours, and MBA performance. If anything, they are positively selected.

TABLE 3—EARNINGS EQUATIONS FOR JDS: UNIVERSITY OF MICHIGAN LAW SCHOOL ALUMNI SURVEY, LONGITUDINAL SAMPLE

	Dependent variable: log (annual earnings)						log (hourly fee)	
	Year 5			Year 15			Year 15	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	−0.100	−0.0375	−0.0158	−0.549	−0.215	−0.130	−0.00345	0.0302
	(0.0262)	(0.0240)	(0.0228)	(0.0498)	(0.0456)	(0.0455)	(0.0366)	(0.0368)
log(hours per week)		0.757	0.563		1.34	1.162	0.442	0.312
		(0.0497)	(0.0521)		(0.0758)	(0.0814)	(0.0541)	(0.0589)
log(weeks per year)		0.522	0.331		0.846	0.711		
		(0.0771)	(0.0752)		(0.123)	(0.120)		
Years in current job			0.0423			0.0251		0.00886
			(0.00615)			(0.00394)		(0.00280)
Years not employed by year t			−0.379			−0.0406		−0.0683
			(0.0545)			(0.0274)		(0.0253)
Years part-time by year t			−0.244			−0.0533		−0.0263
			(0.0339)			(0.0115)		(0.00854)
Time off, BA to law school			−0.0283			−0.0649		−0.0257
			(0.00800)			(0.0145)		(0.0107)
Dummy variables								
Law school performance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Missing job experience	No	No	Yes	No	No	Yes	No	Yes
Missing weeks per year	No	Yes	Yes	No	Yes	Yes	No	No
Constant	11.5	6.35	8.00	12.2	3.70	4.78	3.94	4.41
	(0.0161)	(0.329)	(0.340)	(0.0296)	(0.487)	(0.504)	(0.213)	(0.231)
Observations	1,449	1,449	1,448	1,299	1,299	1,298	695	694
R^2	0.0747	0.245	0.332	0.129	0.359	0.408	0.238	0.287

Notes: Regression sample includes individuals working > 9 hours per week in the given year. Law school performance includes law school GPA at graduation and whether on law review. Sample for columns 7 and 8 is restricted to those working in law firms who reported an hourly fee. Weights are the inverse of the predicted values from a probit regression on whether the survey was returned using a set of predetermined variables such as law school GPA. Standard errors are in parentheses.

Source: University of Michigan Law School Alumni Survey Research Dataset, Longitudinal Sample for individuals graduating from 1982 to 1991 who returned both the 5-year and 15-year surveys.

B. *Law (JD): Nonlinear Occupations*

The gender gap in earnings between male and female JDs, graduating from the University of Michigan Law School from 1982 to 1991, is nil at the start of employment. The gap is small and insignificant at year 5, after controlling for hours, weeks and time off, as can be seen in Table 3, columns 1 to 3.[40] But as in the case of the MBAs the gap balloons to around 55 log points by year 15 in a longitudinal sample

[40] The University of Michigan Alumni Survey Research Dataset is used, which includes alumni surveys from 1967 through 2006 for persons graduating from 1952 to 2001 together with administrative data on each alumnus. The surveys were sent to classes 5, 15, 25, 35, and 45 years after receiving their JD. Because response rates for the cross-section data are high (in the 60 percent range), surveys were later linked, where possible, to create a longitudinal dataset. The information used here is from the longitudinal data linking individuals from graduation to years 5 and 15. See Wood, Corcoran, and Courant (1993) for similar work using a much earlier form of the cross-section data and Noonan, Corcoran, and Courant (2005) for work that uses the more recent longitudinal samples.

(column 4). The remaining gap at year 15 is reduced to around 22 log points when time worked during the year is included and to 13 log points once work absences and job tenure are added (columns 5 and 6).[41]

Of great importance with regard to the issues raised here is that annual earnings are clearly nonlinear (convex) with respect to hours in year 15 but not in year 5. At year 15 the coefficient on log hours in the log earnings regression is significantly greater than one and that finding is robust to various specifications. In the column 5 specification with law school performance and weeks, the coefficient on log hours is 1.34. It drops to 1.162 when job tenure, years out of the labor force, and years in part-time employment are added. But the precise position chosen and thus the slope of earnings with respect to weekly hours are determined by factors (e.g., children) that in turn influence job interruptions and prior part-time work. The framework necessitates a homogeneous group of individuals by training and those are given here by the precise law school, performance in law school, completion of the JD, and time since degree (15 years).

Because those who work in law firms usually report their hourly billing rate or fee (about 90 percent do), columns 7 and 8 also include the relationship between hours and the hourly fee reported. That, too, displays nonlinearity (convexity). The more hours worked, the higher the hourly fee reported.

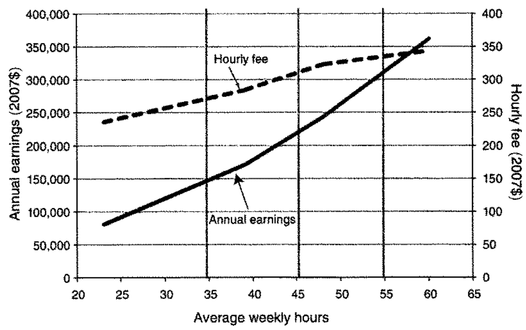
The nonlinearity of annual earnings with respect to hours worked and the relationship between hourly earnings and hours are graphed in Figure 6 together with characteristics of the JDs in each of four hour-intervals used (10–34, 35–44, 45–55, and 55+ hours). The annual earnings graph bears a striking resemblance to the representation of the framework in Figure 4. The nonlinearity of annual earnings with respect to hours worked is clear.

The fraction female at 15 years is 0.288, but the fraction female decreases as hours increase from 0.826 for the 0 to 34 hours group to 0.182 for the 55 hours plus group. The fraction of women who have children at 15 years out also decreases as hours increase from 0.852 for the lowest hours bin to 0.536 for the highest. As hours worked increase so does firm size and fraction partner, while the incidence of solo practice decreases. Of some interest with respect to why nonlinearities in pay arise with respect to hours worked, among JDs who work in a law firm twice the fraction of time by the average lawyer is spent representing a Fortune 500 company in the highest hours bin than in the smallest hours bin. Similarly, the fraction of time representing "rich" people increases substantially (from about 0.025 to 0.09) when a lawyer shifts from working part-time to full-time.

As in the case of MBAs, the reason for the reduction in hours of work at 15 years out is largely due to the arrival of children. And also similar to the MBA case is that the decrease in participation is due to an interaction between children and the income of the spouse. About 16.5 percent of JD women, and 21 percent of those with children of any age, are not in the labor force by year 15.

Spousal income is an important determinant of who stays and who leaves employment at year 15. JD women with children who are married to men in the upper 30 percent of the earnings distribution (more than $200K per year, in US$2007) have

[41] The gender gap is less than 10 log points if making partner by year 15 or remaining in a law firm from year 5 to year 15 is included.



Job-hours feature (mean)	10 to 34 hours	35 to 44 hours	45 to 54 hours	55 hours plus
Fraction of men in bin	0.021	0.165	0.486	0.328
Fraction of women in bin	0.243	0.218	0.359	0.180
Fraction female (0.289)	0.830	0.353	0.229	0.185
With children (0.698)	0.852	0.798	0.617	0.536
Work setting:				
Law firm (0.487)	0.425	0.403	0.514	0.534
Corporate (0.150)	0.0755	0.135	0.184	0.148
Government (0.104)	0.0943	0.160	0.127	0.0456
Non-practicing (0.210)	0.283	0.265	0.155	0.241
If in a law firm:				
Partner (0.690)	0.311	0.490	0.739	0.809
Solo practice (0.0947)	0.233	0.177	0.0646	0.0660
Firm size mean (252)	188	252	249	278
Firm size median (125)	30	50	140	135
Client:				
Fortune 500 (0.248)	0.182	0.228	0.234	0.293
"Rich" (0.0904)	0.0241	0.0900	0.0963	0.0974

Notes: Data given here are for those working > 9 hours a week at year 15. All monetary amounts are in 2007 dollars. The category "other" accounts for the remaining fraction for work-setting. "Firm size," "Fortune 500," and "Rich" are all conditional on working in a law firm. Client variables are the (average of the) fraction of time lawyers stated they worked with such clients.

Source: University of Michigan Law School Alumni Survey Research Dataset, Longitudinal Sample for individuals graduating from 1982 to 1991 who returned both the 5-year and 15-year surveys.

Figure 6. Hours, Earnings, and Characteristics of Occupations Fifteen Years after the JD

lower participation rates than JD women married to lower-income husbands or who do not have children but are married to a high-income husband. Using the high-income cutoff for the husbands of female JDs reveals that 21.6 percent of those with children are not in the labor force at 15 years but that 10.4 percent are not in the labor force for those with lower income husbands.[42] There are, however, almost no differences among those with no children. Almost none of those women, independent of the income of their husbands, is out of the labor force.

Leaving the labor force for women with a JD appears to involve an interaction of spousal income and the presence of children. The reasons would seem the same as offered for the MBAs. Children require a modicum of parental time, high-income husbands provide little of it, and part-time work for JDs is insufficiently remunerative for some to remain employed.

C. *Pharmacy: A Linear Occupation*

The occupation of pharmacist is an excellent example of one that has fairly linear earnings with respect to hours worked and a negligible penalty to time out of the labor force. Managers of pharmacies get paid more because they work more hours. Female pharmacists with children get paid less because they work fewer hours. Pharmacists, particularly women, often work part-time. But there is no part-time penalty.[43]

Pharmacy is a high income occupation—the eighth highest for men and third highest for women—that, in recent decades, has required a specialized six-year combined BS-doctoral degree. I will briefly summarize the findings from a study of the pharmacy profession by Goldin and Katz (2013) that uses, primarily, data from the National Pharmacist Workforce Surveys for 2000, 2004, and 2009.

Most pharmacists today work for non-independent retailers, mainly large chains, or in hospitals—about 75 percent do. But four decades ago around 25 percent were employed in these sectors. Self-ownership and employment by independent pharmacies declined greatly in the interim.

At the same time, women have increased their numbers in the profession. They are now about 55 percent of all active pharmacists and 65 percent of new hires. Women were always a reasonable fraction of pharmacists. Before the large increase in retail chain employment, women were often the part-time assistants of male pharmacists who managed their own pharmacies.

Today the occupation has among the lowest gender earnings gaps among high-earning occupations. The (unadjusted) ratio of earnings for female to male full-time, full-year pharmacists is 0.85 whereas it was 0.60 in 1970. The hours-adjusted ratio is from 0.93 to 0.95.[44]

Several changes in the pharmacy profession have been responsible for the increase of female to male earnings. The first is the decrease in self-ownership and the rise of large corporation and hospital employment. As corporate ownership and hospital employment increased, the portion of earnings that came from self-employment decreased. The ratio of the (time-adjusted) earnings of female to male pharmacists,

[42] As in the case of the MBAs, JD women with high-income spouses who are not in the labor force at 15 years are not negatively selected on the basis of observables and, if anything, are positively selected. The calculation uses the cross-section sample to increase sample size.

[43] Künn-Nelen, De Grip, and Fouarge (2013) demonstrate greater firm productivity in pharmacy with an increase in part-time work using data from the Netherlands.

[44] Goldin and Katz (2013), table 1 for the time trends and table 3, column 2 and 3 for the adjusted ratios.

in consequence, increased as the rents from ownership decreased and because men were disproportionately the owners.

AQ 1 The second change involves decreased the costs to flexible employment in pharmacy. Pharmacists have become better substitutes for each other with the increased standardization of procedures and drugs. The extensive use of computer systems that track clients across pharmacies, insurance companies, and physicians mean that any licensed pharmacist knows a client's needs as well as any other. If a pharmacist is assisting a customer and takes a break, another can seamlessly step in. In consequence, there is little change in productivity for short-hour workers and for those with labor force breaks. Other factors mentioned in the O*Net section are also of importance. For example, there is less need for interdependent teams in pharmacy and for extensive contact with other employees.[45]

Female pharmacists have fairly high labor force participation rates and only a small fraction have substantial interruptions from employment. Rather than taking off time, female pharmacists with children go on part-time schedules. In fact, more than 40 percent of female pharmacists with children work part-time from the time they are in their early thirties to about 50 years old. Male pharmacists work around 45 hours a week, about nine hours more than the average female pharmacist.

The position of pharmacist became among the most egalitarian of all professions today. The facts in Goldin and Katz (2013) are consistent with the labor market effects of changes in technology and in the structure of the industry. They are less consistent with change stemming from an increase in the demand for family-friendly workplace amenities. In addition, the changes do not appear to have resulted from legislation or anti-discrimination policy or licensing requirements or regulations specific to the pharmacy profession. Rather, a host of structural changes outside the realm of the labor market (e.g., increased economies of scale in pharmacies, standardization of drugs, computer use, linked records through insurers) increased the demand for pharmacists and reorganized work in ways that have made pharmacy a more family-friendly and female-welcoming profession.

VI. What the Last Chapter Must Contain

The reasoning of this essay is as follows. A gender gap in earnings exists today that greatly expands with age, to some point, and differs significantly by occupation. The gap is much lower than it had once been and the decline has been largely due to an increase in the productive human capital of women relative to men. Education at all levels increased for women relative to men and the fields that women pursue in college and beyond shifted to the more remunerative and career-oriented ones. Job experience of women also expanded with increased labor force participation. The portion of the difference in earnings by gender that was once due to differences in productive characteristics has largely been eliminated.

What, then, is the cause of the remaining pay gap? Quite simply the gap exists because hours of work in many occupations are worth more when given at particular moments and when the hours are more continuous. That is, in many occupations

[45] The O*Net characteristic "establishing and maintaining interpersonal relationships" for pharmacists is among the lowest in the health group.

earnings have a nonlinear relationship with respect to hours. A flexible schedule often comes at a high price, particularly in the corporate, financial, and legal worlds.

A compensating differentials model explains wage differences by the costs of flexibility. The framework developed here shows why there are higher or lower costs of time flexibility and the underlying causes of nonlinearity of earnings with respect to time worked. Much has to do with the presence of good substitutes for individual workers when there are sufficiently low transactions costs of relaying information. Evidence from O*Net on occupational characteristics demonstrates that certain features of occupations that create time demands and reduce the degree of substitution across workers are associated with larger gender earnings gaps.

Data for MBAs and JDs shows large increases in gender pay gaps with time since graduation and also reveals the relationship between the increasing gender pay gap and the desire for time flexibility due to the arrival of children. Lower hours mean lower earnings in a nonlinear (convex) fashion. Lower potential earnings, particularly among those with higher-earning spouses, often means lower labor force participation. Pharmacists, on the other hand, have pay that is more linear with respect to hours of work. Female pharmacists with children often work part-time and remain in the labor force rather than exiting.

What must be in this chapter for it to be the last? The last chapter must be concerned with how worker time is allocated, used and remunerated and it must involve a reduction in the dependence of remuneration on particular segments of time. It must involve greater independence and autonomy for certain types of workers and the ability of workers to substitute seamlessly for each other. Flexibility at work has become a prized benefit but flexibility is of less value if it comes at a high price in terms of earnings. The various types of temporal flexibility require changes in the structure of work so that their cost is reduced.

There are many occupations and sectors that have moved in the direction of less costly flexibility. Firms in many sectors, including healthcare, retail sales, banking, brokerage, and real estate, are making their employees better substitutes for each other and trying to convince their clients of that.[46] When clients perceive there is a greater degree of substitutability among workers, a more linear payment schedule emerges.

Pharmacists are now better substitutes for each other than they once were and their earnings are fairly linear with regard to time worked. Larger scale in healthcare has enabled teamwork that has freed physicians from irregular and long hours. Most small veterinary practices no longer have weekend, night, and emergency hours and, instead, have clients use the increasing number of large regional veterinary hospitals. Self-employment has declined in a large number of professions the past several decades including dentists, lawyers, optometrists, pharmacists, physicians, and veterinarians. The decline has produced a reduction in the premium to long and unpredictable hours.

Some changes have occurred organically, often due to economies of scale (as in the cases of physicians, pharmacists and veterinarians), some changes have been prompted by employee pressure (as in the case of various physician specialties such as pediatricians), and other changes have occurred because firms want to reduce

[46] See, for example, Briscoe (2006, 2007) on physicians and Blair-Loy (2009) on brokerage firms.

labor costs. Not all positions can be changed. There will always be 24/7 positions with on-call, all-the-time employees and managers, including many CEOs, trial lawyers, merger-and-acquisition bankers, surgeons, and the US Secretary of State. But, that said, the list of positions that can be changed is considerable.

What the last chapter must contain for gender equality is not a zero sum game in which women gain and men lose. This matter is not just a woman's issue. Many workers will benefit from greater flexibility, although those who do not value the amenity will likely lose from its lower price. The rapidly growing sectors of the economy and newer industries and occupations, such as those in health and information technologies, appear to be moving in the direction of more flexibility and greater linearity of earnings with respect to time worked. The last chapter needs other sectors to follow their lead.

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PLEASE ANSWER ALL AUTHOR QUERIES (numbered with "AQ" in the margin of the page). Please disregard all Editor Queries (numbered with "EQ" in the margins). They are reminders for the editorial staff.

AQ#	Question	Response
1.	Is something missing/extra in the sentence "The second change involves..."?	

Senator KAINE. Thank you.

Ms. DUCHON. Well, as the mom of a young girl, I would like to say that knowing that those opportunities are available from the start and having young people grow up in good-quality educational environments where they see women taking on those roles and they can imagine that for themselves, just the sheer modeling of that both from a parental perspective as well as an education perspective I think is truly important.

Senator KAINE. Ms. Schaeffer?

Ms. SCHAEFFER. Thank you for that question, because I actually think this is a very interesting one. I tend to be careful that we do not characterize sort of our schools as somehow providing one thing for the male students today that is different from the girls. I have two girls and a son, and I know that they are all being treated the same way.

That being said, I know that for many, many years now, we have been pouring money into the STEM field and trying to encourage more women to go into it. And recently I took a look at MIT and what the female students and the male students were majoring in. And I thought, of any school out there, MIT, we have some of the brightest science and math minds. And it was very interesting to see the way men and women are sort of falling. Men were still overrepresented in areas like petroleum engineering and computer science, while women were overrepresented in the social sciences and biology and architecture.

So I think that there is a point at which we have to accept that men and women are different, they are going to make different choices, and that might be okay. And we have to maybe also ask ourselves, is there a reason that we are not looking at sort of the underrepresentation of men, for instance, in nursing or in English or in psychology? Should we be concerned on that side of things?

And one last thing is just that we have a lot of women now who are in these leadership positions, and I agree it is not as high as with men, but we have women who have come up the ranks, like a Virginia Rometty at IBM. We know that 75 percent of veterinary students are now women. These are numbers that we should not ignore because I think it is sometimes painted as sort of black or white, women go into the humanities, men go into the sciences, that is the problem. So I think it is a little bit—a little grayer.

Senator KAINE. Thank you, Madam Chairwoman.

Chairman MURRAY. Thank you.

We do have a vote called, and I am going to give Senator King and Senator Baldwin 5 minutes each, and we should be able to wrap up before we get over there. Senator King?

Senator KING. Thank you. Before getting into some questions, Ms. Boushey, could you supply that Goldin study to us? That sounds very interesting, the one that you mentioned. I would appreciate that.

Senator KING. As I have traveled abroad, and did so particularly as Governor, going on trade missions, it was one of my conclusions that one of the parts of the secret sauce of America's success is the openness of our business community to women. You go to other countries, you go to business meetings, chamber of commerce meetings, zero women. And you realize that these societies are missing a huge part of the talent. That is what America is all about, is giving this opportunity.

The challenge, it seems to me—there are two challenges. One is how do we harness this enormous power that half of our population brings to the table, at the same time accommodating the special needs, particularly around motherhood.

Now, part of it is the tradition that it is moms who are responsible and not dads. I mean, that is something we ought to be thinking about and talking about. You know, why is it assumed that the woman has to deal with the child care and the sick child and all of those kinds of things?

I guess the question is: What are the factors, the flexibility policies that are most important for us to adopt? And the secondary question is: Does this have to be by Federal law or will this take place in the marketplace as companies say, hey, we want this talent, we have, therefore--a company I visited in Maine a few weeks ago has an in-house daycare center. Why? Because they want to have good people working there, and that is one of the things that they have had to do.

So two questions. What are the important policies? And, two, do they have to be mandated by Federal law or can the marketplace take care of it? And if so, how long will that take? Ms. Boushey, do you want to take a crack at that?

Ms. BOUSHEY. Yes, thank you. That is an excellent question. I have a bunch of answers for you.

So, first, you know, thinking in terms of workplace flexibility, there are a lot of things that we could do. San Francisco and Vermont have both just implemented new policies that give workers the right to request a flexible schedule. It is a soft-touch law, meaning that it is not a mandate, but it says that a worker can go to their boss and say, "Hey, I need this kind of flexibility," and the employer is obligated to respond to that request and give a good reason why they want to deny it.

We have seen this to be enormously successful in the United Kingdom and in New Zealand and other countries, and it is something that might be able to be effective here, and I am very excited that these two places are doing this so that people like me can study it. So I encourage you to look at that, and that is something that is happening at the State and local level.

Second, there is an experimentation in States right now with family leave insurance. California, New Jersey, and Rhode Island—

Senator KING. You mentioned that. Who pays—when you say "insurance," it implies somebody is paying a premium.

Ms. BOUSHEY. Yes. So this is employee paid for, so it is a new small tax on employees.

Senator KING. Like unemployment insurance.

Ms. BOUSHEY. Like unemployment insurance, or in those--there are five States that have longstanding temporary disability insurance programs that provide up to a year in some places, benefits when you get sick, and those three States have added family leave onto that benefit. And it is paid for entirely by employees.

The FAMILY Act, the family and medical leave insurance bill that Senator Gillibrand has introduced, would create a Federal system for that. The big challenge of doing that one at the State level is beyond these five States that have these longstanding systems, the startup costs are very high. And so the Federal Government could play a role there in helping with startup costs.

Senator KING. I want to get Ms. Schaeffer into this discussion. You had trenchant comments about the Paycheck Fairness Act. Are there other policies that could be adopted, flexibility policies, daycare flexibility, hours, those kinds of things that you think are important, and your thoughts on whether these should be Federal law, marketplace? And the problem with—I suspect you are going to say marketplace, but then we get to Ms. Duchon's comment that it will take 43 years to get there.

Ms. SCHAEFFER. Well, you know, I am not sure if it will take 43 years, and the reason is because I think women are beginning to outpace men. We know that women are now earning 57 percent of bachelor's degrees, 59 percent of master's degrees, the majority of Ph.D.s. They are overrepresented in law schools as well as medical schools. So the demand is—the workplace is really changing. The demand for flexibility, not for just women but for men as well, is changing. And, you know, as one of my colleagues says, I think that toothpaste is out of the tube, right? People have sort of gotten a taste of what flexibility means and what it looks like, and they like it. And employers want to respond to that, so I will give you two examples.

One is very small, and that is the Independent Women's Forum. We are a very small organization. We used to have very fancy office space. We are now a virtual office. And one of the reasons for that is that we have a lot of moms, and it simply did not make sense for them to waste an hour getting into the office and parking and getting settled at a desk and wasting another hour at the end of the day when we realized that we had a team of very hard workers who could do their job from home. Now, it works for us. It might not work for the next think tank, but it does work for us.

Another example, though, is Walmart, a much larger example. They started in their legal department with a flexible work arrangement. What they found is that people really liked it. They were more productive workers, and to the extent that they could integrate that into other departments, they were trying. Obviously, you always have to have somebody at the checkout line, but that does not mean that other parts—there are other ways in which you could have job sharing and flexible work arrangements.

So I think that the marketplace is going to respond to both women's and men's needs for flexibility.

Senator KING. Thank you very much. We are running close—

Chairman MURRAY. Yes, I want to make sure that Senator Baldwin has a chance.

Senator KING. I will follow up with some questions.

Chairman MURRAY. And we do not want to miss the vote, so, Senator Baldwin?

Senator BALDWIN. Thank you. I really appreciate your holding this hearing.

There are a number of non-compensation barriers to economic opportunity for women that have come up. One that I do not believe has come up but yet is a major barrier to economic empowerment of women is the unacceptable reality of workplace discrimination, including harassment and sexual harassment specifically. And I think it really continues to limit the opportunity to succeed at the workplace.

According to the Equal Employment Opportunity Commission, annually there are average claims of about 10,000 cases of sexual harassment, yet according to numerous studies, this is supposed to be drastically underreported, so in reality there is a belief that it occurs in much higher levels.

Last summer the U.S. Supreme Court in my opinion worsened an already difficult situation by stripping away some crucial protections for people who are harassed in the workplace in a case called Vance v. Ball State University. What happened in Vance is the Court made it harder to hold employers accountable when harassment is being perpetrated by a supervisor who does not have specifically hiring and firing authority. So if you have a supervisor who is directing all of your daily activities, choosing what hours you have to report, whether or not you get overtime or can get absences, you know, all sorts of conditions of your work, but that person expressly does not have hiring and firing authority, there is no employer accountability. And I fear what that is going to do in terms of people's recourses and weakening of Federal workplace protections.

So with that quick introduction, Dr. Boushey, I would like to ask you how does workplace harassment limit the economic opportunities of women and their families. I know that is a very broad question, but how will this case, the weakening of these workplace protections make it more difficult for women to succeed economically?

Ms. BOUSHEY. Well, we live in a country where employees, you know, most of the rights that they get they get from the Federal Government. Very few workers—7 percent of private sector workers these days—are represented by a union, so that means that these laws are incredibly important in protecting workers. And I think AnnMarie's story for me is so compelling in some ways because she was able to talk to her colleagues and her employer about what was going on. But for so many people, they cannot do that, and they fear being laid off or they fear being fired. Most people—you know, so many Americans work in States—you know, right-to-work States, and you do not have a lot of recourse.

So I actually think this is fundamentally and profoundly important, and I think there are a variety of ways of getting at it. I think now you have talked about some legislation, the Fair Employment Protection Act, which I think would be very important. There are also some new policies going on at the State level and something that just happened a couple of days ago. Massachusetts became the fourth State to pass a Domestic Workers' Bill of Rights, which gives domestic workers, in-home workers, rights that they do not have under the Fair Labor Standards Act, and one of them, of course, importantly, are issues around harassment, where I think that this could actually play—this could actually be one of the more important areas where we could see this happening.

So I think that understanding the importance of jobs in people's lives and that if you do not have choices and you are stuck, well, then, you are going to put up with it, and that is just not right or fair.

Chairman MURRAY. Thank you very much. I really want to thank our colleagues for participating today, and I especially want to thank our three witnesses for your time today.

As a reminder to our Committee members, additional statements and questions are due in by 6:00 p.m. today. We will submit these to you for your response. And, again, thank you so much.

With that, we will call this hearing to a close. Thank you.

[Whereupon, at 11:28 a.m., the Committee was adjourned.]

Responses to Questions for the Record from Senate Budget Committee hearing on "Expanding Economic Opportunity for Women and Families"

Heather Boushey, Executive Director and Chief Economist, Washington Center for Equitable Growth

From Senator Wyden

Aside from labor laws and protections, some of the programs we tend to think of as "the safety net" vary largely in terms of their coverage of and functionality for women and children. For example, men are far more likely to be eligible for unemployment benefits. And the TANF program—which is far more likely to benefit women—is criticized for its lack of flexibility for cutting off beneficiaries who wish to pursue an education.

To each of the witnesses, what are some ideas you have for reforming our safety net programs to reflect changes in the workforce and better assist families, and specifically working moms, with children?

Women's entry into the labor force is one of the most important transformations to our labor force in recent decades, which has greatly benefited women, their families and the economy.

However, despite the recent changes in our workforce, federal and social policy have not adapted to better assist working families. The foundations of our nation's basic labor standards, such as the Fair Labor Standards Act in 1938 and the Social Security act of 1935,[1] were enacted during a time when most workers had a family member who was a full-time, stay-at-home caregiver.

While we celebrate the strength of these programs and standards, we also need to think about how to update policies for a workforce in which most workers are also family caregivers. American workers typically have little or no control over their work hours and schedules, and few have a right to job protected access to paid leave to care for a family member.[2]

There is a basket of policies that will help achieve the results we need for working mothers, their families, and the economy.

First, tax credits such as the Earned Income Tax Credit, Child Tax Credit, and Child and Dependent Care Tax Credit help increase the financial security of all American families, especially low-income families.[3] The 21st Century Worker Tax Cut Act would further increase the income of working families, letting two-earner families keep more of what they earn and increasing the Earned Income Tax Credit for childless low-wage workers.[4]

Second, in order to work and remain in the labor force, parents need affordable, high-quality child care. Early childhood education is one of the most important investments in our workforce.[5] Federal policy should expand access to early childhood education programs and make them more affordable. Furthermore, additional funding for Head Start would allow more low-income families to utilize this comprehensive early childhood program. In addition, policy should address "child care cliffs" for families receiving child-care assistance. In certain states, a slight increase in parent's earnings can push them over the income threshold for child-care assistance, which can result in a sharp increase in child care expenses.[6]

Finally, all kinds of caregivers need polices to help them balance work and family care so they can remain in the workforce and help grow our economy. Family and medical leave insurance—also known as paid leave—would provide a critical support for workers—men and women alike—allowing them to take temporary leave from work to recover form an illness or care for a loved one. The Family and Medical Insurance Leave Act of 2013, also known as the FAMILY Act, would relieve the financial burden of taking unpaid time off, providing paid leave for nearly every U.S. worker.[7] Paid leave makes it easier for women to work and have higher lifetime earnings, thereby increasing families' financial security.[8] Furthermore, there is evidence that these work-family policies could also help close the wage gap between workers who provide care and those who do not.[9]

Endnotes

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2 Heather Boushey, "The Role of the Government in Work-Family Conflict," *The Future of Children* 21 (2) (2011): 163–190, available at http://futureofchildren.org/publications/journals/article/index.xml?journalid=76&articleid=556.

3 Center on Budget and Policy Priorities, *The Earned Income Tax Credit* (Washington, DC: Center on Budget and Policy Priorities, 2014), http://www.cbpp.org/files/policybasics-eitc.pdf; Center on Budget and Policy Priorities, *Policy Basics: The Child Tax Credit* (Washington, DC: Center on Budget and Policy Priorities, 2014), http://www.cbpp.org/files/policybasics-ctc.pdf; Elaine Maag, "The Tax Policy Briefing Book: Taxation and the Family: How Does the Tax System Subsidize Child Care Expenses?" (Washington, DC: Tax Policy Center, 2013), http://www.taxpolicycenter.org/briefing-book/key-elements/family/child-care-subsidies.cfm.

4 *21st Century Worker Tax Cut Act*, S. 2162, 113 Cong. 2 sess. (2014).

5 James J. Heckman and Dimitriy V. Masterov, "The Productivity Argument for Investing in Young Children," *Review of Agricultural Economics* 29 (2007): 446–93.

6 Melissa Boteach and Shawn Fremstad, "Putting Women at the Center of Policymaking," in *The Shriver Report: A Woman's Nation Pushes Back from the Brink* (Washington, DC: Center for American Progress, 2014), 244–79.

7 National Partnership for Women and Families, "Fact Sheet: The Family and Medical Insurance Leave Act (FAMILY Act)" (Washington, DC: National Partnership for Women & Families, 2014), http://www.nationalpartnership.org/research-library/work-family/paid-leave/family-act-fact-sheet.pdf.

8 Christopher Ruhm and Jackqueline L. Teague, "Parental Leave Policies in Europe and North America," *Gender and the Family Issues in the Workplace*, 1997, 133–56; MetLife Mature Market Institute, *The MetLife Study of Caregiving Costs to Working Caregivers: Double Jeopardy for Baby Boomers Caring for Their Parents* (Westport, CT: MetLife Mature Market Institute, 2011).

9 Jane Waldfogel, "The Family Gap for Young Women in the United States and Britain: Can Maternity Leave Make a Difference?," *Journal of Labor Economics* 16, no. 3 (1998): 505–45.

THE IMPACT OF STUDENT LOAN DEBT ON BORROWERS AND THE ECONOMY

WEDNESDAY, JUNE 4, 2014

UNITED STATES SENATE,
COMMITTEE ON THE BUDGET,
Washington, D.C.

The Committee met, pursuant to notice, at 10:01 a.m., in Room SD–608, Dirksen Senate Office Building, Hon. Patty Murray, Chairman of the Committee, presiding.

Present: Senators Murray, Wyden, Nelson, Stabenow, Whitehouse, Warner, Merkley, Baldwin, Kaine, King, Johnson, and Ayotte.

Staff Present: Evan T. Schatz, Majority Staff Director; and Eric Ueland, Minority Staff Director.

OPENING STATEMENT OF CHAIRMAN MURRAY

Chairman MURRAY. This hearing will now come to order. I want to thank Senator Johnson, who is filling in today for my Ranking Member, Senator Sessions. Welcome to you and to all of our colleagues who are joining us today, as well as a room full. Welcome to all of you on a really important topic today.

We are going to be talking about a challenge that 40 million people around our country face today. And for many Americans who want to further their education and build their skills, taking out student loans has become a college prerequisite. But that debt can have lasting consequences for borrowers and weaken their chances of getting ahead.

Ensuring more Americans get a fair shot is something many of us here in the Senate are very focused on. And a bill that is coming to the floor very soon, which will allow borrowers to refinance their school loans, is an important part of that Fair Shot Agenda.

I will be discussing that legislation a bit more later. But first I want to thank our witnesses who are here with us today who will help shed some light on the challenges that mounting student debt can pose for borrowers and for our economy.

Today we are going to be hearing from Rohit Chopra. He is the student loan ombudsman for the Consumer Financial Protection Bureau.

And I am very pleased to welcome Brittany Jones today. She is a recent graduate and the former president of the Student Virginia Education Association.

We are also going to be hearing from Richard Vedder. He is a Distinguished Professor Emeritus of Economics at Ohio University.

A college degree is a worthwhile investment, and for many it can be a ticket to the middle class. We know that on average, college graduates earn more, and they tend to have lower unemployment rates than their less educated peers.

A highly educated workforce is also good for our country. It strengthens our middle class. It strengthens the workforce we will need to compete in the 21st century global economy.

More and more, jobs of the future will require postsecondary credentials or degrees. And, in fact, in the coming years, as many as two-thirds of all jobs will require at least some college education, according to the Center on Education and Workforce.

But to afford college, many people have to turn to student loans to help finance their education. In just a few moments, you are going to hear from Brittany Jones. She is going to be talking about how taking out student loans made it possible for her to get a college degree. And, Brittany, I look forward to hearing more about your experience, as you have now worked to start a teaching career and at the same time paying down that student loan that got you through college.

Of course, Brittany is not alone. Dealing with overbearing student debt has become a reality for a growing number of Americans. The statistics are staggering. Today the average college graduate will have to pay back around $30,000 in student loans. And a record number of young households owe student debt.

Back in 1989, 16 percent of young households had student debt. By 2010, that figure had more than doubled, according to the Pew Research Center. More young people than ever before are dealing with more student debt than ever before, and that can have lasting consequences.

Americans who took out school loans can find it difficult to save and accumulate wealth. A recent study found that college graduates without student debt had accumulated seven times more wealth than those who are paying back school loans.

Crushing student debt is not just hurting borrowers. There is mounting evidence that student debt is also holding back our economy. Historically, young Americans have been a source of economic activity as they set up their households and start their own careers. But today many are finding it difficult to save even for a downpayment on a home. And the high monthly bills to pay back student loans can disqualify many people from even getting a mortgage.

When first-time homebuyers are not able to get a mortgage, it can adversely affect the housing industry as a whole. That is why groups like the National Association of Realtors and the Homebuilders Association have expressed concern about the overbearing financial weight of student loans.

Student debt can stifle entrepreneurship. Young people who dream of starting up their own businesses are not able to take the risks and the business loans that are usually needed when they launch a startup.

Paying off student loans can prevent young people from saving for retirement or making the kinds of purchases that help further our economic recovery.

Mr. Chopra, I know these economic consequences are what you, and others at the Consumer Financial Protection Bureau, have called the "domino effect," and I am looking forward to hearing more details in your testimony about those negative economic impacts.

To address these challenges, as a starting point, we need to ensure that student loan servicers—those are the companies who handle billing and track borrowers' payments—are treating those borrowers fairly and responsibly.

Unfortunately, there have been alarming reports of student loan servicers mistreating borrowers. Some people have discovered their student loan servicer has not properly processed payments. There have also been complaints that private student lenders have put borrowers into default if a cosigner dies, despite the borrower being current on their loan payments.

And I was very troubled to hear recent reports that Sallie Mae was overcharging military members on their student loans. Sallie Mae now has agreed to pay nearly $100 million in fines after charging military members higher interest rates. And I have asked Secretary Arne Duncan to investigate to make sure other student loan servicing companies are not doing the same.

But we can do more to help borrowers. The Bank on Student Emergency Loan Refinancing Act is a bill from Senator Elizabeth Warren that I have cosponsored, along with several of our Democratic colleagues. That bill will allow borrowers to refinance their Federal student debt. The Congressional Research Service estimates that this bill would let borrowers save $4,000 on average.

Passing that legislation would put more money in borrowers' pockets so they can make ends meet, make downpayments homes, or start new businesses and help grow our economy.

Right now, people can refinance their home loans or their business loans when interest rates drop. This bill will let borrowers with Federal student debt do the same. And this should be a bipartisan issue.

Just last year, for example, Republicans and Democrats came together to pass the Bipartisan Student Loan Certainty Act. That bill allowed new borrowers to take advantage of lower interest rates established by the free market. This refinancing legislation would use those same free market principles to help those with existing student loans.

At a time when higher education is more important than ever to our Nation's long-term competitiveness, a college degree should not drown borrowers in debt.

Now, and in the future, we need to make sure that people who choose to further their education and build their skills are better able to afford college and manage their student debt. It is an economic imperative.

To strengthen our middle class, to strengthen our workforce, and to help spark economic growth, Congress needs to address these challenges.

So I am very delighted to have this hearing today, and before I turn it over to our panel of witnesses, we would like to hear from Senator Johnson.

OPENING STATEMENT OF SENATOR JOHNSON

Senator JOHNSON. Thank you, Madam Chair. I appreciate you holding this hearing. This is, I think, an extremely important issue. I think it is a tragedy that we have enticed our children to incur now about $1.2 trillion in student loan debt collectively.

I had a finance professor in college who, before he would ever talk about cost of capital and all the complex issues with corporate finance, would spend a day just talking about personal finance. He said, "The reason they call a debt instrument a bond is because when you go into debt, you put yourself into bondage. And you want to really avoid that." So I certainly took that to heart.

I, of course, had the advantage of growing up and going to college in the 1970s when college was a whole lot cheaper. I worked full-time, and rather than leaving college with close to $30,000 in debt, I actually left college with $7,000 in the bank. So I wish that were more possible.

I would like to start with a chart that I have prepared, and I have actually been using this in my PowerPoint presentations as I travel around the State of Wisconsin. Just laying out some facts and a little food for thought here.

What this chart shows is that in 1963 the total cost of a 4-year undergraduate degree in a public college was about $929 per year. That is room, board, and tuition. Now, by 1988, the actual cost had risen to $4,678, which was 27 percent higher than had it just grown at the rate of inflation. But you can see as of 2012 the cost of college outstripped the rate of inflation by almost two and a half times. So rather than costing about $7,000, which is what it would have been if it just would have grown by the rate of inflation, one year of college now is about—in 2012, it was $17,474, two and a half times the rate of inflation.

I guess the question I am asking is, "Why?" What is so different about what colleges and universities spend their money on that their costs would outstrip the rate of inflation by 2.5 percent? And, by the way, two of the components, room and board, you know, food and shelter, in the rest of the economy—not necessarily on college campuses. In the rest of the economy, those have actually grown at a lower rate than inflation because we have become so much more productive in those sectors of our economy. Obviously "productivity" is not exactly a word we use in education, which is a real shame.

So, again, just kind of asking the question of, you know, why. All of our good intentions—and let us face it, what we spent in college, around college in terms of student aid, which is about $2 trillion since 1963, was all well intentioned, but it had a very serious negative unintended consequence. In other words, in trying to make college more accessible, did we actually make it less accessible because we have made it so much more unaffordable?

Oh, by the way, just, you know, to add a little more detail to that chart, of the $2 trillion we have spent over that time frame, about $200 billion was spent between 1963 and 1988; $1.8 trillion was spent as college costs really skyrocketed and soared. Again, cause and effect, I will leave that for the reader to judge. And I think Mr. Vedder is going to talk a little bit about that as well.

Madam Chair, you were correct. It is a shame that in 2011, which is the latest figures I have from the College Board, average student loan debt after 4 years of college is $25,000. Of those, 57 percent of the students that actually incurred debt in a private institution it is about $29,900, and 65 percent of private college students incurred debt.

Another interesting statistic is how long it is taking our students to graduate. About half graduate pretty much in the 4-year time period. In other words, they graduate within 52 months, about 4.3 years. But the other half raises the average time to graduate to 6.3 years. Again, just asking the question: Why is that, particularly when you have so many kids leaving high school with college credits in the bag? Have we made college funds available so readily that people can dither in college? It is just a question I am asking.

Now, I know part of this hearing is to talk about, you know, other types of pieces of legislation to supposedly solve the problem. One thing I think is important for us to talk about, though, is how those proposals might be scored. Currently the CBO is constrained by having to score the cost of these college aid programs under the Federal Credit Reform Act, and under that scoring, for the 10-year period 2015–24, because it does not account really for varying economic conditions or loan defaults, it is actually showing that the student loan program saves the American taxpayer, in other words, reduces the deficit by $135 billion over 10 years.

But if you use a fair-value basis, if you actually account for tougher economic times, varying economic times, and defaults, it would actually cost the Federal Government $88 billion over that 10-year time frame.

So I think it is important, if we are looking at pieces of legislation, that we actually take a look at the fair-value cost and the effect it has on the deficit.

And then I think finally the only thing I want to talk about is another potentially unintended consequence of some of these programs designed to forgive loans. In 2007, Congress passed into law the College Cost Reduction and Access Act of 2007. It established a new public service loan forgiveness program that discharges any remaining debt after 10 years of full-time employment in the public service. The borrower must have made 120 payments a part of the direct loan program in order to obtain this benefit. In other words, they have to keep their—you know, they cannot be in default over the 10-year period while they are working for the public sector.

Now, Politico wrote a column on this and said that law schools looked at the new laws and saw an opportunity. Income-based monthly statements are lower than standard payments so the schools could cover graduates' payments entirely for the first 10 years. The money for law school repayment assistance programs usually comes out of tuition mostly paid with Federal student loans. Do you understand what I am saying there? So the law school is gaming the system. They are saying, "Oooh, so all we have to do is we will make the loan payments for our graduate students for 10 years, and at that point the American taxpayer will pay for our law degrees?"

At Berkeley, for example, it is part of the fee that all professional degree students pay. At Georgetown, 350 borrowers are taking advantage of this program. At Berkeley, there are 263.

By the way, the average student debt of a law graduate of Georgetown is $150,000. At Berkeley, it is $115,000.

And the Wall Street Journal wrote about this, too. It is not just Berkeley and Georgetown. Columbia University and University of Chicago are also doing that. And until recently, Georgetown had on its law school website basically talking about how the school's aid combined with the Federal plan "means public interest borrowers might not pay a single penny on their loans ever!" A school spokesman has said the statement was removed this year.

So, again, I understand that this $3.5 trillion a year entity called the Federal Government and the student loan program and all these aid packages are all well-intentioned programs. But I think we have to honestly take a look at the reality of the situation and look at the very severe and serious negative unintended consequences of our good intentions, part of that being that we have collectively enticed our children to incur $1.2 trillion in student loan debt that now we are trying to figure how to solve that problem that the Government has caused.

Thank you, Madam Chair.

Chairman MURRAY. Thank you.

We are going to turn to our witnesses. Again, Ms. Jones, thank you for coming and sharing your personal experiences. We are going to start with you.

STATEMENT OF BRITTANY JONES, FORMER PRESIDENT, STUDENT VIRGINIA EDUCATION ASSOCIATION

Ms. JONES. Good morning, Chairwoman Murray, Senator Johnson, and members of the Committee. My name is Brittany Jones, and I thank you for inviting me here today.

My story starts as a second grade student at Birdneck Elementary School, when the decision was made. I, Brittany Jones, self-proclaimed mathematician and resident drama queen, declared to the world that I would become a second grade teacher. With little deviation, I pursued this plan throughout my studies, then as a teacher intern in Henrico County Public Schools, followed by receiving my bachelor's degree from Virginia Commonwealth University in early and elementary education.

It was during high school when our counselors first began the conversations about attending college. They talked in detail about scholarships and grants and financial aid awards. Naturally, I assumed everyone could attend college. It was not until I was accepted and learned the amount of financial aid I would be offered that I feared I could not attend. After conversations with my financial aid counselor and various chats with my parents regarding the necessity of a college degree, I made the decision to enroll with the assistance of student loans and pursue my dream of becoming a teacher. Unfortunately, the cost of attendance constantly increased while the grant funds decreased.

Upon graduation in 2011, the joy of completing the first portion of my program was overshadowed by the truth that I had borrowed well over $70,000 in student loans from various sources—Federal subsidized, unsubsidized, Perkins, and personal loans. And still, I needed to complete another year of school, which was required to get my teaching certification. I, like many of the students I encountered as the Student Virginia Education Association President, was facing the difficult decision of whether to continue my education and follow my dream of being a teacher or seek immediate employment.

I recall one student who, having borrowed the maximum amount of student loans allowed for one school year, was unable to fill the gap in his cost of attendance. He later withdrew from the university and never returned. Another student, who, ironically, served as our chapter treasurer, also left school for financial reasons. A full-time student in the master's program, she also had a job in sales and was offered the position of store manager. Faced with the decision of incurring more student loan debt, she decided becoming a teacher was no longer the career path she would follow. For me personally, when confronted with the decision to borrow another 20 grand, $20,000, to complete my program, I decided it was best to postpone attendance.

Immediately after commencement ceremonies, I drove to an interview for a preschool teaching job, got it, and began teaching the following Tuesday. I was excited to have a position, despite the low wage of $10 an hour, because unlike many of my colleagues, I was working in my desired field. I was the lead teacher in my own classroom. I was elated—until the loan statements started to come.

Because I owed approximately $60,000 in Federal loans at the time and I was working full-time, I had to start paying them back. This proved problematic. They figured I would be able to afford paying $600 a month. I was making $10 an hour and paying over $900 in rent and insurance and other expenses a month Fortunately, my parents were able to help with some of the payments to keep the loan in good standing.

This continued for a few more months until I lost my job. In 2012, I received notice that I had defaulted on the remainder of my Federal loans, totaling approximately $58,000. A nice gentleman from the loan company called and requested the date by which I could send the $58,000 check or money order. After a laugh or two, he then said he would be happy to help set up a payment plan. He put in the calculations and determined I would be able to pay $653 a month. At this time I was working as a pre-kindergarten teacher making $13 an hour and paying $783 in rent, with more payments for utilities and insurance bills. Again, simple math: the numbers did not add up. I worked as many as three jobs at once just to make my monthly payments.

Now, 2 years later, I was finally cleared to apply for financial aid and return to school to pursue my master's. As you can imagine, the ordeal I went through with my student loans made this decision a weary one. So the search for alternative programs began. I did not want to collect any more student debt. My goal is to become a classroom teacher, not a teacher with more loan debt than she makes in a year.

This search led me to find the Denver Teacher Residency program. Through this program, which I will begin this summer, I will become a highly qualified educator with a master's degree. All fees associated with the cost of attendance will be repaid upon completion of the program, which includes 4 years teaching in Denver Public Schools.

This program is promising, and it is an exciting time in my life. Yet almost $50,000 still awaits repayment. Student loan debt has been the driving force of my decisions for the last 8 years of my life, and according to my current repayment plan, it is projected to be for the next 25 years of my life, well into the years for which I should be planning a retirement. It should not be this way.

Senators, you have the power to make sure that it is not this way any longer. You can take actions to help make college more affordable so that students have a fair shot at pursuing their dreams. Degrees not debt should be our collective goal. I urge you to help increase student aid, especially for those who need the most financial help. I urge you to help make student loans more affordable, including by allowing refinancing of those loans, as legislation from Senator Warren would do. And I ask you to look for ways to make careers in public service, like teaching, more attainable by expanding loan forgiveness programs.

Thank you, Chairwoman Murray, and the members of this Committee for the opportunity to share my story today.

[the prepared statement of brittany jones follows:]

Prepared Testimony of Brittany Jones
Former President, Student Virginia Education Association

"The Impact of Student Loan Debt on Borrowers and the Economy"
Before the U.S. Senate Budget Committee
June 4, 2014

Good morning Chairwoman Murray, Ranking Member Sessions and members of the Committee. My name is Brittany Jones and I thank you for inviting me to be here today.

My story starts as a second grade student at Birdneck Elementary School, when the decision was made. I, Brittany Jones, self-proclaimed mathematician and resident drama queen declared to the world and my teacher Mrs. Bulla that I would one day become a second grade teacher just like her. With little deviation, I pursued this plan throughout my studies, then as a teacher intern in Henrico County Public Schools, followed by receiving my Bachelor's Degree from Virginia Commonwealth University in Early and Elementary Education.

It was during high school when our counselors first began the conversations about attending college. They talked in detail of scholarships and grants, and financial aid awards. Naturally, I assumed everyone could attend college. It was not until I was accepted and learned the amount of financial aid I would be offered that I feared I could not afford to attend. After conversations with my financial aid counselor, and various chats with my parents regarding the necessity of a college degree, I made the decision to enroll with the assistance of student loans and pursue my dream of being a teacher. Unfortunately, the cost of attendance constantly increased while grant funds decreased.

Upon graduation in 2011, the joy of completing the first portion of my Teacher Preparation program was overshadowed by the truth that I had borrowed well over $70,000 in student loans from various sources – Federal Subsidized, Unsubsidized, Perkins and personal loans. And still, I needed to complete another year of school, which was required to get my teaching certification. I was like many of the students I encountered as the Student Virginia Education Association President, facing the difficult decision of whether to continue my education and follow my dream of being a teacher, or seek immediate employment.

I recall one student who, having borrowed the maximum amount of student loans allowed for one school year, was unable to fill the gap in his cost of attendance. He later withdrew from the university and never returned. Another student, who, ironically served as our chapter treasurer, also left school for financial reasons. A full-time student in the master's program, she also had a job in sales, and was offered the position of store manager. Faced with the decision of incurring more student loan debt, she decided becoming a teacher was no longer the career path she could follow. For me personally, when confronted with the decision to borrow another $20,000 dollars to complete my program, I decided it was best to postpone attendance.

Immediately after commencement ceremonies, I drove to an interview for a preschool teaching job, got it, and began teaching the following Tuesday. I was excited to have a position, despite the low wage of $10 an hour, because unlike many of my colleagues, I was working in my desired field. I was the lead teacher in my own class. I was elated! That is until the loan statements started to come.

Because I owed approximately $60,000 in federal loans at that time, *and* I was working full-time, I had to start paying them back. This proved problematic. They figured I'd be able to afford paying $600 a month. I was making $10 an hour and paying over $900 in rent and insurance, and other expenses. Fortunately, my parents were able to help some with the payments to keep the loan in good standing.

This continued for a few more months until I lost my job. In 2012, I received notice that I had defaulted on the remainder of my federal loans, totaling approximately $58,000. A nice gentleman from the loan company called and requested the date by which I would be sending the $58,000 check or money order. After a laugh or two, he then said he would be happy to help set up a payment plan. He put in calculations and determined I would be able to pay $653 a month. At this time I was working as a pre-kindergarten teacher making $13 an hour and paying $783 in rent, with more for utilities and insurance bills. Again, simple math: the numbers did not add up. I worked as many as three jobs at once, just to make my monthly payments.

Now, two years later, I was finally cleared to apply for financial aid and return to school to pursue my master's. As you can imagine, the ordeal I went through with my student loans made this decision a weary one. So, the search for alternative programs began. I did not want to collect any more student loan debt. My goal is to become a classroom teacher, not a teacher with more loan debt than she makes in a year.

This search led me to find the Denver Teacher Residency program. Through this program, which I will begin this year, I will become a highly qualified educator with a Master's Degree. All fees associated with the cost of attendance will be repaid to me upon completion of the program, which includes four years teaching in Denver Public Schools.

This program is promising, and it is an exciting time in my life. Yet almost $50,000 still awaits repayment. Student loan debt has been the driving force of my decisions for the last eight years of my life, and according to my current repayment plan, it is projected to be for the next 25 years of my life, well into the years for which I should be planning a retirement. It should not be that way.

Senators, you have the power to make sure it isn't this way any longer. You can take actions to help make college more affordable, so all students have a fair shot at pursuing their dreams. "Degrees not debt" should be our collective goal. I urge you to help increase student aid, especially for those who need the most financial help. I urge you to help make student loans more affordable, including by allowing refinancing of those loans as legislation from Senator Warren would do. And I ask you to look for ways to make careers in public service, like teaching, more attainable by expanding loan forgiveness programs.

Thank you, Chairwoman Murray and the members of this Committee for the opportunity to share my story today.

Chairman MURRAY. Thank you very much for coming and sharing that with us.

Mr. Chopra?

STATEMENT OF ROHIT CHOPRA, ASSISTANT DIRECTOR AND STUDENT LOAN OMBUDSMAN, CONSUMER FINANCIAL PROTECTION BUREAU

Mr. CHOPRA. Chairman Murray, Senator Johnson, and members of the Committee, thank you for the opportunity to testify today about the potential impacts of student debt.

You know, the financial crisis destroyed trillions in wealth for families preparing to send a child to college and contributed to large increases in student debt owed by Americans who have already graduated.

In addition to considering how to make college affordable for future students, we cannot ignore the impact of the $1.2 trillion already owed by more than 40 million Americans.

There has been growing consensus that today's $1.2 trillion can have repercussions that threaten the broader economy. The Treasury Secretary remarked that student debt is "hampering our economy across multiple sectors of society," and the Federal Reserve identified student debt as a risk to aggregate household spending.

Executives in the banking industry have also cautioned that the condition of the student loan market "is now having a significantly negative impact on students, the economy, and taxpayers."

According to a survey by the National Association of Realtors, 49 percent of Americans cited student loan debt as a "huge obstacle to homeownership." And the National Association of Home Builders noted that student debt can impair the ability for graduates to qualify for a mortgage.

Higher debt burdens might not only delay household formation but also other large purchases. America's largest auto maker has cited the overhang of student debt as a key factor explaining the low levels of car purchases by young people.

Student debt can hamper entrepreneurship. Preliminary research on student debt and small business formation finds a negative correlation between changes in student loan debt and formation of certain small businesses.

It may also have a longer-term effect on future retirement security. Young workers who save early for retirement can generate significant retirement assets over the course of their careers. But student debt may be stopping workers from even contributing at all.

The same can be said about the impact on labor market outcomes. The American Medical Association noted that high debt burdens can impact the career choices of new physicians, leading some to abandon primary care altogether. Student debt can impact the availability of other professions critical to the likelihoods of farmers and ranchers in rural communities. For example, veterinary students are graduating with debt averaging over $150,000 per borrower, making it less likely they can make ends meet in a dairy medicine or livestock management practice. And the list goes on and on.

There are several areas that warrant attention: servicing, loan restructuring and refinancing, and data availability.

First, to servicing. As the financial crisis unraveled, many Americans faced improper foreclosures due to mistakes from their mortgage servicer. And I am concerned that inadequate servicing may be contributing to our growing student loan default problem, now topping 7 million Americans in default on over $100 billion in balances.

Last month, after referrals from the CFPB, regulators ordered Sallie Mae to pay nearly $100 million for violating multiple laws, including illegal treatment of servicemembers with student loans.

Second, unlike other markets, refinance opportunities for student loan borrowers are few and far between. When mortgage borrowers see broader interest rates plummet, their own incomes rise, and their credit profiles improve, they try to refinance. Responsible student loan borrowers rarely have these options.

Third is student loan market transparency which we must address. As Fed Chair Janet Yellen has noted, regulators "missed some of the important linkages whereby problems in mortgages would rebound through the financial system." Currently, financial regulators and the public lack fundamental information on student loan origination and performance. Unsurprisingly, the drivers of prepayment, delinquency, and default in the student loan market are not well understood, and we must work to close the transparency gap.

In conclusion, we must ask ourselves: How do we preserve the drive to succeed for so many who feel that the dream is just now out of reach? Ignoring the warning signs may prove to hold back not only the future growth and dynamism of our economy but also our entrepreneurial spirit. Addressing these concerns in the near term may pay dividends for many years to follow.

Thank you again for inviting me to participate today, and I look forward to your questions.

[The prepared statement of Mr. Chopra follows:]

Written Testimony of Rohit Chopra
Assistant Director & Student Loan Ombudsman
Consumer Financial Protection Bureau
Before the
United States Senate Committee on the Budget
June 4, 2014

Chairman Murray, Ranking Member Sessions, and Members of the Committee, thank you for the opportunity to testify today about the potential impact of student debt on the lives of American consumers and the broader economy.

My name is Rohit Chopra, and I serve as an Assistant Director at the Consumer Financial Protection Bureau (Bureau), where I lead an office that focuses on issues facing students and young Americans. In 2011, I was also designated by the Secretary of the Treasury as the Student Loan Ombudsman within the Consumer Financial Protection Bureau, a new role established by Congress in the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Over the last decade, policymakers have focused heavily on trying to make college more affordable for students in years to come, which is an important goal. But the financial crisis, which destroyed trillions of dollars in home equity and savings for many families preparing to send a child to college, contributed to substantial increases in the amount of student debt owed by Americans who have since graduated from college. Therefore, it is important to focus on – and act to address – the impact of the $1.2 trillion in student debt already owed by more than 40 million Americans.

Growing Consensus

Two years ago, analysis by the Consumer Financial Protection Bureau uncovered that there was more than $1 trillion in outstanding student debt, and we raised the possibility that excessive student debt burdens may pose a problem for all of us.[1] Since that time, there has been growing consensus that today's $1.2 trillion can have repercussions that threaten the economic security of young Americans and broader economic growth.

[1] Consumer Financial Protection Bureau, *Too Big to Fail: Student Debt Hits a Trillion*, available at http://www.consumerfinance.gov/blog/too-big-to-fail-student-debt-hits-a-trillion (March 2012).

Secretary of the Treasury Jacob Lew remarked that student debt is "hampering our economy" across multiple sectors of society.[2] The Federal Reserve's Federal Open Market Committee, the central bank's monetary policy rate-setting board, identified student debt as a risk to aggregate household spending in coming years.[3] The Financial Stability Oversight Council, comprised of financial regulators and monitors from across the U.S. government, noted last month that "high student-debt burdens may dampen consumption and could impact household demand for housing purchases."[4]

Senior executives in the banking industry have also cautioned that the condition of the student loan market "is now having a significantly negative impact on students, the economy, and taxpayers."[5] America's largest automaker has cited the overhang of student debt as a key factor explaining the relatively low levels of car purchases by young people.[6]

Student Debt Domino Effect

Last year, the Bureau issued a public notice and held a hearing to gather input on the student debt domino effect, as well as potential policy options to mitigate the damage. We received more than 28,000 responses from experts and individuals impacted by student debt.[7] The responses from industry and consumers identified several potential areas of concern.

Homeownership and Household Formation

Respondents cited research that showed that three-quarters of the overall shortfall in household formation can be attributed to reductions among younger adults ages 18 to

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[2] Remarks of Secretary Lew before the Financial Literacy Education Commission, available at http://www.treasury.gov/press-center/press-releases/Pages/jl2191.aspx (October 2013).
[3] See Minutes of the Federal Reserve Board's Federal Open Market Committee, available at http://www.federalreserve.gov/monetarypolicy/fomcminutes20130320.htm (March 2013).
[4] See Financial Stability Oversight Council, *2014 Annual Report*, available at http://www.treasury.gov/initiatives/fsoc/Documents/FSOC%202014%20Annual%20Report.pdf (2014).
[5] See, for example, Meeting minutes of the Federal Advisory Council and the Federal Reserve Board of Governors, available at http://federalreserve.gov/aboutthefed/fac-20130920.pdf (September 2013).
[6] Remarks of Mustafa Mohatarem, Chief Economist of General Motors, to the Center for Automotive Research Management Briefing Seminars (August 2013).
[7] For the full docket of submissions from consumers, industry, and other organizations to this Request for Information, see http://www.regulations.gov/#!docketDetail;D=CFPB-2013-0004.

34, the age group disproportionately impacted by student debt.[8] In 2011, two million more Americans in this age group lived with their parents, compared to 2007.[9]

Professionals on the front line of the housing industry – from real estate agents to builders to mortgage bankers – have all described the challenges posed by student debt to homeownership. There appears to be a number of specific effects, including: down payment accumulation, mortgage qualification, and move-up purchases.

According to a recent survey by the National Association of Realtors, 49 percent of Americans cited student loan debt as a "huge obstacle" to homeownership.[10] Realtors have noted that first-time homebuyers typically rely heavily on savings to fund down payments. When young workers are putting large portions of their income toward student loan payments, this can extend the time it takes to accumulate that first down payment.

One borrower, Heather, told us she owes $115,000 in student loans from earning her degrees, half of which are private student loans. She loves her job as a nurse, but she also wrote, "I would also love to buy a new car and buy a home which I won't be able to do for a very long time."[11]

The chief executive of the Mortgage Bankers Association noted that student debt will "have an extraordinary dampening effect on young peoples' ability to borrow for a home, and that's going to impact the housing market and the economy at large." The National Association of Home Builders wrote to the Bureau about the relatively low share of first-time homebuyers in the market compared to historical levels and that student debt can "impair the ability of recent college graduates to qualify for a loan."[12]

Another borrower, Michelle, told us that she would be able to pay less per month if she bought a home rather than rented. But she was told her debt relative to her income meant that she could not qualify for a mortgage.[13]

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[8] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-7202.
[9] U.S. Census Bureau, *Income, Poverty and Health Insurance Coverage in the United States: 2012*, P60-245, available at https://www.census.gov/prod/2013pubs/p60-245.pdf (September 2013).
[10] National Association of Realtors, *Housing PULSE Survey 2013*, available at http://www.realtor.org/sites/default/files/reports/2013/housing-pulse-survey-executive-summary-2013-07.pdf (July 2013).
[11] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-7670.
[12] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-1042.
[13] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-5256.

With lower levels of first-time buyers in the market, this also poses problems for existing homeowners. William Dudley, President of the Federal Reserve Bank of New York, said recently that student debt's impact on first-time homeownership "makes it more difficult for existing homeowners to sell and trade-up."[14]

And the impact isn't limited to those who want to buy a home. One realtor told us how she routinely checks credit reports for prospective renters. With student loans soaking up so much of their incomes, many applications end up being denied. With so many young Americans living with parents or roommates rather than forming their own households, this might have a material impact on purchases of other goods, like furniture and appliances.

Small Business and Entrepreneurship

Small business plays a critical role in creating opportunity and wealth in our economy. According to the Bureau of Labor Statistics, small businesses, defined as an independent entity having fewer than 500 employees, created two-thirds of net new jobs from the third quarter of 2009 through the third quarter of 2012. But student debt may be stymying the efforts of entrepreneurs to sustain and grow their businesses.

One aspiring entrepreneur, Julie, wrote, "I am in the process of starting a business, but am unsure as to whether I can afford to because I have so much student loan debt."[15]

In submissions to the Bureau by coalitions of small businesses and startups, groups cited a number of potential negative impacts of student debt on entrepreneurship, such as access to credit and willingness to take financial risks. There has been an increasing amount of evidence to support these hypotheses.

Preliminary research on student debt and small business formation finds a "significant and economically meaningful negative correlation between changes in student loan debt and net business formation" for small businesses employing 1-4 employees.[16] Unlike larger firms with more seamless access to capital markets, small businesses often rely heavily on the owner's personal access to credit used primarily for business purposes.

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[14] Remarks of William Dudley, President of the Federal Reserve Bank of New York, to the New York Association of Business Economics, available at http://www.newyorkfed.org/newsevents/speeches/2014/dud140520.html (May 2014).
[15] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-0899.
[16] Ambrose, Cordell, and Ma, *The Impact of Student Loan Debt on Small Business Formation,* available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2417676 (March 2014).

Longitudinal surveys of small businesses illustrate the outsized role that personal credit cards and personal bank loans play in financing the enterprise's growth and survival. In early years, surviving small businesses rapidly increase their employment, while also heavily utilizing these forms of financing. One of the top reasons for denial of credit to small businesses is attributed to the owner's personal credit profile.[17]

In roundtable discussions with entrepreneurs, founders describe that their student debt forces them to take cash out of the business to make their payments, making it tougher to "bootstrap." Those early revenues could otherwise be reinvested to hire employees or to expand their product offerings. Others have told the Bureau that prospective investors are concerned when founders have heavy student debt burdens, since the entrepreneur may be unable to maintain an extended period of negative cash flow or may be tempted to leave for a higher salary at a larger firm.

Retirement Security and Asset Accumulation

The impact of heavy student debt burdens may also have a longer-term effect on the ability of households to save and accumulate wealth for retirement. One borrower, Kristi, was quite straightforward when telling us about saving for retirement, "Don't make me laugh! We can't save for retirement because we need all of our money for these loans."[18]

Tabulations of the 2010 Survey of Consumer Finances reveals a large lag in net worth for younger households with student debt. Households headed by a younger college-educated adult had a net worth of just $8,700 – approximately 85% less than equivalent households without student debt, despite nearly identical household income between debtors and non-debtors. The difference is even more dramatic for student debtors who did not complete a bachelor's degree.[19]

Student debt can also have more long-term impacts on an individual's financial security. Due to the shift away from defined benefit plans and toward 401(k)s, IRAs and other defined contribution plans, ensuring a secure retirement will be largely self-directed for most young workers. Young workers who are able to make early, sizable contributions to these plans can generate significant retirement assets over the course of their careers.

[17] See microdata from the Ewing Marion Kauffman Foundation.
[18] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-7275.
[19] See an analysis by Pew Research, available at http://www.pewsocialtrends.org/2014/05/14/young-adults-student-debt-and-economic-well-being (May 2014).

But student debt may be impeding workers from making sizable contributions – or even contributing at all.

Recent analysis by the largest provider of employer-based defined contribution plans indicates that 43 percent of young workers participate in their employers' plans, compared to approximately 70 percent of workers ages 35 to 64. For the greater than two-thirds of employers that do not feature automatic enrollment, participation in these plans by young workers drops to just 23 percent.[20]

And according to two industry analyses, 43 percent of young workers do not save enough to receive a full employer match[21] and are more likely to cash out their plans when changing jobs.[22]

If student debt acts as a headwind to young worker participation in retirement plans, the opportunity for wealth accumulation diminishes significantly. One recent estimate considered the impact of an average level of student loan debt for a college-educated household compared to a similarly situated debt-free household. The analysis found that student debt could crowd out more than $200,000 in net assets over a borrower's working life, including a loss of nearly $135,000 in net retirement savings.[23]

The impact on retirement security is not limited to younger workers – many older households are forced to reevaluate their retirement plans in light of debt used to finance the education of a child or grandchild. AARP wrote to the Bureau about the impact of student debt on families headed by households over the age of 50, noting that "increasing debt threatens their ability to save for retirement or accumulate other assets, and may end up requiring them to delay retirement."[24]

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[20] Vanguard, *How America Saves 2013: A report on 2012 defined contribution plan data*, available at https://pressroom.vanguard.com/nonindexed/2013.06.03_How_America_Saves_2013.pdf (June 2013).
[21] Hewitt, Aon, *Navigating the Path to Retirement: 2011 Universe Benchmarks Highlights*, available at http://www.aon.com/attachments/thought-leadership/survey_2011universe_benchmarks_es.pdf (2011).
[22] Northern Trust, *Line of Sight: The Path Forward – Engaging the Younger Employee in DC Plan Participation*, available at http://www.northerntrust.com/documents/white-papers/asset-management/2011-path-forward.pdf (October 2011).
[23] Hiltonsmith, Robert, *At What Cost? How Student Debt Reduces Lifetime Wealth*, available at http://www.demos.org/sites/default/files/imce/AtWhatCostFinal.pdf (August 2013).
[24] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-6831.

Health Care, Education and Rural America

The impact of student debt might also skew labor market outcomes. Notably, heavy debt burdens exacerbate the challenges that many communities face when seeking to attract and retain health care professionals and teachers. These problems may be felt even more acutely in rural America.

The American Medical Association noted that high debt burdens can impact the career choices of new doctors, leading some to abandon caring for the elderly or children for more lucrative specialties.[25] New research validates these concerns — the share of new medical school graduates pursuing primary care specialties has declined steadily since 2009 and student debt has been found to have been a statistically significant deterrent on the selection of primary care practice by some medical students.[26]

The impact of rising student debt on graduates' ability to practice in primary care is not limited to physicians. Tara, a nurse working in primary care at a community health clinic told us she "could not in good conscience recommend primary care as a career choice for others" due to her student debt burden.[27]

Many graduates pursuing careers in many public service professions share the same concerns. One borrower told us how she was unable to find a repayment plan that made her debt manageable and ultimately chose to abandon her career as a teacher in order to pursue more lucrative work in the private sector.[28] Recent research has shown that for every $10,000 in additional student debt, young graduates are 6% less likely to pursue a career in public service, especially careers as teachers.[29]

Classroom teachers submitted letters detailing the impact of private student loan debt, for which forgiveness programs or income-based repayment options are usually not

[25] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-0878.
[26] Elliott, Joy, *Who Chooses to be a Family Physician?*, available at http://ofpjournal.com/index.php/ofp/article/view/5(2014); See also, Phillips, JP et al, *Medical student debt and primary care specialty intentions*, available at https://www.stfm.org/fmhub/fm2010/October/Julie616.pdf (October 2010).
[27] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-0808.
[28] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-0813.
[29] Rothstein, Jesse, and Cecilia Elena Rouse, *Constrained after college: Student loans and early-career occupational choices, Journal of Public Economics*, 95(1), 149-163 (2011).

offered. One school district official wrote to the Bureau noting that programs to make student debt more manageable could lead to higher retention of quality teachers.[30]

These trends may pose additional challenges to rural communities, where young graduates with already-strained household balance sheets may have limited access to affordable rental housing and may discover that car ownership is a prerequisite for employment. With many rural medical professionals operating in solo practices, high debt levels might reduce availability to secure initial financing.

Student debt can also impact the availability of other professions critical to the livelihoods of farmers and ranchers in rural communities. According to an annual survey conducted by the American Veterinary Medical Association, 89 percent of veterinary students are graduating with debt, averaging $151,672 per borrower.[31] Veterinarians encumbered with high debt burdens may be unable to make ends meet in a dairy medicine or livestock management practice in remote areas.

Accountability for Student Loan Servicers

Loan servicers are the primary point of contact on student loans for more than 40 million Americans. High-quality servicing can contribute to an individual borrower's ability to successfully repay their debt, especially through enrollment into affordable repayment plans.

As the recession decimated the job market for young graduates, a growing share of student loan borrowers reached out to their servicers for help. But the problems they have encountered bear an uncanny resemblance to the problems faced by struggling homeowners when dealing with their mortgage servicers. Like many of the improper and unnecessary foreclosures experienced by many homeowners, I am concerned that inadequate servicing has contributed to America's growing student loan default problem, now topping 7 million Americans in default on over $100 billion in balances.

The Bureau has received thousands of complaints from borrowers describing the difficulties they face with their student loan servicers. Borrowers have told the Bureau about a range of problems, from payment processing errors to servicing transfer

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[30] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-0038.
[31] American Veterinary Medical Association, *AVMA Collections: Senior Surveys*, available at https://www.avma.org/news/journals/collections/pages/avma-collections-senior-surveys.aspx (October 2012).

surprises to loan modification challenges. To ensure that we do not see a repeat of the breakdowns and chaos in the mortgage servicing market, it will be critical to ensure that student loan servicers are providing adequate customer service and following the law.

Canary in the Coal Mine

In the mortgage market, a particularly disconcerting occurrence involved the foreclosures faced by active-duty servicemembers, despite prohibitions under the Servicemembers Civil Relief Act (SCRA). Like in the mortgage market, the treatment of servicemembers by student loan servicers has been quite troubling. Rather than receiving clear and accurate information, many military families have found themselves buried in and blindfolded by red tape from their student loan servicers.

My colleague Holly Petraeus, who leads the Bureau's Office of Servicemember Affairs, and I also published a report describing the obstacles military families face when attempting to access their student loan repayment benefits provided by applicable laws.[32] For example, men and women in uniform are entitled to a 6 percent rate cap on their student loans incurred prior to entering active-duty status, as provided for by the SCRA. Unfortunately, some servicers have placed inappropriate requirements on servicemembers seeking the rate cap.

For example, one servicemember who filed a complaint with the Bureau saw his request to his servicer rejected multiple times because his military orders did not include an end date. This is neither a requirement of the SCRA, nor feasible for many military commissioned officers to obtain, as their orders usually do not delineate an end date. Another servicemember with multiple loans sought to reduce the rate on his highest-rate loans, but, simultaneously, the servicer proceeded to raise the rate on the loans that were below 6 percent.

Improper and potentially unlawful servicing errors can cause harm to servicemembers. Admittedly, military families are a small segment of the population. But if a servicer is unable to provide adequate service to those who have special protections under the law, it raises questions about whether it is agile enough to deal with the complexities of the larger population of borrowers facing hardship.

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[32] Consumer Financial Protection Bureau, *The Next Front? Student Loan Servicing and the Cost to Our Men and Women in Uniform*, available at http://www.consumerfinance.gov/reports/the-next-front-student-loan-servicing-and-the-cost-to-our-men-and-women-in-uniform (October 2012).

Strengthening Student Loan Servicing

Unlike most markets for consumer products and services, student loan borrowers generally don't get to choose their student loan servicer. And with few opportunities to refinance with a new provider, a consumer cannot easily take his or her business elsewhere. Ordinary market forces won't guarantee reasonable customer service, while potentially magnifying incentives to cut corners.

The past decade offers a useful case study about the potential impact of conflicting incentives. In 2004, the Department of the Treasury finalized the privatization of the Student Loan Marketing Association, a government-sponsored enterprise (GSE) better known as Sallie Mae. This year, SLM Corp., the GSE's successor company, ceased operating in its current form.[33]

During the ten years the successor corporation operated, it generated substantial revenue through government contracts for student loan servicing and debt collection. The company also benefitted from several government-supported emergency programs as problems in the capital markets emerged.[34] Despite these benefits received from the public, the corporation was found to be violating the law on multiple occasions by state authorities,[35] banking regulators,[36] and federal auditors.[37]

And just last month, after referrals from the Consumer Financial Protection Bureau, the Department of Justice and the FDIC ordered Sallie Mae and Navient to pay nearly $100

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[33] Recently, the successor corporation to the GSE undertook a major corporate restructuring, separating into multiple companies.

[34] For example, according to SLM Corp.'s SEC filings, the company recorded gains of $284 million in 2009 and $321 million in 2010 on sales of government-guaranteed loans to the Department of Education as part of the ECASLA program. The company also benefitted from the Term Asset-Backed Securities Loan Facility (TALF).

[35] For example, the Attorney General of New York found that Sallie Mae provided gifts, entertainment, and cash payments to colleges and financial aid officials. The company agreed to a strict code of conduct as part of a settlement. See Attorney General of the State of New York, *Matter of SLM Corporation*, Assurance of Discontinuance, available at http://www.ag.ny.gov/sites/default/files/press-releases/archived/SLM%20Corporation%20Assurance.pdf (April 2007).

[36] In 2008, just three years after the successor corporation chartered Sallie Mae Bank, the Federal Deposit Insurance Corporation (FDIC) and the Utah Department of Financial Institutions found that the company was operating in violation of provisions of the Federal Trade Commission Act, which bans unfair and deceptive practices, as well as the Equal Credit Opportunity Act, which restricts discriminatory lending practices. See Federal Deposit Insurance Corporation and Utah Department of Financial Services, *Matter of Sallie Mae Bank,* Order to Cease and Decist, Docket FDIC-08-086b, available at http://www.fdic.gov/bank/individual/enforcement/2008-08-10.pdf (August 2008).

[37] In 2009, an audit by the Department of Education's Inspector General found that the successor corporation's noncompliance led to overbilling the federal government by more than $22 million. See Office of Inspector General, U.S. Department of Education, *Special Allowance Payments to Sallie Mae's Subsidiary, Nellie Mae, for Loans Funded by Tax-Exempt Obligations: Final Audit Report,* available at http://www2.ed.gov/about/offices/list/oig/auditreports/fy2009/a03i0006.pdf (August 2009).

million in restitution and penalties for violating multiple laws. Regulators determined[38] that the companies were:

- Unfairly conditioning receipt of benefits under the SCRA upon requirements not found in the law
- Improperly advising servicemembers that they must be deployed to receive benefits under the SCRA
- Failing to provide complete SCRA relief to servicemembers after having been put on notice of these borrowers' active duty status
- Inadequately disclosing its payment allocation methodologies to borrowers while allocating borrowers' payments across multiple loans in a manner that maximizes late fees
- Misrepresenting and inadequately disclosing in its billing statements how borrowers could avoid late fees

The FDIC also noted in the consent order that there were violations of additional consumer protection laws, including the Equal Credit Opportunity Act and the Electronic Fund Transfer Act.[39]

While the post-GSE corporation no longer operates in the form it took immediately post-privatization, the challenges it experienced offer a reminder that regulators must be vigilant to protect consumers, since ordinary market forces in the student loan market may not fully align incentives among all market participants.

The Bureau recently finalized a rule that will allow the agency to supervise larger nonbank student loan servicers, closing a significant gap in oversight for compliance with federal consumer financial laws.

In a recent report analyzing student loan complaints related to payment processing and servicing transfers, I recommended that Congress consider the applicability of recent

[38] See, Federal Deposit Insurance Corporation, *FDIC Announces Settlement with Sallie Mae for Unfair and Deceptive Practices and Violations of the Servicemembers Civil Relief Act*, available at http://www.fdic.gov/news/news/press/2014/pr14033.html (May 2014).
[39] Federal Deposit Insurance Corporation, *In the Matter of Sallie Mae Bank*, Consent Order, Order for Restitution, and Order to Pay Civil Money Penalty, available at https://www5.fdic.gov/EDOBlob/Mediator.aspx?UniqueID=5007e0b4-911a-435c-9a0a-9d984ec5f53f (May 2014).

reforms to the credit card and mortgage servicing markets to determine whether they might help the student loan servicing market function more efficiently.[40]

For example, many consumers who wish to pay down their loans more quickly find that student loan servicers allocate payments in ways that might increase the amount of total interest they will pay, slowing them down on the path to be debt-free. For credit card borrowers with balances at multiple rates, generally, prepayments are allocated to balances at the highest interest rate, facilitating faster repayment of debt with minimal bureaucratic burden.

Refinance and Restructure

For borrowers who graduated into a difficult labor market, high student debt burdens have added insult to injury. Borrowers and industry observers have repeatedly noted that, unlike other markets, refinance opportunities are few and far between. In a report published last May, we discussed ways to jumpstart a student loan refinance market and spur loan restructuring.[41]

Among borrowers who have dutifully managed their monthly payments on high-interest student loans, many told us that they would like an opportunity to refinance. When mortgage borrowers see rates plummet, their incomes rise, or their credit profiles improve, they try to refinance. Responsible student loan borrowers rarely have these options. Fortunately, since our May 2013 report, we have seen some market participants expand their offerings to borrowers, offering them lower rates that can lead to substantial savings over the life of the loan.[42]

While the vast majority of outstanding student loan debt is guaranteed or directly lent by the federal government, solutions to promote affordability of student loans must consider the role of private student loans. High-debt borrowers graduating amidst the financial crisis disproportionately used private student loans. According to an analysis

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[40] Consumer Financial Protection Bureau, *Annual Report of the CFPB Student Loan Ombudsman*, available at http://files.consumerfinance.gov/f/201310_cfpb_student-loan-ombudsman-annual-report.pdf (October 2013).
[41] Consumer Financial Protection Bureau, *Student Loan Affordability* , available at http://files.consumerfinance.gov/f/201305_cfpb_rfi-report_student-loans.pdf (May 2013).
[42] Some existing lenders are concerned about the impact of more competition, which could lower prices and reduce the net interest margins on their portfolios. Investors have also noted that additional refinancing activity would increase conditional prepayment rates, reducing returns to holders of the riskiest tranches of securitized asset-backed securitizations.

of borrowers graduating from a four-year college in 2008 with more than $40,000 in debt, 81% used private student loans.[43]

Unlike federal student loans, which include a range of loan modification options to keep payments affordable, private student loan borrowers rarely have these options. The report describes ways to create a uniform framework for borrowers to restructure their private student loans so loan restructuring activity can be dramatically increased, while simultaneously reducing borrower distress.

BlackRock, one of the world's largest asset managers, noted that "initiatives targeted at young workers with high levels of student indebtedness, perhaps surprisingly to some, have an outsize impact in supporting the housing recovery and financial markets."[44] More robust refinancing and loan restructuring that reduces the burden of student debt can benefit borrowers, market participants, and the economy more broadly.

Demystify with Data and Transparency

Federal Reserve Chair Janet Yellen once noted that, prior to the crisis, financial regulators "missed some of the important linkages whereby problems in mortgages would rebound through the financial system."[45] The opacity and our collective lack of understanding of the mortgage market had serious consequences for the economy.

While there have been major strides to better assemble mortgage data, the opacity of the student loan market remains deeply problematic, adding further uncertainty over the potential spillovers into the rest of the economy. I am quite concerned that financial regulators and the public lack access to basic, fundamental data on student loan origination and performance. Without these data, we will be challenged to understand the complete set of risks posed by student debt burdens.

Most loan-level mortgage origination data is currently subject to public disclosure, stripped of borrower-identifiable information, under the Home Mortgage Disclosure Act.[46] Data from housing GSEs and mortgage-backed securities filings shed significant

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[43] Project on Student Debt, *High Hopes, Big Debts,* available at http://www.ticas.org/files/pub/High_Hopes_Big_Debts_2008.pdf (May 2010).
[44] Rieder, Rick, "Student Loan Debt and Its Effect on the Housing Market Recovery," *Institutional Investor* (May 2014).
[45] Testimony of Janet Yellen before the Senate Committee on Banking, Housing, and Urban Affairs (November 2013).
[46] The CFPB developed and maintains a web tool to allow the public to access and analyze mortgage origination data released pursuant to HMDA. See Consumer Financial Protection Bureau, *The Home Mortgage Disclosure Act,* available at http://www.consumerfinance.gov/hmda.

light on loan-level performance. The Office of the Comptroller of the Currency regularly publishes a mortgage metrics report, detailing loan modification performance and other key servicing data.[47]

The Federal Financial Institutions Examination Council collects reports from insured depository institutions on balance sheet holdings, but student loans are aggregated with many other types of non-mortgage credit products. SEC filings from large financial institutions rarely report key data on student loans. Student loan ABS filings and servicer performance reports are much less granular than similar mortgage reports. Unsurprisingly, the drivers of prepayment, delinquency, and default in the student loan market are not well understood by investors and financial analysts. Questionable accuracy of student loan credit reporting data adds further uncertainty.

We must also seek to better understand how student debt is distributed among various segments of the population. The American Association of University Women, citing its 2012 analysis of borrower debt burden, noted that a much higher portion of female college graduates are shouldering heavy debt burdens relative to their income, compared to similarly-situated males.[48]

According to the College Board,[49] black students graduating from college in 2008 at the onset of the financial crisis were more likely to have higher levels of debt than other students. Black students were more likely to use private student loans.[50] In addition, an analysis of the Current Population Survey from the Center for Economic and Policy Research reveals that unemployment for black recent college graduates was more than double that of the entire population of recent college graduates in 2013. Even black recent college graduates in science, technology, engineering, and mathematics (STEM) fields experienced higher than average unemployment. Differences in underemployment rates also showed similar trends.[51] Understanding both loan usage

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[47] See, for example, Office of the Comptroller of the Currency, *Mortgage Metrics Report for 2013 Q4*, available at http://www.occ.gov/publications/publications-by-type/other-publications-reports/mortgage-metrics-2013/mortgage-metrics-q4-2013.pdf (March 2014).
[48] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004-8425.
[49] See College Board Advocacy and Policy Center, *Who Borrows Most? Bachelor's Degree Recipients with High Levels of Student Debt*, available at http://advocacy.collegeboard.org/sites/default/files/Trends-Who-Borrows-Most-Brief.pdf (April 2010).
[50] See Consumer Financial Protection Bureau and U.S. Department of Education, *Private Student Loans*, available at http://www.consumerfinance.gov/reports/private-student-loans-report (July 2012).
[51] Jones, J. and Schmitt, J., *A College Degree is No Guarantee*, Center for Economic and Policy Research, available at http://www.cepr.net/documents/black-coll-grads-2014-05.pdf (May 2014).

and employment patterns can help determine borrower populations where distress may be more acute.

The Bureau is coordinating with other regulators on potential ways to enhance the quality of publicly-reported data. Over the longer term, we must aim to reduce the transparency gap between the mortgage and student loan markets. This can lead to more efficient market monitoring and shed light on the linkages between student indebtedness and other sectors of the economy. Better data and transparency will help us to better understand the demographics and professions where borrowers may be experiencing distress, as well as whether lenders and servicers are fairly serving their customers.

Preserving the Dream

Our country was built on the promise that if each of us played our part, contributed our labor, our enterprise and our knowledge, the only limit to our success was our own work ethic. College has served as a gateway to opportunity for millions to climb the ladder and achieve their dreams. And the individual rewards of our hard work – owning a car, buying our first home, and securing a comfortable retirement – continue to define the American dream.

But in the aftermath of the Great Recession, behind all of the facts and statistics, is a much broader question – how do we preserve the drive to succeed for so many who feel that the dream is now out of reach?

For borrowers like Andrea, student debt is a direct threat. She writes, "How can someone even dream of taking out a mortgage to purchase a home when she is struggling to pay back student debt? How can a person think of starting a family if he already owes so much money? How can a potential entrepreneur take the risk to start her dream business when she knows that failure will not only mean losing that investment, but everything else as well? We go to college to open doors, to pursue what we truly want out of a fulfilling life. Massive student debt debilitates this mission."[52]

[52] See http://www.regulations.gov/#!documentDetail;D=CFPB-2013-0004.

Ignoring the warning signs may prove to hold back not only the future growth and dynamism of our economy, but also our spirits. Addressing these concerns in the near-term may pay dividends for many years to follow.

Thank you again for inviting me to participate in today's hearing, and I look forward to discussing potential solutions to help borrowers climb the economic ladder and stop the student debt domino effect.

Chairman MURRAY. Thank you very much.
Dr. Vedder?

STATEMENT OF RICHARD K. VEDDER, PH.D., DISTINGUISHED PROFESSOR EMERITUS OF ECONOMICS, AND FACULTY ASSOCIATION, CONTEMPORARY HISTORY INSTITUTE, OHIO UNIVERSITY, AND DIRECTOR, CENTER FOR COLLEGE AFFORDABILITY AND PRODUCTIVITY

Mr. VEDDER. Thank you, Senator Murray, Senator Johnson, and other members of the Budget Committee. I wish to make three points.

First, the current student loan debt crisis would never have happened had college costs increased at the general rate of inflation. The primary cause of the student debt problem is increased university fees. You must deal with the root cause of this, namely, runaway college cost inflation.

Second, there are many reasons for this university price inflation, several of which I mention in my written statement. But one that is relevant here is that rising tuition fees are partially caused by Federal student financial assistance programs themselves. The programs themselves are part of the problem. Any significant successful solution to the problem of rising college costs will work only if you radically change the nature and magnitude of Federal finance.

Third, we are at or near a tipping point, where fundamental change will come to higher education. These changes are starting to happen. I believe many policy proposals gaining prominence these days do not fundamentally address the broader problems and, indeed, would likely worsen rather than improve the situation.

Now, Table 1 looks at the inflation-adjusted increases in tuition fees for various years over the last 75 years, along the lines of Senator Johnson's earlier comments. We see that for the first half of that period, tuition fees tended to rise about 1 percent more than the overall inflation rate; but since 1978, inflation-adjusted tuition growth has about tripled to well over 3 percent a year.

If college tuition inflation since 1978 were what it had been before that day, say 1 percent a year, tuition levels today would be almost 60 percent lower than they actually are. Public 4-year university tuition levels would be in the $3,000 to $5,000 range instead of $7,000 to $12,000. Student loan volume would be dramatically less.

It is a bigger burden, for example, for a citizen of Indiana to send their child to Purdue University today than at the end of the Great Depression. Even room and board charges far outdistance food and housing inflation rates. Solve the tuition fee problem, you will dramatically reduce the student loan debt crisis.

Now, there are many explanations for rising tuition fees, and three are discussed in my written testimony, but the most relevant here is the explosive growth in Federal student financial aid, and this has contributed importantly to rising tuition fees. There will be no permanent solution to the debt crisis without reining in Federal programs.

There are many ways to downsize these programs to make them more progressive, which liberal Democrats should like, but also smaller and cheaper, which Republicans should like. Existing programs have failed miserably in providing greater access for lower-income Americans. The proportion of recent college graduates coming from the lowest quartile of the income distribution is smaller than it was in 1970—before Pell grants or huge student loan programs. Rising income inequality has been associated with more Federal student financial aid assistance, and I do not think that is coincidental.

In my written testimony, I show concerns about several administration initiatives, including the college rating system and gainful employment regulations. But I want to briefly comment on the proposal of Senator Warren to lower interest rates on loans to past borrowers. I think this is a bad idea, for several reasons, beginning with the fact that it does utterly nothing to address college tuition inflation. Conscientious payers of debt obligations end up getting punished relative to non-payers who get lower interest rates. A bad message. It will also add tens of billions of dollars to the deficit and national debt. There are other objections as well.

We may be, as Senator Johnson hinted, overinvesting in some ways in higher education. The advantages of getting a degree are actually starting to decline, not increase, particularly for young graduates. We need to reduce our aid programs, probably doing away with tuition tax credits and PLUS loans and constraining other grants.

There are no painless solutions, but merely doing more of the same, lower interest rates, more loans, will worsen this situation and probably enhance, not reduce, income inequality in America.

Thank you very much.

[The prepared statement of Mr. Vedder follows:]

TESTIMONY OF RICHARD K. VEDDER
DIRECTOR, CENTER FOR COLLEGE AFFORDABILITY AND PRODUTIVITY
BEFORE THE COMMITTEE ON THE BUDGET
UNITED STATES SENATE
JUNE 4, 2014

CAN COLLEGE BE MADE MORE AFFORDABLE? IT'S ABOUT MORE THAN STUDENT LOANS

Senator Murray, Senator Sessions, and members of the Budget Committee:

I am Richard Vedder. I direct the Center for College Affordability and Productivity, a Washington-based research organization, and am also an economics professor at Ohio University and an Adjunct Scholar at the American Enterprise Institute.

I wish to make three key points this morning. First, the current student loan debt crisis would never have happened had college costs increased at the general rate of inflation. The major cause of the student debt problem is increased university fees –period. To deal long term with this issue, you must address the root cause, namely runaway college cost inflation.

Second, there are many reasons for this university price inflation, some of which are mentioned in this written statement that I submit for the record. *But one relevant major contributor to the rise in tuition fees, in my judgment, is the federal student financial assistance program itself.* No significant successful solution to the problem of rising college costs can occur without rethinking the magnitude and nature of the federal financing role.

Third, we are at or near a tipping point, where fundamental change will come to higher education. Early indications are that these changes are starting to happen. I will elaborate a bit on this. I will argue that many policy proposals gaining prominence these days do not fundamentally address the problems leading to big changes, and, indeed, they would likely worsen rather than improve the existing situation.

First: Runaway College Tuition Inflation

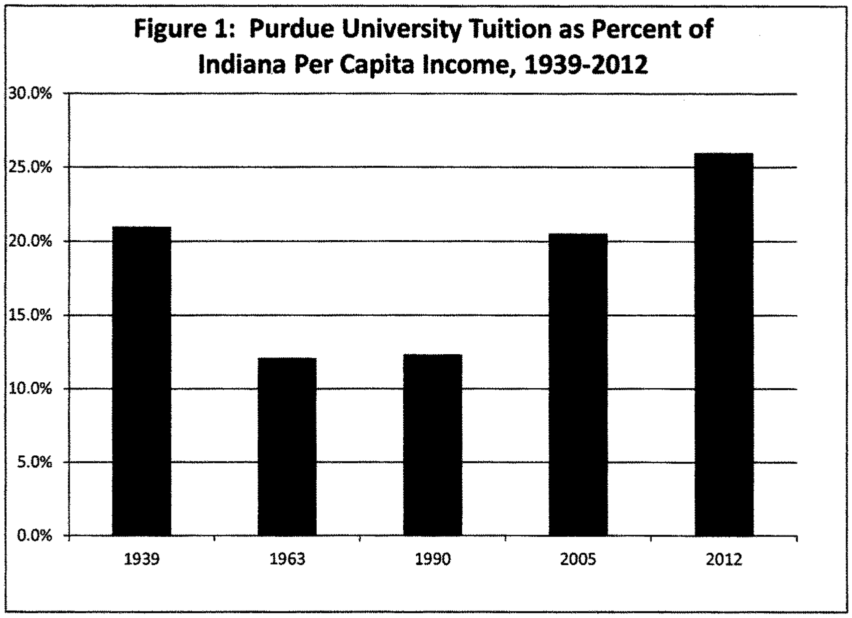
Table 1 looks at the inflation-adjusted increases in tuition fees over the past 75 years. The data prior to 1978 are less solid than the post-1978 numbers, being based just on public institutions; 1978 is the year the Bureau of Labor Statistics began calculating a tuition price index. Note that changes in real tuition fees have accelerated over time. In the period before 1978, fees tended to rise roughly one percent faster annually than the overall rate of inflation; since 1978, the increases have accelerated a great deal, to the 3 to 4 percent range. There are some technical issues related to the calculation of fee increases, but under almost any scenario the cost of going to college is rising faster in the last generation –and from a higher base –than in the previous two generations.

Table 1: Changes in Real (Inflation Adjusted) Tuition Fees at American Universities, 1939 to 2014		
Time Period	Annual Percent Change in Tuition Fees	Federal Student Financial Aid Presence?
1939-1964	**1.26%**	**Zero to Moderate**
1964-1978	0.43	Moderate
1978-1990	**3.14**	**Fairly Large**
1990-2002	3.71	Large
2002-2014	**3.80**	**Very Large**

Sources: Bureau of Labor Statistics; Purdue University, National Center for Education Statistics, author's calculations; data before 1978 are based on data for public institutions.

Suppose tuition fees since 1978 had risen by one percent percent a year in inflation adjusted terms—roughly the average growth in the period 1939 to 1978. Today, fees would average about 59 percent lower than they actually are. The state university with a $10,000 in-state tuition charge would be charging a bit over $4,000 a year. Student debt loads would be a very small fraction of what they actually are—probably less than one-third on average compared with current debt levels. Indeed, I suspect the proportion of students graduating from college debt free would be dramatically greater than it actually is. As a consequence, the national uproar over rising college tuition fees would be nonexistent or dramatically less. At the most elite private schools, posted tuition fees, now over $50,000 a year, would have been around $20,000 if tuition fees had risen like they did in the 1939-78 period, and at more typical private schools, the tuition fee would be perhaps $15,000 instead of $35,000.

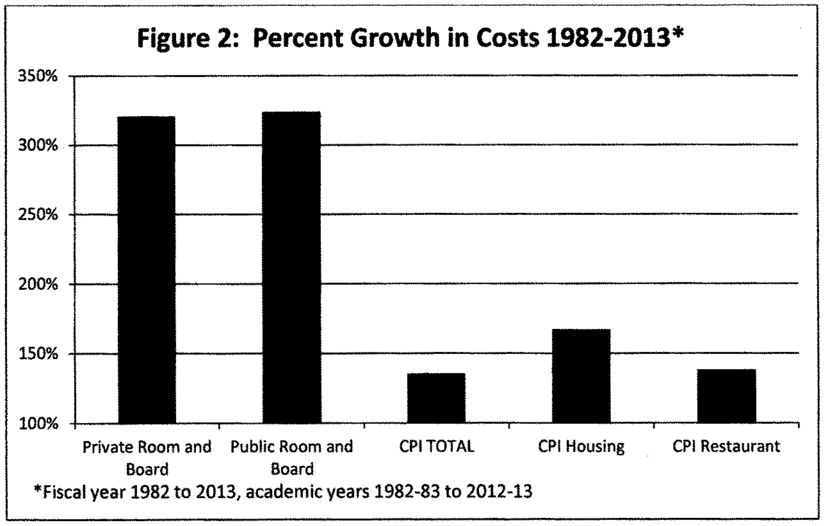
In Figure 1, I look at the ratio of in-state tuition charges at one of the primary public institutions in Indiana, Purdue University, to Indiana's per capita income, for various dates over time. Note that in 1939, at the end of the Great Depression, it took about 22 percent of income per person to pay the Purdue tuition. With economic growth and only modest tuition inflation, the burden of attending Purdue fell markedly, to about 12 percent of income by the early 1960s. Since then, the acceleration of tuition fee increases meant an end to further declines in the burden; it was also about 12 percent in 1990, but has risen by startling amounts in recent years, to 20 percent by 2005 and to about 26 percent by 2012. Attending Purdue has become a greater burden than it was over seven decades earlier in the Great Depression. Purdue is not an atypical institution.



Source: Purdue University, Bureau of Economic Analysis, Author's Calculations

Some writers note a distinction between a rise in tuition *prices* to students and a rise in the total *cost* of higher education to society. In the past decade, for example, tuition prices paid by students have risen far more than the increase in total higher education costs per student. Others note that because of tuition fee discounts, the true increase in college prices even to students is often less than portrayed by official statistics. While both of these claims have some validity, the reality is, however measured, the cost or price of higher education is far higher today than it was a generation or two ago.

Interestingly, even college room and board fees have risen faster than inflation in food or housing prices, as Figure 2 shows. This suggests one or more of three things: the quality of college housing and food is improving relative to that for the general population, colleges are inefficient in providing housing and food services, or they are using their monopoly position over students to extort profits from them to fund university programs, meaning they are effectively understating the true extent tuition fees (cost of the instructional services) have increased over time.



Sources: Trends in Higher Education, The College Board; and the Federal Reserve Bank of St. Louis

Second, Why Have Tuition Fees Risen So Much?

A number of scholars, including myself, have written longish books on the reasons tuition fees have risen so much, so today's discussion must merely abridge more complicated and nuanced analysis of that issue. Let me discuss three commonly mentioned explanations of rising tuition fees. One view is that of Professor William Baumol and others who have noted that higher education is a service industry, and that teaching is inherently a labor-intensive activity where costs cannot easily be reduced by substituting capital equipment for labor, unlike in manufacturing, agriculture or construction. Teachers are like actors; it takes as many actors to perform King Lear as when Shakespeare wrote it 400 years ago; similarly, college professors teach much like Socrates did 2,400 years ago.

While there is some truth to this argument, its importance is often overstated. In a typical university today, faculty salaries are rarely more than 40 percent of total spending –far more dollars are spent on non-instructional items than on faculty salaries. Moreover, even a good bit of faculty salaries go to support non-teaching activities, such as low teaching loads that allow for research. Those teaching loads on average have declined over time. Moreover, new technologies allow professors to transcend the barriers imposed by distance and limited hearing capacity, and allow us to replicate at very low cost time and time again lectures using electronic means. On Monday I lectured from Athens, Ohio to a Georgetown University class in Qatar and I think I was nearly as effective as if I had lectured in person, but as a small fraction of the cost. In short, teaching is susceptible to substituting capital for labor.

A second argument is that the tuition price explosion reflects a sharp decline in state government appropriations for universities. Again, there is an element of truth to the assertion, but it a grossly exaggerated claim. In real inflation-adjusted terms, state appropriations for universities are generally higher than they were a generation ago, Because of enrollment increases, in many states those appropriations are relatively flat on a per student inflation-adjusted basis. However, the real culprit forcing tuition up is not falling state appropriations as much as it is increasing total university expenditures per student. To be sure, from 2008 to 2011, there were significant reductions in real state spending per student as a result of the recession and sluggish recovery. But tuition fees have generally risen faster than the inflation rate even in periods when state appropriations were rising. And it is noteworthy that tuition fees have risen nearly as much over time at private schools that do not receive state aid.

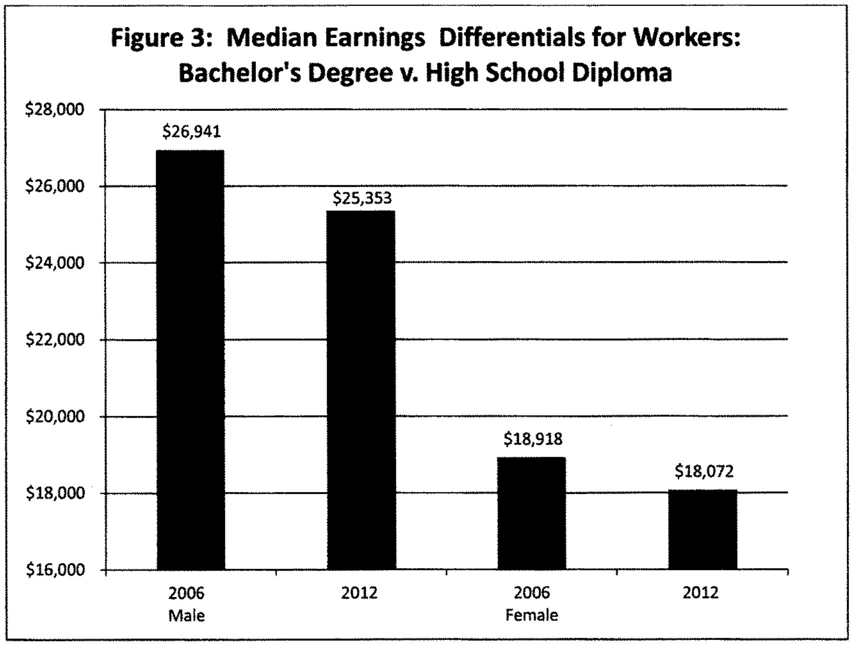
This brings me to what is called the Bennett Hypothesis, named after former Education Secretary William Bennett, who asserted in a 1987 *New York Times* op-ed that colleges take advantage of federal student loan and grant programs, and have raised their fees to capture most of the aid money for themselves. In other words, the students are not the beneficiaries of the aid, but rather the colleges. There has been a lot written on this, and studies have reached different conclusions, but my reading of the evidence is that Bennett is mostly right. Let me show you some generally supportive evidence. Look at Table 1. In the era when the federal presence in financing higher education was mostly modest, such as the 1940s, 1950s, and 1960s, tuition price inflation was about one-third as great as it has been in the era of significant and rapidly growing federal student financial assistance programs, The federal financial assistance programs, in my judgment, have increased the demand for higher education more than the supply, leading to higher prices. Indeed, a very good case can be made that federal student loans have fueled an academic arms race financed in large part by rising tuition fees, an arms race that has led to a proliferation in higher education bureaucracies, expensive recreational facilities, lower teaching loads that have funded largely unread esoteric research, bigger subsidies of intercollegiate athletics, and other spending unrelated to promoting the core university mission of disseminating and expanding our stock of knowledge and cultural capital. Without massive federal aid programs, I doubt we would have so many million dollar university presidents.

I also believe the overexpansion of federal financial assistance programs have contributed to a number of other problems, such as the current massive underemployment of recent college graduates and the decrease in academic quality in our schools. A recent Pew Research Center study suggests the savings and net worth of those with student loan debts is strikingly lower than those without such obligations. Even worse, the proportion of recent college graduates from lower income backgrounds is lower today than it was in 1970 –before we even had Pell Grants and loan programs were in their infancy. Federal Reserve Bank of New York data suggest that, in a very real sense, the delinquency rate today on federal student loans is around 30 percent, nearly double the figure commonly cited. This all suggests that a very good case can be made that universities in America today on balance contribute to income inequality and a growing distance between individuals of difference economic circumstance. If you believe that reducing income inequality should be a major American goal, on balance you should favor programs that would reduce, not increase, federal involvement in higher education.

Summing up, our federal financial aid programs have, in my judgment been colossal failures –raising costs, reducing access and quality, and leading to overinvestment of federal resources in higher education. They need radical revision.

Third, The Tipping Point: What Should We Do to Avert Disaster?

The cost of college cannot rise faster than people's income forever. That is simply unsustainable. The evidence is the benefits of going to college are falling, while the costs are rising. As to the benefits falling, look at Figure 3, which, using data from the Census Bureau, depicts for both male and female workers over 25 years of ago the median earnings differential (in 2012 dollars) between high school graduates and holders of bachelor's degrees, for two years, 2006 and 2012. The absolute annual dollar earnings advantage associated with holding a bachelor's degree declined by $1,598 annually for males, and $846 for females over that six year period, the latest for which we have data. My guess is if the data were confined to graduates from, say, 25 to 29 years of age, the drop in the college earnings advantage would have been even greater because of other evidence that shows that young college graduates have particularly suffered financially in recent years. For example, the unemployment rate among very recent college graduates (those aged 21 to 24) in 2013 was 8.2 percent, higher than the 7.4 percent unemployment rate for the entire labor force. Other labor force data show a sharp increase in modern times in college graduates taking relatively low paying positions such as baristas, retail sales personnel, taxi drivers, and janitors.



Source: U.S. Bureau of the Census, Author's Calculation

If the financial benefits of college are starting to decline, but the costs are continuing to rise, the rate of return on the investment in college is certainly falling, which, in time, should lead to lower enrollment rates. That has already begun. According to the National Student Clearinghouse, total postsecondary enrollments for the spring semester 2014 were down from those a year earlier, extending to three years a trend of spring semester enrollment declines. That is a very unusual occurrence in contemporary America. Related to that is the evidence that, despite massive government subsidies, there are increasing signs that a growing number of weak colleges are in danger of closing or being forced to merge with stronger institutions. Moody's Investors Service has issued increasingly negative assessments of the financial stability of higher education institutions.

The most visible and talked about signs of financial stress arising out of this, however, are a consequence of the roughly $1.2 trillion in student debt obligations. The ratio of debt to income has risen to precariously high levels for some borrowers, and there is even some evidence that burdensome debt obligations are impacting on such things as household formation and home purchases.

Administration and Congressional Initiatives

This brings is to various solutions to the college cost explosion. Let me first talk about some ideas being promoted by the Obama Administration and some Democratic lawmakers, and then some alternative ideas that I think perhaps have merit.

I should start by commenting on the President's ratings plan. Details of the plan are still unknown. As I said in a recent opinion piece, the proposal appears to have both positive and negative aspects. On the plus side, colleges need to face consequences when their performance is shoddy. Too often the federal government has directly or indirectly written checks to colleges or their students without any assessment of performance or results. People are demanding greater accountability for colleges, and the ratings proposal is one way of addressing those concerns.

At the same time, I am very concerned that we are diluting and maybe annihilating one of the great strengths of American higher education –its diversity. We have thousands of universities and colleges of all different sizes, curricular offerings, religious orientations, political leanings and the like. Americans have thrived on this –no single Ministry of Education makes decisions that stifle institutional originality and competition. The ratings system appears a step away from that tradition of no centralized direction. One-size-fits-all sets of criteria determining degrees of excellence or expectations regarding performance are almost certainly inappropriate. I am not against ranking schools—to the contrary, my organization compiles the *Forbes* Best College rankings. I am concerned, however, that politically determined criteria for evaluating schools might hinder rather than expand academic excellence and competition, and do little to improve affordability.

Similarly, the Administration's attempt to impose standards on career colleges is also flawed. The administration is correct on insisting that schools with substandard performance records should face consequences. But the effort to largely limit these performance standards to for-profit institutions is completely inappropriate. If true "gainful employment" standards are to be applied, they should apply as well to all public and private four year institutions with scandalously low graduation rates and high levels of loan default. Our nation has urban universities with less than 10 percent graduation rates that arguably should be closed because of poor performance. Yet the "gainful employment rules" will not apply to them. If federal regulation is to be applied, it should be applied on a level playing field.

Finally, there have been attempts, both by the President and members of this body, to alleviate the burden of those borrowing for student loans. Last year's bipartisan legislation, while imperfect, at least tied student loan interest rates to market conditions, although those conditions are admittedly highly distorted by what I view as irresponsibly expansive Federal Reserve monetary policy. The bill introduced by Senator Elizabeth Warren to lower interest rates on student loans to millions is, in my judgment, fundamentally flawed, for at least six reasons. First, and most important, it is only directed to past borrowers, and does *nothing* to address the future affordability of college and does absolutely nothing to contain college costs.

Second, the Warren proposal punishes those who have responsibly paid back their loans according to the terms of the loan agreement. Conscientious re-payers of loans under the Warren proposal will pay higher interest rates than others, not all of whom have a high level of conscientiousness regarding loan repayment. It is prejudicial against responsible conduct rather than supportive of it. Third, the Warren proposal increases the likelihood of irresponsible lending to students not equipped for college who face a high probability of dropping out. Remember, 40 percent or so of full-time students in four year programs drop out within six years without diplomas. If the Warren bill were to pass, students will likely be told by counselors "if it gets too tough for you to pay off your loan, Congress will likely either forgive the loan or reduce your burden by lowering interest rates." What economists call a moral hazard problem will be worsened.

Fourth, the Warren proposal in effect penalizes those majoring in highly productive fields, such as in the STEM disciplines, as they are far less likely to have large loan repayment issues since they are in occupations that society, through the market process, especially values. One can argue the Warren proposal wishes to subsidize and encourage relatively less productive work rather than work that to a larger extent enhances our material well being. Fifth, the Warren proposal encourages higher college enrollments, at a time when labor market data suggest we are generally overinvested in terms of the educational attainment of new graduates. By one measure, nearly half of American college graduates are holding jobs requiring less than a college education to perform. Sixth, the Warren bill would materially worsen the budget deficit, a deficit that is shamefully large for a nation five years into an economic recovery. We are a nation living beyond its means, and the Warren bill exacerbates that problem. It enhances the probability that debt rating agencies might again downgrade our national debt, or fail to restore our once prized triple A rating.

Long Term Solutions Rather Than Ineffective Short Term Panaceas

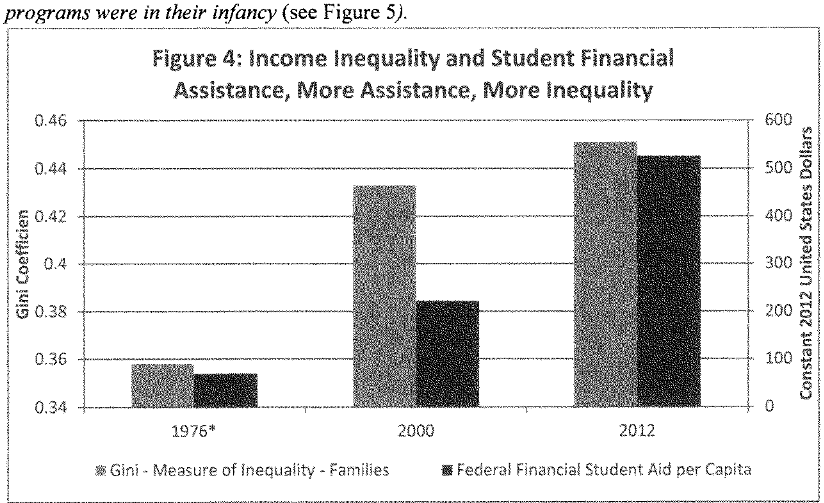
There are rarely painless solutions to difficult issues. That applies here- some people are going to be unhappy with needed changes. But to fundamentally deal with the tuition cost explosion, we need to promote policies that will lead colleges to reduce the growth in tuition fees. The artificial fueling of demand for higher education through excessively exuberant federal student financial assistance policies is a major contributor to funding the wasteful academic arms race. We can humanely cut back on these programs over time without significantly hurting truly low income students –those from households living in poverty or well below the median income level. Indeed, we can increase the *proportion* of funds going to lower income students, which progressive Democrats should like, while reducing overall expenditures, which Republicans should like, in the process reducing the tuition-enhancing features of the federal financial assistance programs. For example, federal tuition tax credits and the PLUS loan program benefit relatively affluent folks. Why don't we eliminate or drastically reduce these programs? As Janet Lorin of Bloomberg recently revealed, a majority of the $62 billion in PLUS loans are not being actively repaid Moreover, the Administration is apparently contemplating relaxing already lax credit standards. I agree with the University of Michigan's Susan Dynarski, who said "I don't understand the logic behind deferral on a PLUS loan."

Indeed, why don't we simplify our Byzantine federal financial assistance system, going to only two federal financial aid programs? Go to a Pell Grant that is a voucher available to truly low income students and given directly to them, not to university financial aid offices, thus empowering the student more. Additionally go to a single loan program available only to those with relatively low incomes, and offered for only, say, four years of schooling.

Also, provide a legal environment which would encourage Income Share Agreements, an equity approach to student financing that would allow private entrepreneurs to buy a portion of the earnings of students in return for assistance in paying for college. Currently, students do the equivalent of selling bonds in themselves –this would allow them to sell the equivalent of stock, and reduce the obligations of the federal government. Several members of Congress, including Senator Marco Rubio and Congressman Tom Petri have indicated interest in such an approach, which is a variant on the Pay Forward scheme proposed in some states.

Rationalize the student financial assistance programs in other ways. Put in some form of performance standards. Drop aid for students whose grades suggest that the probability they will ever graduate is low. Maybe give small bonuses to students who graduate in three years. But above all, require colleges to have some skin in the game –to share in the costs of loan delinquencies when their admission actions lead to unusually poor records in terms of student loan repayment. Incentivize colleges to be careful who they admit and to push their students to graduate. There are other mechanisms, such as the use as national testing, which could be used to facilitate enforcing high performance standards and force schools and students with poor academic records to face adverse financial consequences. This approach deserves some consideration in any thoughtful revision of federal financing policies.

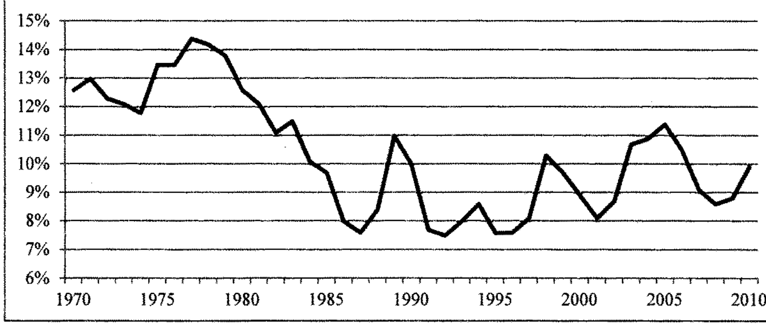
Those of you on the left that are worried about excessive accumulations of wealth and privileges, you are making a big mistake in pushing federal financial aid policies that have been historically associated with reductions, not improvements, in income equality. As Figure 4 shows, the rise in federal student financial assistance programs has moved in tandem with rises in measured income inequality. If you want to demonstrate your progressive egalitarian bona fides, do something different. For example, propose removing tax exemptions for schools with very high endowment accumulations, say more than $300,000 a student. You might want to propose outlawing legacy admission preferences to reduce the perpetuation of academic aristocracies. Use the federal tax exemption powers you have more aggressively and judiciously. Outlaw stadium skybox tax subsidies, indeed tax subsidies for anything not strictly academic, including housing and food facilities. Limit all federal student loans and grants to, say, $8,000 a year and cripple the ability of expensive schools which are largely enclaves for affluent students to raise tuition fees thinking they will be easily financed by greater loans. You want to help the poor? I repeat: *a smaller percentage of recent college today are from the bottom quartile of the income distribution than in 1970 –before the Pell Grant existed, and when college loan programs were in their infancy* (see Figure 5).



***1976 Data for federal student aid per capita reflect author's estimate**

Source: U.S. Bureau of the Census, College Board *Trends in Higher Education*: Financial data are constant 2012 dollars, author's calculations.

Figure 5: Bottom Quartile by Family Income: Share of Bachelor's Degrees Earned by Age 24



Source: Postsecondary Education Opportunity; U.S. Bureau of the Census

There are other things you could do that might be useful. Give students and parents better post-graduate information on students by requiring the IRS to provide aggregate data on earnings of students graduating, say, five years earlier from every college or university participating in federal loan and grant programs. Regardless of what university administrators tell you, the key item of interest to most students is their likely post-graduate earnings prospects. I could expand on these and other ideas. The point is that the solution is not to do more of what we have done in the past, like making loan programs more attractive. The solution lies in changing the environment that incentives colleges and universities to raise their fees to students.

This brief survey of higher education ignores many areas of potential cost saving, and understates some serious problems. I have said little or nothing about MOOCs (massively open on-line courses), about the serious underutilization of student, faculty and physical resources, about the worrisome decline in academic standards, the reduction in intellectual diversity arising from attempts by some in the academy to enforce academic uniformity, about curbing the massive increase in university administrative personnel, about the negative effects on innovation and competition of our accreditation system, and so forth. Those are topics for another day and venue.

Conclusions

Let me leave you on a moderately optimistic note. If you were to do absolutely nothing, I think market forces, muted as they have been by the distortive effect of government subsidies, would nonetheless work in the near future to lower sharply future tuition increases. Enrollments are stagnant and many schools are desperate for students. New forms of innovative competition will eat into the market of traditional high cost schools. Fighting for survival, schools will be forced to be more innovative, more affordable, and better performing. Creative destruction or disruptive innovation has worked brilliantly in developing a vibrant competitive market economy that has made us the most prosperous of all large nations. It can work in higher education as well –if we give it a chance.

Chairman MURRAY. Thank you very much. I really appreciate all of our witnesses today.

For your information, there is a lot of attendance today, obviously a discussion that many people are interested in. We do have a series of four votes beginning in about a half-hour, so I am going to be very strict with the time clock today and allowing 5 minutes to each Senator, and we will be calling on people in order of arrival.

So, with that, Ms. Jones, I wanted to start with you, and thank you for sharing your story and being here today to testify. Your story really resonates with me. All of my brothers and sisters and I went to college on Pell grants and student loans to finance our education, and I taught young children early on in my career, which is what got me into politics. But the financial burden of student loan debt is considerably more than when I graduated, so I share your understanding and appreciate your being here.

In your testimony, you said that you paid over $600 a month to cover your Federal student loans. How much was your monthly take-home pay at that time?

Ms. JONES. At that time my monthly take-home was roughly $1,500.

Chairman MURRAY. Okay. And do you have any money saved?

Ms. JONES. I do not. I have been using my savings to pay back the loans that I have taken out for my undergraduate degree.

Chairman MURRAY. When you ran into difficulty repaying all of your loans, did your servicer offer any alternative repayment plan, like the income-based repayment option?

Ms. JONES. They did not. I did not learn of the program until very recently, and I believe had I been offered that program, my payments would have been roughly $150 a month as opposed to the $600 a month I was paying.

Chairman MURRAY. So if you had been able to take advantage of the IBR, you would have reduced that payment to $150?

Ms. JONES. Yes.

Chairman MURRAY. Do you know how much you would save if you had been allowed to refinance your student loan?

Ms. JONES. Over 10 years, I would have been able to save more than $4,000.

Chairman MURRAY. More than $4,000. How would that have impacted your life?

Ms. JONES. Well, as educators, you know, we always have to buy materials for the classroom because funding is limited, so I think having the extra funding available would make life easier. Definitely I would be able to save for the future, and I would be able to plan for retirement as opposed to wondering if it will be possible.

Chairman MURRAY. So I have to speculate that if you had known about IBR, you would be in a much better place today. But nobody told you.

Mr. Chopra, thank you for being here as well. You have worked directly with a lot of student loan borrowers, and your reports have talked about some of the macroeconomic consequences. But let me ask you, have you encountered a lot of stories like Brittany's?

Mr. CHOPRA. Yes. One of the top issues that a borrower has identified is difficulties repaying, restructuring, and rolling in loan modification programs and staying current to avoid delinquency and default.

Chairman MURRAY. So our servicers are not reaching out and helping young people, or even adults, learn what their options are today?

Mr. CHOPRA. Well, we learned a very painful lesson in the years around the financial crisis and the mortgage servicing market. There is some fundamental incentive misalignment where what may be good for the loan owner or the investor and what may be good for the borrower is not actually the outcome. And market forces, due to modern structured finance, can often cause terrible outcomes for everybody.

Chairman MURRAY. I have heard from a lot of people today who are paying back loans that they do not know how much they owe; they are having trouble getting that information; they do not get yearly statements. Brittany is nodding her head. Is that something that you hear a lot as well?

Mr. CHOPRA. Well, I think it is not actually just not knowing about it. It is also—we hear from many borrowers, and we see it in the data, that a number of borrowers are reaching out and are seeking help, but are often told to choose forbearance. You know, we have continued to hear complaints from servicemembers and military families that they call about their Servicemembers Civil Relief Act benefits and are simply told, "Well, you know, you just do a military forbearance." That option will keep interest accruing. It will make the debt burden harder. But it is certainly easier for the servicer to accomplish rather than actually walking them through the steps to enroll in their legal entitled benefits.

Chairman MURRAY. So it is hard for them to get good information personally about what they should be doing. Okay. I have about 50 seconds left. Tell me, in the last 50 seconds, some of the larger implications for our economy.

Mr. CHOPRA. Well, in our discussions with the banking industry, particularly the housing industry, there is general concern about increasing debt-to-income ratios. So while the advantages of going to college, the differential between college graduates and non-graduates, is growing, most of that is growing because non-college graduates' wages are slipping. So if college graduates' wages are still much higher but generally flat when controlling for inflation, but debt, which is growing actually even faster than tuition costs, that means that less ability to create new credit, whether it be for mortgages or to use those funds for other productive purposes.

Chairman MURRAY. Okay. Thank you, and my time is out.

Senator Johnson?

Senator JOHNSON. Ms. Jones, first of all, thanks for coming to testify, and to all the witnesses. Did any either high school or college counselor ever go through the calculation of taking on student loan debt and how you would be able to repay it based on the type of profession you were looking at?

Ms. JONES. They did not. Actually, when we started the conversations about college, they simply, you know, let us know you can apply for millions of dollars in scholarships and grants; they are available, you just have to apply for them, and you can talk to your financial aid counselor about the other options for paying for college.

Senator JOHNSON. So did you ever talk to a financial aid counselor that talked about, you know, the ability to repay?

Ms. JONES. Not in the initial stages. They simply were saying you have this much of a balance, you can pay with it using this financial aid package of your subsidized or unsubsidized loans, and you can take them if you want, or you can borrow from your family.

Senator JOHNSON. Do you wish you would have had, like I had, a finance professor kind of talk about—I mean, in other words, if you could go back in time, would you do the same thing over again? Would you incur this much debt? Would you try and figure out maybe a different solution?

Ms. JONES. In my experience and for my profession, a college degree was absolutely necessary. There was not—the option to not get a degree was not available. So I would do it because ultimately my goal is to become a teacher.

Senator JOHNSON. Have you ever heard of the College of the Ozarks? They go by the moniker of "Hard Work U." It is basically a college university set up where all the students work, and it is really set up so that nobody incurs debt. Does that sound like kind of a good idea to you? Would you like—again, to get a college degree, I agree with you, we are all talking about it is a great investment. But if it is a great investment, the amount of loans ought to match it so you ought to be able to handle those when you get all done.

Ms. JONES. It should, and that is why I think being able to refinance the loans that we have would be a great benefit for students like me because the loans made it possible. There was no other funding available to go to school. And, of course, we have to have our degrees to teach.

Senator JOHNSON. Right.

Ms. JONES. You do not want an unqualified teacher in the room, and I do not see myself doing anything else. So whatever it takes to get to a classroom, that is what I will do. But I think we need to look at what we can do to make it possible for everybody to get the degree they want and not the loan debt to go along with it.

Senator JOHNSON. First of all, God bless you for being willing to teach our kids, and, you know, we certainly all wish you the best of luck.

Mr. Chopra, you said that student debt is hampering our economy, hampering entrepreneurship, hampering a lot of good stuff. How would shifting this debt from a select few to all of our kids and grandkids, how would that help our economy, help entrepreneurship? Because that is all we would be doing here, right? Really shifting the debt burden from those that incur the debt to all of our kids and grandkids, because we are already in deficit and we cannot afford it and it is just going to be piling additional debt on our kids and grandkids, correct?

Ms. HOOVER. Well, being able to refinance a loan in other product markets, such as the mortgage market, when broader interest rate environments change, it is common not only for homeowners but also for the corporate sector as well as the Government to be able to match their debt to something that potentially reflects better their own broader interest rates, their credit profile—

Senator JOHNSON. Let me interrupt. Let me interrupt. Are you supportive of the—I am trying to think what—that act I was talking about, the 2007 act that basically forgives student loan debt after 10 years of working in the public sector? Are you in favor of that?

Mr. CHOPRA. We do not know the results of that yet. Nobody has actually received forgiveness from that program.

Senator JOHNSON. But, again, forgiveness will come on the backs of the American taxpayer or additional debt burden on our kids and grandkids, correct?

Mr. CHOPRA. Well, that is Congress' decision about how to allocate—

Senator JOHNSON. I understand. I am just asking, are you supportive of that program? And, again, I am going to your comment. How does that not hamper our economy, not hamper entrepreneurship, if we shift the debt burden from a select few to all of our kids and grandkids? I am just trying to point out what is actually happening here.

Mr. CHOPRA. Well, the distribution of the debt burden, it will come in multiple different sectors, but I think the marginal propensity to consume for young people who are at prime ages of homeownership, who are at prime ages of purchases of durable goods, this is something that is of great worry to the financial sector, to a number of other industries—

Senator JOHNSON. But our debt burden is not—so there may be higher propensity to spend in some sectors, but there will be a lower propensity because of the debt burden.

Let me ask you, are you disturbed about the Politico and the Wall Street Journal stories I was reading about, how the law school graduate schools are gaming that program? Does that concern you? Because it sure concerns me.

Mr. CHOPRA. As we saw in the run-up to the financial crisis, the incentive misalignment between those who broker loans or offer loans and their alignment with investors or others can lead to very disastrous consequences. I do not know the specifics of the schools that you mentioned, but aligning incentives between schools, between financial services providers, and others is critical to ensure that market outcomes are efficient.

Senator JOHNSON. Okay. Thank you.

Thank you, Madam Chair.

Chairman MURRAY. Thank you.

Senator Whitehouse?

Senator WHITEHOUSE. Thanks very much, Chairman.

One of the noteworthy things about student loans—and they stand out from virtually all other debt in this respect—is that somebody wangled a provision into the Bankruptcy Reform Act years ago, a somebody who has left no fingerprints on the amendment—I think it was actually snuck in in conference—and to this day nobody takes credit for it. But it snuck in and became the law of the land, and it provides that student loan debt is not dischargeable in bankruptcy. Bankruptcy is provided for in the Constitution. It is one of the sort of elemental principles of American entrepreneurship and success, that you have the ability to fail, to pick yourself up and get back in there and do it again. And virtually every type of debt is dischargeable in bankruptcy except student loan debt.

Mr. Chopra, is there an economic justification for bankruptcy debt being treated differently than any other kind of debt in that respect? Or was that more in the nature of an unexpected blessing to the then largely privately held student loan industry?

Mr. CHOPRA. Well, pursuant to a report that was required by Congress for CFPB and the Department of Education to publish, we analyzed data related to student loan originations, particularly private student loans, throughout the past 15 years or so. And the 2005 change in the Bankruptcy Code, one would anticipate that in an ordinary marketplace prices would come down as Bankruptcy Codes become more strict. But, in fact, we saw that prices actually went up, and this suggests that broader capital markets' conditions may be larger contributors to pricing in some of these markets. And it also suggests that as a general matter the Bankruptcy Code is operating in a very different way in the student loan market as it compares to other consumer financial product markets.

Senator WHITEHOUSE. We have had representatives from the private student loan industry come in and testify that it would be wrong to unwind this stealth provision that was snuck in the dark into this provision because it would upset the settled expectations of the loan industry, which is—I mean, Congress is a hall of irony from time to time, but it is particularly ironic that an industry that snuck this in in the middle of the night, upsetting every settled expectation of borrowers as to how their loans would be treated, now try to defend themselves by the rule of settled expectations. I hope that this is an issue that we can address, because I do not believe that there is any rational distinction between student loan debt and other kinds of debt.

Ms. Jones, thank you for your testimony. You have been a terrific witness that has brought a real dose of reality to this hearing. How has your student loan debt affected other personal decisions in your life, like to own a home, to have a family? How has that burden of debt changed what you might do with your life?

Ms. JONES. I have this conversation with my mother a lot, because she has now asked maybe 15 times why is it that I am still pursuing the education field. Actually to pay for some of my college education, she borrowed against her own retirement so that I could, in fact, become the teacher I want to be. And the decision to stick with education was driven because of the desire to want to see the future generations have the same chances we had.

I will say the decisions to take out more student loans made going back to school a hard decision to make, as referenced in my testimony. I could not justify using more of my mom's retirement even just to pay for the master's.

Senator WHITEHOUSE. And what has it done to your likelihood of owning a home?

Ms. JONES. Well, considering I do not have any funds right now for a downpayment, that has been put off for a few years. But hopefully in the future I can work something out or we can work something out with the refinance bill so that I can start saving again.

Senator WHITEHOUSE. Thank you, Ms. Jones.

Thank you, Chairman.

Chairman MURRAY. Senator Ayotte.

Senator AYOTTE. I want to thank the Chair.

I wanted to just ask, Mr. Chopra, do we know—do we have an estimate by the administration yet as to how many student loan borrowers would actually take up the potential option to refinance their pre-July 2013 student loans? And so do we have a sense of what numbers we are talking about? And, also, do we have an estimate of what that will cost? I just think it is important so we understand given the challenges we are facing as a Nation as we look at this piece of legislation. Do we know what those numbers are yet?

Mr. CHOPRA. Senator, the CFPB is actually an independent agency, not part of the administration, so I do not have that type of analysis available. What I can say is that we do know from our experience in various mortgage financing programs that the economic impact of individual mortgage refinancings, according to a study by the Department of Housing and Urban Development, led to approximately $25,000 of economic impact per homeowner who was able to refinance.

Now, that being said, a mortgage is a much larger loan, but then, again, a younger person with student debt may have a higher likelihood to be in prime age for certain purchases. But, again, I cannot speak to that.

Senator AYOTTE. Yes, I mean, what I am just trying to get at are the basics. How much more are we going to add to the debt? How much more is this going to cost? I mean, we ask this important question about every piece of legislation because it is basic information.

Dr. Vedder, perhaps with your background, let us start with 100 percent of borrowers. And we do not know that 100 percent of borrowers will adopt this, and certainly there will be some ratio to that effect. But if 100 percent of borrowers were to refinance their pre-July 1, 2013, loans, or a large percentage, what kind of impact—do we have any numbers that we can think about here?

Mr. VEDDER. I have not personally done any estimation of that. However, you can do—the math suggests the numbers could be very large. We have, what, 40 million borrowers, not all of them prior to 2013, but most of them. So you have close to 40 million borrowers borrowing on average $25,000 or $30,000. So you are talking over $1 trillion.

Just say for the heck of it you lowered interest rates 2 percentage points on $1 trillion, that is $20 billion a year. That is real money. It is probably less than that.

I have seen one estimate of the deficit effects measured in the tens of billions of dollars over a long period of time. So I think it is a consequential amount of money.

Senator AYOTTE. I think it is an important piece of information that I would hope we would have.

Mr. Chopra, I wanted to ask you about this issue that Dr. Vedder raised because I think it is a very important issue. In fact, it is an issue that I hear from parents and students. We are going to get to a point where if the rate of increase of what it costs to get a college education keeps going up at that rate, no matter what we invest, the Federal Government, if we are thinking that we are going to be able to help, you know, the debt burden of someone like Ms. Jones, then if it is going up higher than—you know, I do not know. It may not be going up higher than health care, but, you know, this is a big issue in terms of how high it is going. How do we get at that issue? And if we are going to with our investment, how do we get to more accountability for these institutions to actually have to really be market-based, think innovatively, and deliver quality education at a more reasonable price? Because to me this is a big issue that is going to just hit us all no matter what we do here.

Mr. CHOPRA. Senator Ayotte, I completely agree. The rise in college costs is an American tragedy, and we should do everything we can to make sure that those people who are going to college this fall, the class of 2018, the class of 2019, that they do not incur a lot of debt. But we cannot ignore the class of 2008 and the class of 2009 who graduated almost by no fault of their own when they were—started as freshmen in 2004, they could not probably imagine that they would graduate into a financial crisis. And that is something that we have to work on both ends, and it is not just looking at one of those issues but both.

Senator AYOTTE. Well, I appreciate that. But obviously we are going to look back on all of pre-July 1, 2013, loans as a large number of people, and it seems to me I would like to take that—have you answer that question for the record. We are investing already—regardless of what we do in legislation—a lot to help students in this country get a good education. And I would like to know what your thoughts are on how we hold these institutions more accountable, how we force them to actually make—

Chairman MURRAY. Senator Ayotte, we have a lot of Senators and votes coming, so I will have him answer for the record.

Senator AYOTTE. I appreciate that. Thank you.

Chairman MURRAY. Senator Baldwin.

Senator BALDWIN. Thank you, Chair Murray and Senator Johnson. I appreciate both of you for hosting this hearing on such a critical issue.

The statistics are staggering nationally with $1.2 trillion in student debt. I look at the statistics for my home State of Wisconsin: 70 percent of students in Wisconsin are graduating with an average today of $28,000 in debt. And these numbers I think starkly demonstrate that there is a student loan debt crisis facing our Nation.

Again, in Wisconsin, individuals with a bachelor's degree report making average monthly payments of about $350; graduate and professional degrees are making average monthly payments on their student loans of $448. And that is just an average figure. Obviously it varies below and above.

The length of student loan debt obligations was nearly 19 years for persons with bachelor's degrees and over 22 years for persons with professional degrees. And as we have heard through your testimony and the questions so far, this fact, these statistics are underscored by millions of personal stories and anecdotes, and they affect personal decisions, as I have heard testimony in roundtables that I have held in Wisconsin on this issue, people literally deciding whether and when to start a family because of the impact of this debt, the career decisions that Ms. Jones has talked about. You know, there are a lot of folks who are getting a higher education because they want to teach or because they want to do public service or work for a nonprofit or a community-based service organization. And yet the level of debt constrains their career decisions and career choices.

And then financial decisions, we have heard a little bit of testimony and discussion on that. You know, you get out of college and start a business or put that off. Do you get out of college and do you rent? Do you buy? Do you move back home with your parents? I have heard a lot of people facing those choices in their late 20s, early 30s. Do you buy a used car? Do you buy a new car? All of those have rippled effects throughout our entire economy.

And so I am glad, Ms. Jones, that you have been talking about it in, you know, your own—sharing your own story, and so many have stepped forward to do that, because this is a crisis we need to confront.

I have in my very limited time just sort of two questions I wanted to pose to Mr. Chopra about a couple of realities in our current law on student aid. I have heard from a number of students who have to hold down part-time work, sometimes almost full-time work, while studying. And they are hit with something that is known commonly as "the work penalty" because their incomes may exceed the income protection allowance that is part of the eligibility calculation for Federal financial aid under the Higher Education Act.

I am working on legislation that deals with this work penalty, that would raise the income protection allowance, but I wonder if you can speak to the importance of the availability of financial aid to working students.

Mr. CHOPRA. Well, there is no question that an enormous number of people return to higher education after being displaced from the labor force in the Great Recession and took on part-time jobs to support their families, and that is something we would be happy to discuss with you further.

Senator BALDWIN. Okay. Well, I certainly know that that has been a reality in my home State, and many of the factories that were closed, you know, there were not a supply of a jobs without significant retraining. So we have heard a lot about that.

The other thing I wanted to follow up on is the work you have done regarding servicers, you know, anything from simply failing to provide quality customer service to ignoring some of the legal obligations around notice and payment options and fees to certain borrowers. I have heard from people in Wisconsin about the challenges about getting quality information and the frustrations and the additional costs that come along with simply trying to pay back what they owe.

A constituent from Marshfield wrote me recently about loans she took out for her daughter's education and believed that she had finished paying it off years ago, only to find out of the blue that there were claims that she still owed money.

I am wondering if you can speak to how stronger requirements for student loan servicers like the ones—could give students valuable information?

Mr. CHOPRA. Well, as I mentioned earlier, we learned a valuable lesson from the breakdowns in the mortgage servicing market. But I would also add we have learned as financial regulators from the past 10 years another very important lesson. In 2004, the Student Loan Marketing Association was privatized and operated as a private company for the past 10 years. It has since restructured and is a different entity. But despite the significant public benefits and subsidies that the successor corporation received, Sallie Mae was ordered in 2008 to stop breaking multiple laws. They continued to break those laws—

Chairman MURRAY. Mr. Chopra, I am going to have to move on. We have got a lot of Senators who are waiting to ask questions, and votes are going to be called shortly. So if we could get an answer in writing on that, I would really appreciate it.

Chairman MURRAY. I want to thank both Senator Warner and Senator Kaine for helping us get a witness from Virginia today, and I know that you both have questions, but we are going to go to—we still have Senators Merkley, Stabenow, Kaine, Warner, King, and Wyden, and a vote is going to be called shortly. So if any members want to go vote and come back, we will keep going as the votes are called. But we will go to Senator Merkley now.

Senator MERKLEY. Thank you very much, Madam Chair.

Mr. Chopra, one of the statistics that I find very interesting is that, in comparison to Germany, a year of college in Germany costs 4.3 percent of the country's median income. Here it is 51 percent of the country's median income. How does that affect kind of the aspirations of students in those two nations?

Mr. CHOPRA. Well, you know, the lack of affordability of college may not only impact the students themselves, but it also might impact the broader family balance sheet.

As we saw, the rise in student loan debt was not only because college was increasing in cost, it was also because students themselves are bearing a larger share of total college costs compared to their parents or other sources. That means that because people had less equity, they had less savings, they dealt with unemployment themselves, those costs got shifted to students, so it may actually impact not only the student but the family's aspirations themselves about how they will prosper economically over the long term.

Senator MERKLEY. Does this reflect kind of a philosophical issue over whether education is a public good that not only benefits individual children but strengthens society as a whole?

Mr. CHOPRA. Well, I am not a philosopher, but I believe—I get your point there, that the positive externalities of a more educated population benefits all of us. There is some empirical literature to suggest that. But at the same time, we need to make sure that people are completing, people are able to repay their student debt and their student debt does not displace other productive spending.

Senator MERKLEY. Let me put it a different way. If colleagues of Ms. Jones are looking at the challenge of debt and are deciding, "I cannot pursue a path where I have the possibility of a millstone, a debt equal to a home mortgage, a millstone of debt around my neck pulling me down because of the consequences of the struggle that is seen," that not only impacts the individual, but doesn't that impact the future prosperity of our entire society if folks in our own generation, in our student generation do not reach the fullness of their potential and their contribution back to the economy?

Mr. CHOPRA. Yes, I think behind all the facts and statistics is a broader question about, you know, the American tradition of entrepreneurialism and risk taking, and, unfortunately, too many people feel that they cannot take those risks; they cannot start that small business out of their garage; they cannot start a family. And that is something we should think about.

Senator MERKLEY. Well, let us think about how this amplifies, if you will, the inequality of wealth. If our students are unable to begin purchasing a home early in their life and, therefore—and homeownership is the major builder of personal family wealth for working Americans, doesn't that amplify the inequality of wealth in our society?

Mr. CHOPRA. Well, as I note in my testimony, there is a large gap in certain simulations of graduates who do have student debt and those who do not in terms of what those final outcomes might be for their retirement balances. So traditionally younger workers have been able to stash cash away for a home downpayment or saving for retirement, but if they are not able to make those early contributions, they lose those compounding effects. And so student debt, if it is soaks up some of that ability to invest and save, the long-term repercussions could be real.

Senator MERKLEY. May amplify the inequality in wealth. Thank you. I just wanted to make that point.

The thing that I am most concerned about is the impact on aspirations. I live in a working-class community. My children go to the same public high school that I went to. And what I am hearing is a feeling among high school students that there is not a path in which they have an opportunity to thrive, that is, to pursue their potential, which then affects actually their behavior in high school as to whether or not they are going to—how hard they are going to work to make that path possible.

My concern here is that this is the heart of the American dream, that there is a full opportunity to thrive for every American, whether they are the child of a mechanic or the child of a janitor or the child of a CEO. Given this huge hurdle of college debt, is that really compromising that vision?

Mr. CHOPRA. I mean, the change in aspirations from the stories that we are constantly submitting to the public record illustrate many of the themes you just discussed.

Senator MERKLEY. Ms. Jones, would you like to comment on that?

Chairman MURRAY. And I am going to have to interrupt because we do have votes occurring right now, and we will let you answer that for the record. But I appreciate the question.

Chairman MURRAY. The Senators next to be recognized are in this order: Stabenow, Kaine, Warner, King, and Wyden will be returning. I am going to go vote and come back. I would suggest anybody who is on the end of that list go with me and come back, and we will continue this through the votes.

Senator Stabenow?

Senator STABENOW. Thank you very much, Madam Chair, for hosting this critically important hearing.

First, Ms. Jones, thank you for working hard and sticking in there and doing what is right, what everybody says, to work hard. And like most people, most of us when I was school, I did not have the capacity to turn to my parents and say, hey, can I borrow $20,000 or $30,000 or $5,000, or whatever it was. So most people are not in a situation where they have a lot of other options, I assume. And from what you are saying, you would be in the situation that I was. Fortunately for me, in the 1970s, we did a whole lot more on scholarships. I would not have gone to college. I was fortunate to get a bachelor's and master's, but top of my little 93-person graduating class in Clare, Michigan, my dad was very sick, we did not have a lot of money, and I qualified for a tuition-free scholarship for 4 years, and that got me to college. We do not have those anymore.

When I look at the numbers, you know, unfortunately, the State of Michigan now is one of the highest in the country at cutting higher education, over 32 percent of the funding to universities and community colleges.

Interestingly, the public universities have not increased tuition by that same 32 percent. Now, they have increased it about 19 percent, and that is more than we certainly would like to see. But they are taking significant cuts.

What I find interesting is that the for-profit universities actually have increased their tuition twice as much as public universities. Twice as much. And 57 percent of the for-profit school grads are coming out with $30,000 or more in debt—57 percent rather than 12 percent of public schools.

So there are a lot of things involved in this, all of which we need to be looking at. But I do not think that we should say that in the meantime students should not have the same opportunity that all the rest of us have had when we want to finance a house, which is to get the lowest interest rates that are out there today. And I do also want to say before asking questions that the good news for this refinancing bill, unlike other things that Congress has done over the years—the bank bailout, all kinds of other things--you know, this is paid for. That is the good news on this one. So this is not adding to the deficit. What we are proposing is actually to ask everybody to chip in, pay their fair share to grow the economy and create a fair shot for everybody. So it is fully paid for.

Dr. Vedder, I just have to say—I have to turn to you and say I am so very surprised at your testimony in terms of saying that we should reduce the Federal role and that we have too many graduates in our economy. Wow. I have to tell you, in Michigan, for Michigan, the Georgetown Center on Education and the Workforce has said there is going to be—out of the 1.5 million jobs expected to be created in Michigan alone in the next 6 years, a million of the million and a half will take education beyond high school.

When I look at the National Association of Manufacturers who say there are 600,000 jobs available right now that we cannot match up skills, not all those are 4-year, maybe 2-year, in terms of community college, but when we look at the need on STEM, on science and technology and engineering and match, and where we are going as an economy and so on, I am amazed that you think that we have too many graduates going into our economy. And I wonder if you might speak about that.

Mr. VEDDER. Certainly. If you look at the Bureau of Labor Statistics data, of people who are working with college degrees in the United States today, nearly half of them are in jobs that the BLS at least has characterized as jobs that do not require 4-year degrees.

Now, that statistic has to be taken with a little bit of a grain of salt. I am the first to admit there are judgment calls of what is and what is not. The unemployment rate among college graduates 21 to 24, just right out of college, last year was above the overall U.S. unemployment rate.

Ms. Jones' story, which I think is a compelling story, is a story of someone who has worked hard and so forth, but she is making $10 an hour or $13 an hour. And this goes back to actually Senator Wyden's great bill that wants to bring more information to the students before they make these wrong decisions. I think there is a huge information problem here. I see we are out of time—

Senator STABENOW. Yes.

Mr. VEDDER. Although I do not know who is running the hearing now, so maybe we are not out of time.

Senator STABENOW. I think Senator Wyden is.

[Laughter.]

Senator STABENOW. Let me just say in conclusion that I do not hear anywhere from any business or anybody that I work with right now that we need less education for folks. But thank you again, Ms. Jones, and we are going to do everything we can to give you a fair shot to lower those costs so you can actually buy a house.

Senator WYDEN. [Presiding.] Senator Kaine.

Senator KAINE. Thank you, Senator Wyden, and thanks to the Committee members.

Ms. Jones, as a Richmond resident like you, I really appreciate your testimony, and let me just read for the record again something you read, but I do not want it to pass unnoticed: "Student loan debt has been the driving force of my decisions for the last 8 years of my life, and according to my current repayment plan, it is projected to be for the next 25 years of my life well into the years for which I would be planning for retirement." That is a powerful statement. That is a powerful statement.

I would like to be a student in your class because somebody who wants to be a teacher as much as you do, somebody who has been willing to take on your shoulders that much debt and still fight to achieve your dream of being a teacher, somebody who is willing to move halfway across the country to get a master's degree, you are going to be—I know you are and are going to be one fantastic teacher. So I thank you for your commitment.

I really want to focus on the cost of this equation, as Dr. Vedder did, bringing down the cost of higher education. I support so many of the issues on loans, the ability to refinance a student loan, but I really am focused on these cost issues. And I think we probably have done a disservice to students and their families by not laying out in a more clear fashion as a public policy matter lower-cost ways to get the kinds of skills or degrees that you need to succeed.

So, for example, one kind of skill you can get is not a college degree but a license or a professional credential. The Georgetown Workforce Center says that 27 percent of young workers with licenses or certificates earn more than those with bachelor's degrees. It is not that you do not get education after high school, but sometimes the right education is an American Welding Society certificate—my dad was a welder—a Cisco Systems Administrator certificate. I do not think we coach and counsel our young people that there are ways to get the credentials to enable you to work that are not the same as higher education degrees. And most of our financial aid policies, you know, you cannot use, for example, military tuition assistance benefits, $4,500 a year to active-duty military, for college or community college courses, you cannot use those benefits to pay a $300 certification exam. It is foolish.

Second, we have dual enrollment possibilities for students, and more and more States are embracing the notion that students while they are in high school should be able to get dual enrollment credits. You cannot use Pell grant credits, you cannot use the current Pell grant program to pay for college credits that you can obtain for a really cheap cost in high school with dual enrollment. That is a cheaper way to get college credit. I was able to graduate from college in 3 years because of dual enrollment, and it was enormously helpful to my family. My family could not afford the colleges I got into when I first applied, and they had to tell me when everybody else was celebrating their colleges, "You are going to have to go talk your way into someplace late, because everywhere that accepted you is too expensive for us."

But dual enrollment is a way to reduce college costs. AP credits are a way to reduce college costs. Two Plus Two programs, Ms. Jones, you know, a lot of students now today—this was not happening so much for me, but a lot of students now in your shoes are going to J. Sergeant Reynolds for 2 years and then going to VCU. And when they do that, their total cost shrinks. But for them to do that, somebody has had to sit down with them and counsel them about this as a path. You can get a 4-year degree from the same college you did, and it will be 25 or 30 percent cheaper if you start at the local community college.

What this tells me is—I am concerned about debt, but I am probably most concerned about this college cost issue. And I do think there are already a number of pathways for people to get college degrees or the credentials and certificates that will enable them to work. But we have an obligation to provide better information. And we also have an obligation to provide policies that do not discourage or treat as sort of second-class education some of the things like the professional certificates and certifications.

I would like to ask both Mr. Chopra and Dr. Vedder, in terms of the information provision—I know, Dr. Vedder, you have some concerns about the grading system, and I do, too, because I think grades could obscure more than they reveal in terms of quality. But in terms of providing students and parents with information earlier in their lives so they can make decisions, what more can we do at the Federal level using the leverage of the investment we make?

Mr. CHOPRA. Well, one of the things that we have noted is that it is also very difficult to even compute what the cost, true cost of college is for many families. Not only do tuitions change from year to year, but also it is a challenge to project what your monthly payment will be when you take on a certain amount of debt this year.

So just like we saw in the mortgage market, where interest rates might reset or conditions change, people really are rolling the dice. The CFPB has created a number of tools to assist with this, but, of course, there can be more that should be done.

Senator WYDEN. The time of the gentleman has expired.

Our Chair has come back, and, Angus King, you are up.

Senator KING. Thank you, Senator Wyden. Very good testimony. Thanks to all three of you.

It seems to me that one of the things that we have talked about—and, Ms. Jones, you touched on this in your answer to questions from Senator Murray—is that there are programs like the income-based repayment that apparently have a very low uptake rate. Isn't one of the things we should do, regardless of what we do about interest rates or refinancing, to make more information available to borrowers, both at the beginning and at the end of their schooling so they know what these options are? Ms. Jones, that would have helped you dramatically, apparently.

Ms. JONES. It definitely would have helped in the beginning to know instead of—well, to know what I was getting into when I signed my promissory notes. I think at the beginning you are so—you were told, "This is what you need to get through college, and if you use this, then you can deal with it afterwards. But right now, you will not be incurring interest on your subsidized loans, take those first. Then you will take your unsubsidized loans, and we will talk about that more once you take your exit exam and your exit counseling upon graduation." But what I realize is that in doing—even in not knowing, we are losing potentially great teachers. They are walking away from the profession because they cannot afford the education they need.

Senator KING. Right, but there may be options that they have that they do not even know that they would have that would help them stay in the profession, which is absolutely what we want.

Mr. Chopra, what about it? You have worked in this field. There are something like seven different repayment options. How about streamlining those, making it more available, making more information available? Isn't that one thing we ought to do regardless of what else we do here?

Mr. CHOPRA. Yes, simplicity of how to repay your loans I think is a very important goal. I am also struck by—I recently heard from a former employee, a student loan servicer, and they had told me that, you know, they are evaluated partially on how quickly they can get someone off the phone who calls them for help. So that can lead to very quick interactions or being transferred, and you might get the short cut answer rather than the answer that ultimately is better for the owner of the loan, for the borrower, and maybe even the economy more broadly if it avoids default. So addressing those incentives is also a major concern.

Senator KING. I think that is something we really need to look at regardless of what else we do.

Mr. Vedder, I enjoyed your testimony. I will share with you a story that you can use next time.

Mr. VEDDER. Okay.

Senator KING. In a former life, I was a talk-show host, and I interviewed in the late 1970s a financial aid officer at one of our colleges in Maine. And we talked about college tuition and how it goes, and he said an interesting thing. He said, "You know, for the past 40 years, the cost of a good private college has been about the same as a new Ford." In the 1940s, it was $1,000, and it gradually went up in the 1960s to $3,000. But something happened, because a new Ford today is about $20,000, and the cost of a private college education is approaching $60,000.

I think we need to explore, Madam Chair, why that happened, have colleges come and tell us why what they sell has increased two and three times the rate of inflation and what it is they are buying that costs so much that is causing college costs—because we are talking about the financing costs, but the real underlying problem is the cost of the product. And as you pointed out, if tuition had risen at the rate of inflation since 1978, we would not be having this hearing.

Mr. VEDDER. Exactly.

Senator KING. And so we have got to be focusing on that. But I am concerned, and part of it is accountability. But I want to be sure when we talk about accountability and holding schools accountable that we apply standards such as gainful employment and graduation rates and those things, that we do not penalize those institutions that are taking higher risks with lower-income and not-college-experienced students.

Mr. Chopra, would you comment on that?

Mr. CHOPRA. The CFPB is not—we are not exploring that specific regulation. That is the Department of Education. What I can say is, though, aligning the incentives between the schools, whatever loan programs or financial services institution, and the students are important. And we want to examine how we can increase accountability so that outcomes are improved for everybody, regardless of where they come from.

Senator KING. I think we all want to increase accountability. All I am saying is I think we have to be careful how we do it, that we do not inadvertently penalize the very students we want to get into the system by placing requirements that would be—that would disincentive—that is not really a word, that would punish schools that are taking the risks to bring those students—to give those students an education.

Thank you all very much. Thank you, Madam Chair.

Chairman MURRAY. [Presiding.] Thank you very much.

Senator Wyden?

Senator WYDEN. Thank you, Chair Murray, and thank you for your years of passion and commitment to this effort. And it is particularly timely right now. I think we understand that our students are just getting smothered with these costs and these bills. They are up to their eyeballs in debt, and this is having a huge effect on their ability to have the productive life that they would want, and it takes a toll in a myriad array of ways.

Recently, I was making a tour of college campuses in Oregon and talked about a piece of legislation I will describe in a minute, and a young woman came up to me and said, "You know, I owe $50,000, $60,000. What I want to do more than anything else is I want to have a family, and I am not convinced somebody will marry me when I am carrying around those kinds of debts."

And, you know, she teared up, and we talked about various kinds of options. But I think that is pretty representative of what is going on out there. This is taking an enormous toll, in effect putting students and young people in shackles. And it seems to me there are two kind of pieces to the puzzle. The first is we have got to help the students who are underwater, and I appreciated what you and other students have had to say about that, Ms. Jones, and whether it is refinancing, income-based repayments, I am open to a variety of different approaches.

The second is a different kind of issue, and that is, making sure that not only do we get students in the door, but they get more value for their education. And Senator Rubio, Senator Warner, and I have introduced a piece of legislation called "The Student Right to Know Before You Go Act." So for the first time it would be possible for students to get this information in one place and, heaven forbid, when students and families find out about a school that is doing a good job in terms of graduation rates, a lack of needed remedial education which you earn at a school, if a school is doing a good job and another school is not doing a good job, the other school better clean up its act or, you know, heaven forbid, market forces would kick in and that would, in effect, advance the schools that are doing a good job.

My understanding—and I want to start with you on this, Dr. Vedder, but I know all three of you have views on this. To get the kind of data you need to really do this right, it is going to take a piece of legislation, whether it is the bill that Senator Warner, Senator Rubio, and I have or something close to it—and, by the way, other Senators have bills that, you know, for purposes of Government work it is close enough. And I think this is what is needed. Are we going to be able to get the data that we need to really set up this kind of seamless opportunity for students to get more value for their education along the lines of what I have kind of capsulized here this morning?

Mr. VEDDER. Well, Senator, first of all, let me say I am very, very pleased that you have introduced this legislation, and I have written on it publicly on several occasions. It is ironic that the universities that are in the knowledge business are sometimes very reticent about providing knowledge about their own students, what they are learning, what they are earning after they graduate. Of course, the colleges themselves do not often have that information.

The IRS could provide enormously useful information on the earnings of graduates by majors, by institutions, and so forth, in this modern age without violating privacy or anything. Why don't we do that? I mean, we collect all this data. The Social Security Administration has the capacity to provide a lot of information.

If part of the problem is student financial burden, shouldn't the students know at least what is the probability they are going to earn a certain amount of money when they graduate? And so I think information bills are important. I think they are low cost. They are consumer friendly. Markets work better when there is more information around by all parties, and I think the efforts that you and Senator Rubio and Senator Warner and others are making is one of the few positive developments in this area right now.

Senator WYDEN. I want to let Senator Murray have a chance to summarize, because we are going to have a vote in a minute. I am something of a privacy hawk around here. You can see that with the NSA and a whole host of other issues. So we have tried very hard to have significantly stronger privacy protections than you have today under a variety of these programs. And my last request, you know, Ms. Jones, I have followed your good work. We would very much like to work with you and the other students on this so we really get this right, we lock in the privacy that your generation deserves, we deal with the refinancing or repayment or whatever is necessary, and we in particular get the counsel you students who, as I described it, are getting smothered and really facing these problems because there has been so much foot dragging here. And I think now is really the time. And, Chair Murray, again, for all your leadership, my thanks, and I look forward to working with you.

Chairman MURRAY. Well, I want to thank our witnesses for being here today. I really appreciate your input on this. I want to thank all of our members. There was a very high participation rate today I think because this is an issue that is impacting so many families and communities and future economic possibilities for our country. It is one we have got to address. I am looking forward to working with all of you to do that. So, again, thank you.

Thank you to Senator Johnson for filling in today. I gave him an A as a former teacher for how he performed today.

[Laughter.]

Chairman MURRAY. But thank you again to all of our witnesses, and this is a topic that we will continue to have much discussion around. Thank you.

[Whereupon, at 11:30 a.m., the Committee was adjourned.]

Ron Johnson

Submission for the Record
From Senator Ron Johnson
"The Impact of Student Loan Debt on Borrowers and the Economy"
June 4, 2014
Senate Budget Committee

I submit to the record the following two news articles in addition to my statements at the hearing.

Submission 1

From Politico, by Libby A. Nelson, published Aug. 9, 2013

Law schools devise debt-free path to degree

The pitch could be straight from a late-night infomercial: Get a law degree with no money down and don't spend a penny of your own paying the loan back.

But that's the promise that law schools at Georgetown University, New York University, the University of California-Berkeley and other top universities are making to some graduates. If they spend 10 years outside the private sector, the law school will make their loan payments for a decade. Then, starting four years from now, a federal program kicks in to forgive the remaining balance, often more than $100,000.

The schools are exploiting a loophole that could lead to billions of dollars in written-off federal student debt and both education activists and lawmakers want to crack down on the practice. The New America Foundation has warned of an "undeserved bonanza for wealthy lawyers and expensive law schools."

"It lends itself to giving a big windfall to people who don't really need it, as opposed to people who would otherwise be in default," said Rep. Tom Petri (R-Wis.), who has introduced a bill with Rep. Jared Polis (D-Colo.) to overhaul the nation's student loan repayment process.

But many don't expect Congress to address the issue until loan forgiveness begins in 2017, or until lawmakers rewrite the Higher Education Act — whichever comes first.

Top law schools have long helped graduates who choose public service over corporate law repay their loans after graduation. For graduates who went to work in a legal position at a government or nonprofit, schools would help cover loan payments for up to10 years. The idea was to help graduates pay off six-figure debt on a five-figure salary.

But the programs couldn't usually cover students' entire monthly loan payment, which nationally averages more than $1,000. And once the 10 years were up, graduates were on their own to pay the remaining balance.

Then Congress made two changes to student loans that magnified the power of school assistance programs, said Jason Delisle, director of the Federal Education Budget Project at the New America Foundation. Starting in 2006, graduate students could for the first time borrow enough from the federal government to cover the entire cost of their education.

Then, in 2007, Congress created a sweeping public service loan forgiveness program. Borrowers who work for a nonprofit or the government for 10 years and make payments based on their income have their student loan balance canceled when the decade is up.

"You've got an open-ended amount that can be borrowed, and an open-ended amount that can be forgiven," said Delisle, who estimated the average Georgetown Law graduate in the program will walk away from $158,000 in federal debt.

Law schools — which are, after all, filled with lawyers — looked at the new laws and saw an opportunity. Income-based monthly payments are lower than standard payments, so the schools could cover graduates' payments entirely for the first 10 years. The money for law school repayment assistance programs usually comes out of tuition mostly paid with federal student loans; at Berkeley, for example, it's part of the fee that all professional-degree students pay.

The government's loan forgiveness program would do the rest. Without drawing down endowments or draining financial aid accounts, law schools could promise an (eventually) free education for public service students.

And plenty now do: Besides Georgetown, NYU and Berkeley, programs at Washington University in St. Louis, Duke, George Washington University, Columbia University and others tell students they can combine loan forgiveness with school loan assistance programs. "Public interest borrowers," Georgetown promises, "might not pay a single penny on their loans — ever!"

Students are taking them up on the offer. At Georgetown, 350 borrowers are enrolled in the loan-repayment assistance program promising full forgiveness eventually. At Berkeley, there are 263, although some are students who graduated before the loan forgiveness legislation took effect and won't have their entire loan canceled.

The average Georgetown Law graduate has almost $150,000 in debt by commencement. At Berkeley, the average debt at graduation is about $115,000. The income-based payments graduates make for 10 years sometimes barely cover the interest, said Dennis Tominaga, assistant dean of financial aid at the Berkeley law school.

"The amount of debt they've acquired, that could be astounding to some people," Tominaga said. "That's probably the equivalent of a small mortgage in some places."

There's no way of projecting now how many students will fulfill the 10-year public service commitment to get forgiveness. But right now, Tominaga said, it seems that many will: Four years before the first wave of forgiveness hits in 2017, borrowers are being meticulous about collecting and submitting the reams of documentation they will need.

So far, the program has attracted little attention outside law schools. Advocates for income-based student loan repayment, which can be a lifeline for borrowers who are underemployed or in low-paying jobs, have been hesitant to point it out. Even if Congress makes changes if forgiveness proves costly, they're unlikely to apply to borrowers who took out loans while the program was in effect.

Tominaga and other law school administrators say they don't see their programs as taking advantage of a loophole. Their goal is to help their graduates pursue public service without the burden of debt, they say.

The Georgetown loan repayment program is driven by the school's Jesuit mission, said Charles Pruett, an assistant dean. "Dollars could be spent on the front end with scholarships to attract a class, or they could be spent while the students are here to make them happy," he said. "It's a demonstration and a commitment."

Georgetown Law students collectively pay almost $2.5 million per year in loan origination fees alone, Pruett said. And many graduate loans before this year had interest rates of 7.9 percent. Even if the Education Department writes off six-figure debts for a small proportion of the school's graduates, he said he thinks his students in the aggregate are paying in significantly more than they're taking out.

The Education Department did not respond to a request for comment.

"We have some folks out there that are beating a drum that this is sort of a wasteful program," Pruett said. "The question is, in society, do we need to make sure the indigent have representation? I think one of the ways you can do that is making it possible for people to go from quality schools to offer those services."

That's not how the program should be evaluated, said Delisle, who recommends limiting loan forgiveness to $30,000. Financial aid has had to fight for every dollar in an era of tight budgets. The Pell Grant, the bedrock financial aid program for low-income students, faces a deep shortfall after 2015 and has been trimmed back several times in the past two years. That grant provides $5,645 per student per year.

"The federal government is going to spend way more money forgiving the debt of Georgetown law grads than they are sending low-income kids to Georgetown undergrad," Delisle said.

The real test for the program will come in 2017, when the Education Department starts writing off the first borrowers' debts. Tominaga said he hopes lawmakers take a deep look at the data then to examine costs and benefits.

Already, he said, students and graduates are worried the program won't last long.

Submission 2

From The Wall Street Journal, by Josh Mitchell, published April 22, 2014

Student-Debt Forgiveness Plans Skyrocket, Raising Fears Over Costs, Higher Tuition

Some Law Schools Advertise Their Own Plans to Cover Loan Repayments

Government officials are trying to rein in increasingly popular federal programs that forgive some student debt, amid rising concerns over the plans' costs and the possibility they could encourage colleges to push tuition even higher.

Enrollment in the plans—which allow students to rack up big debts and then forgive the unpaid balance after a set period—has surged nearly 40% in just six months, to include at least 1.3 million Americans owing around $72 billion, U.S. Education Department records show.

The popularity of the programs comes as top law schools are now advertising their own plans that offer to cover a graduate's federal loan repayments until outstanding debt is forgiven. The school aid opens the way for free or greatly subsidized degrees at taxpayer expense.

At issue are two federal loan repayment plans created by Congress, originally to help students with big debt loads and to promote work in lower-paying jobs outside the private sector.

The fastest-growing plan, revamped by President Barack Obama in 2011, requires borrowers to pay 10% a year of their discretionary income—annual income above 150% of the poverty level—in monthly installments. Under the plan, the unpaid balances for those working in the public sector or for nonprofits are then forgiven after 10 years.

Private-sector workers also see their debts wiped clean—after a longer period of 20 years—reflecting a government aim to have no one, wherever they work, paying down student debt their entire working life.

An independent study estimates the future cost of the 2011 program, known as Pay As You Earn, could hit $14 billion a year.

The Obama administration has proposed in its latest budget released last month to cap debt eligible for forgiveness at $57,500 per student. There is currently no limit on such debt.

The move reflects concerns in the administration not just about the hit to the government, but over the risk that promising huge debt forgiveness could make borrowers and schools less disciplined about costs. Colleges might charge more than they would otherwise, leading students to borrow more.

Federal data show tuition and fees are up more than 6% a year on average in the past decade, more than 2 1/2 times inflation.

Congress is unlikely to pass the proposed revamp this year, but the administration has pushed other changes, such as extending the forgiveness window to 25 years for the most-indebted students. The main aim, administration officials say, is to curb eligibility for forgiveness while allowing more borrowers to repay loans based on their income.

Dorie Nolt, a spokeswoman for Education Secretary Arne Duncan, said the proposals are meant to ensure the "neediest borrowers" benefit and to protect the program from "institutional practices that may further increase student indebtedness."

Supporters of the forgiveness program say it is working largely as designed.

"Given the increasing cost of college, the need to borrow money to cover tuition payments can price students out of socially important but historically low-paying jobs, like teaching and social work," said Rep. George Miller of California, the senior Democrat on the House education committee.

A top Senate Republican, however, is calling for change.

"Income-based repayment can be a way for students responsibly to manage debt, but it should not be a bailout for students who borrow too much or for schools who charge too much," said Sen. Lamar Alexander of Tennessee, the ranking Republican on the Senate Education Committee.

Law schools at Columbia University, the University of Chicago and Georgetown University are among those offering some graduates additional aid to cover all or part of their minimum monthly payments under the federal plans.

Max Norris, a 29-year-old lawyer for the state of California, illustrates the potential costs of the program. He pays about $420 a month to the Education Department on his $172,000 in debt, which he says fails even to cover the interest owed. But his out-of-pocket expense falls to $100 monthly after aid from his school, University of California's Hastings College of Law.

Mr. Norris, who makes $60,000 a year in his job, would have about $225,000 in debt forgiven after 10 years, assuming he stays in public service and his salary rises 4% annually, according to a repaymentcalculator created by the New America Foundation, which advocates less-generous forgiveness.

He said he learned of the programs before enrolling. "My intent the whole time in going through law school was to take advantage of this program," he said.

Schools aren't shy in touting the programs' benefits.

Georgetown said on its law-school website until recently the school's aid combined with the federal plan "means public interest borrowers might not pay a single penny on their loans—ever!" A school spokeswoman said the statement was removed this year in light of the proposed changes in Mr. Obama's budget.

Georgetown Law Dean William Treanor said the school sees steering graduates to public-service jobs as part of its Jesuit mission. The school, which assists only those who go on to work in the public sector, spent about $2 million last year covering payments for those in the federal program, he said. In all, 432 Georgetown graduates are now in the program, up from 264 in 2012. Annual tuition is $50,890.

Mr. Treanor said the program doesn't influence the prices the school charges its students.

The plans' long-term costs have greatly outpaced the government's predictions. In the last fiscal year, debt absorbed by the repayment plans from the most widely used student-loan program—Stafford loans—exceeded government expectations from a year earlier by 90%.

A report last week from the Brookings Institution, a centrist think tank, offered one of the few preliminary examinations of the programs' impact. The most popular plan could cost taxpayers $14 billion a year if it becomes available to all borrowers as Mr. Obama has proposed, while fueling tuition inflation, it said.

"Loan forgiveness creates incentives for students to borrow too much to attend college, potentially contributing to rising college prices for everyone," the study said. The authors recommend scrapping the forgiveness provisions.

Student debt has nearly doubled since 2007 to $1.1 trillion, disproportionately driven by the growth in graduate-school debt.

The government has offered some form of income-based repayment since the early 1990s, but few studentsfound the terms enticing. But in 2007, Congress allowed borrowers working in nonprofit and government jobs to have unpaid debt forgiven after 10 years, and cut monthly payments for new borrowers to 15% of discretionary income.

In 2010, it cut those payments to 10% for borrowers who took out loans from 2014. A year later, Mr. Obama, through executive action, moved up the date when borrowers could qualify for the new terms, creating a program for those who took out loans from 2011. The White House this year has proposed making the program available to all student borrowers, regardless of when they signed their loans.

The popularity of the programs surged after the Obama administration began to promote them, starting in 2012, on the Internet and later through email to borrowers.

Supporters of generous loan-forgiveness plans for public-service workers say the policy helps talented workers stay in jobs that typically pay less than the private sector.

"As soon as the government had them trained up for public jobs they left it. It was an incredible cost," said Philip Schrag, a Georgetown University professor who has researched the income-based repayment programs.

The plans are designed to help people like Jacqueline Grippe, a Monroe County assistant public defender in Rochester, N.Y. Using an income-based repayment plan, Ms. Grippe pays about $350 a month toward her roughly $180,000 in debt, most of it accrued at Syracuse University's law school, from which she graduated in 2012.

That keeps her payment manageable on a $58,500 salary, she said, and relieves the pressure of having to find work at a higher-paying law firm. Syracuse isn't assisting in the payments.

"Being in the public sector is a calling for me," said Ms. Grippe, 29. Without the repayment plan, she said, "I don't know what I would do."

Questions for Rohit Chopra, Student Loan Ombudsman, Consumer Financial Protection Bureau, from Senator Nelson:

1. In terms of economic growth and international competitiveness, does having a more skilled workforce offset the cost of education financing programs to taxpayers?

Response:

The Consumer Financial Protection Bureau (Bureau) is focused on making consumer financial markets work better for the American people. A fair and properly functioning student loan marketplace is important to ensuring Americans can pay for college and acquire skills necessary to innovate in a highly competitive global economy.

The numbers still show that it pays to go to college. College graduates continue to earn more than those with no college; the difference amounts to a premium of more than 70 percent for recent graduates. The gap between the earning power of a young graduate with a college degree and a young high school graduate is now the widest it has been in at least 40 years.

Higher education remains the surest path to a good career and job security. The unemployment rate for workers with college degrees is 4.1 percent, compared to 8.4 percent for those with just a high school diploma.[1] For younger workers, the unemployment rate for those with college degrees is 8.9 percent compared to over 13 percent for those with just a high school diploma.[2]

As your question indicates, American businesses require an educated and skilled workforce to drive innovation and global competitiveness, which underscores the impact of the student loan market on economic growth and the importance of our efforts to make this market work better for the American people.

2. What do you think the Federal government should do to address the student debt crisis for those currently in debt?

Response

The Consumer Financial Protection Bureau (Bureau) has published several reports addressing the broader impact that high student debt burdens may have on the economy, and describing potential policy and market-based solutions for policymakers' consideration.

In May 2013, the Bureau published a report entitled, *Student Loan Affordability*, which analyzed public comments, submitted in response to a Request for Information soliciting input on

[1] Bureau of Labor Statistics: Current Population Survey, Household Data, Table A-4, Employment status of the civilian population 25 years and over by educational attainment (June 2012).
[2] Bureau of Labor Statistics: Current Population Survey, Household Data, Table A-16, Employment status of the civilian non-institutional population 16 to 24 years of age by school enrollment, age, sex, race, Hispanic or Latino ethnicity, and educational attainment (June 2012).

affordable repayment options for borrowers with existing student loans. The report described potential policy and market-based solutions to jumpstart a refinance market and spur loan modification activity.[3]

In October 2013, the Bureau published a report entitled, *Annual Report of the CFPB Student Loan Ombudsman*, which is a required report under the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act). The report recommended that Congress examine recent reforms to the credit card and mortgage servicing markets and determine whether they may be applicable to the student loan servicing market.[4]

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[3] Consumer Financial Protection Bureau, *Student Loan Affordability, available at http://www.consumerfinance.gov/reports/student-loan-affordability/*
[4] Consumer Financial Protection Bureau, *Annual Report of the CFPB Student Loan Ombudsman, available at* http://www.consumerfinance.gov/reports/annual-report-of-the-cfpb-student-loan-ombudsman-2013/

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

Question for Rohit Chopra, Student Loan Ombudsman, Consumer Financial Protection Bureau, from Senator Baldwin

1. A constituent from Marshfield wrote me recently about loans she took out for her daughter's education and believed that she had finished paying it off years ago, only to find out of the blue that there were claims that she still owed money. I am wondering if you can speak to how stronger requirements for student loan servicers like the ones--could give students valuable information?

Response

In the Consumer Financial Protection Bureau's (Bureau) most recent *Annual Report of the CFPB Student Loan Ombudsman,* we analyzed complaints we have received from private student loan borrowers.[17] In this report, the Bureau highlighted complaints similar to those of your constituent from Marshfield. We detailed complaints from consumers facing payment processing pitfalls that lead to increased costs, prolonged repayments, and harm to their credit profiles. In this report, the Bureau outlined a number of areas where mortgage borrowers and credit card users may have rights and protections under specific federal consumer financial laws and regulations, including the Real Estate Settlement Procedures Act (RESPA) and the 2009 Credit CARD Act. As noted in the report, complaints on student loan servicing have mirrored problems heard from consumers in the mortgage and credit card market. The report also recommended that Congress examine recent reforms to the credit card and mortgage servicing markets and determine whether they may be desirable for the student loan servicing market.

[17] Consumer Financial Protection Bureau, *Annual Report of the CFPB Student Loan Ombudsman, available at* http://www.consumerfinance.gov/reports/annual-report-of-the-cfpb-student-loan-ombudsman-2013/

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

Questions for Rohit Chopra, Student Loan Ombudsman, Consumer Financial Protection Bureau, from Senator Sessions

1. In a speech before the 2014 Boulder Summer Conference on Consumer Financial Decision Making, you mentioned that the Bureau is "working closely with other regulators to incentivize student loan servicers to provide more modification and refinancing options for private student loans."

    - Please provide an update of the Bureau's efforts.
    - What incentives are you providing?
    - What is the expected effect on the federal budget?

Response

The Consumer Financial Protection Bureau (Bureau) has heard from thousands of consumers, who want to meet their obligations, but who face obstacles when seeking to modify their loans' repayment terms during periods of financial hardship. The inability of lenders and servicers to initiate alternative repayment plans is a disincentive to accomplishing what could benefit both the creditor and the borrower, and continues to be a sign that this market functions poorly.

In July 2012, the Bureau and the Department of Education submitted a report to Congress detailing the private student loan market. The report found that, as of the end of 2011, there were more than $8 billion in defaulted private student loan balances, with even more in delinquency. In general, private student loans do not feature modified repayment options such as income-based repayment for borrowers with partial financial hardship or rehabilitation options for borrowers in default.[18]

Last year, the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve Board of Governors (FRB), and the Office of the Comptroller of the Currency (OCC), provided information to supervised entities regarding private student loan workouts. The agencies encouraged financial institutions to work constructively with private student loan borrowers experiencing financial difficulties. They noted that prudent workout arrangements are consistent with safe and sound lending practices and are generally in the long-term best interest of both the financial institution and the borrower.

In addition, the Bureau has sought to identify opportunities to reduce the fixed costs of alternative repayment options, or loan modification, as high fixed costs to modify loans creates a disincentive to mutually beneficial workouts. Borrowers with federal student loans currently have access to an electronic portal to submit key information to federal student loan servicers in order to enroll in alternative loan repayment programs. The Bureau and other agencies have held discussions with private student loan market participants about whether adapting this existing

[18] Consumer Financial Protection Bureau and Department of Education, *Report on Private Student Loans, available at* http://www.consumerfinance.gov/reports/private-student-loans-report/

system might be helpful, given that a large share of private student loan borrowers also have outstanding federal student loans.

2. In an August 2013 analysis of student loan data released by the Consumer Financial Protection Bureau, the CFPB determined the average balance of borrowers in default was around $14,000, while the average balance for borrowers in income-based repayment was $56,000. When Congress first passed this income based repayment program in 2007, it was intended to serve as a "safety net" for borrowers struggling to "get on their feet" after they finish college.

    - Given these average balances, please present evidence that this repayment program is working as intended.
    - Is the Bureau concerned with the number of high-debt borrowers enrolled in these repayment plans?
    - Please provide projections for the number of borrowers enrolled in income-driven repayment plans, if you have these projections.
    - Please provide projections on the anticipated costs of this program, if you have such projections. If you do have them, please provide a statement of your projection methodology.

Response

The Income-Based Repayment program was authorized by Congress in an amendment to the Higher Education Act of 1965 included in the College Cost Reduction and Access Act of 2007. Pursuant to the Higher Education Act, the Department of Education is the federal agency tasked with administering the income-based and other alternative payment plans.

As I stated in my written testimony, financial regulators and the public lack access to basic, fundamental data on student loan origination and performance. For example, we do not know whether the average balance of borrowers in default is low due to seasoning effects or to the level of the original balance. Increasing transparency of the marketplace will help policymakers and the public better understand these market trends and whether certain programs are achieving intended goals.

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

Questions for Rohit Chopra, Student Loan Ombudsman, Consumer Financial Protection Bureau, from Senator Wyden

1. Mr. Chopra, I understand that the Consumer Financial Protection Bureau provides a Know Before You Owe website where college-bound students can use a Financial Aid Shopping Sheet to compare the costs of attending a number of schools along with the financial aid packages for which they are eligible – based on data provided on financial aid forms – to arrive at a bottom line, net cost of attendance. Has there been any effort to include estimated tax benefits as part of potential student aid coming up with this bottom line?

Response

The Consumer Financial Protection Bureau's (Bureau) 'Paying for College' initiative is a suite of online tools for students and families evaluating their higher education financing options – comparing college costs and financial aid, learning about college money and loan options, and assessing repayment options. The purpose of the Bureau's 'Paying for College' tool is to help consumers make informed financial decisions about how to pay for college and repay student debt. Paying for College allows consumers to see the future costs and risks of different financing options. The Bureau's website also includes information to alert consumers to certain tax benefits that may be available to student loan borrowers.[16] However, the Bureau's tools that assist borrowers in projecting their future debt burdens do not currently consider tax benefits. As we continue to refine and enhance these tools, we will assess whether more specific information on tax benefits may be useful to users of these tools.

2. Is it your impression that students and families are taking federal tax benefits into account when making their post-secondary education decisions? Do you have recommendations for either: how Congress or the Administration can improve awareness of tax incentives for higher education OR how Congress can improve the structure of these tax incentives to make them more effective?

Response

The Bureau is not aware of existing data analyses on whether tax incentives are influencing students' and families' higher-education related decisions. However, the Bureau has taken steps to inform consumers of existing tax benefits and to encourage personal savings at tax time. The Bureau plans to continue our partnership with the Volunteer Income Tax Assistance (VITA) program to ensure filers are able to take advantage of potential tax benefits, including those for higher education expenses.

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[16] Consumer Financial Protection Bureau, AskCFPB, *available at* http://www.consumerfinance.gov/askcfpb/599/do-federal-student-loans-affect-my-taxes.html http://www.consumerfinance.gov/askcfpb/623/do-private-student-loans-affect-my-taxes.html

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

Questions for Rohit Chopra, Student Loan Ombudsman, Consumer Financial Protection Bureau, from Senator Enzi

1. What proportion of private student loan borrowers registered complaints with the Consumer Financial Protection Bureau (CFPB)? What is done with complaints relating to the origination of federal student loans?

Response

As I stated in my written testimony, financial regulators and the public lack access to basic, fundamental data on student loan origination and performance. Private student lenders and servicers rarely report key data, such as the number of private student loan borrowers in their portfolios, which would allow us to calculate proportions of the market.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act), which established an ombudsman for private student loans within the Consumer Financial Protection Bureau (Bureau), requires the ombudsman to compile and analyze data on private student loan borrowers' complaints and submit an annual report to Congress.[5] In our most recent *Annual Report of the CFPB Student Loan Ombudsman*, we were careful to note that our observations are not based on a representative sample and should not be used to draw conclusions as to the prevalence of the issues in the marketplace. Instead, we identified that the information could be helpful in further understanding the diversity of consumer experience in the market.[6]

The Dodd-Frank Act also requires the Bureau to coordinate with the Department of Education on student loan complaint handling.[7] In October 2011, the Bureau entered into a Memorandum of Understanding (MOU) with the Department of Education, establishing a framework for the transfer of student loan complaints and the sharing of complaint data between agencies. Since the Bureau launched its consumer response function for private student loan complaints in March 2012, our website has provided consumers seeking to submit a federal student loan complaint with a direct link to the complaint intake form for the Federal Student Aid (FSA) Ombudsman at the Department of Education. Our contact center staff is trained to transfer consumers with complaints concerning federal student loans to the FSA Ombudsman's call center.

[5] *See* Dodd-Frank Act, Pub. L. No. 111-203, Sec. 1035
[6] Consumer Financial Protection Bureau, *Annual Report of the CFPB Student Loan Ombudsman, available at* http://www.consumerfinance.gov/reports/annual-report-of-the-cfpb-student-loan-ombudsman-2013/
[7] *See* Dodd-Frank Act, Pub. L. No. 111-203, Sec. 1035

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

2. The Consumer Financial Protection Bureau (CFPB) has said it works "as the primary financial regulator of the student loan industry," and describes the Department of Education as "the administrator of federal aid programs." Within the student loan marketplace, the Department of Education is not only the administrator of aid programs) but also a major market player. Does the CFPB plan to regulate how loans are originated? Does the CFPB plan to offer any recommendations for reforms related to the origination of federal student loans?

Response

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) established the Consumer Financial Protection Bureau (Bureau) as a regulator of consumer financial products and services, with the authority to examine large banks, thrifts, and credit unions-and their affiliates-with assets over $10 billion, as well as certain nonbank consumer financial service providers[8]. The Bureau supervises more than 150 of the nation's largest financial institutions, which includes their student loan origination and servicing activities. The Dodd-Frank Act granted the Bureau supervisory authority over nonbank covered persons of all sizes in private education lending.[9] Further, the Dodd-Frank Act granted the Bureau supervisory authority over nonbank "larger participants"[10], which as defined by rule, includes servicers of both federal and private student loans.[11]

The Dodd-Frank Act requires coordination between the Bureau and the Department of Education in several ways including on consumer complaint handling, which is referenced in your first question, as well as the submission of a report to Congress on private student loans, and establishes that the student loan ombudsman shall submit his annual report and make appropriate recommendations to the Secretary of Education.[12]

In addition, the Bureau and the Department of Education work together to understand the student loan market and to ensure that students and families have the tools to make smarter choices when paying for college. In partnership, the Bureau and the Department of Education published a prototype of a financial aid "shopping sheet" - a model financial aid offer letter that clearly identifies the costs and risks associated with financing higher education and facilitates the process of making apples-to-apples comparisons between offers. The Department of Education published the final "shopping sheet", which more than 2,300 colleges and universities across the country have voluntarily adopted.

With respect to loan origination, the scarcity of publicly-available data on student loan origination and performance challenges regulators' ability to appropriately monitor the market,

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[8] *See* Dodd-Frank Act, Pub. L. No. 111-203, Sec. 1025(b)(1)
[9] *See* Dodd-Frank Act, Pub. L. No. 111-203, Sec.1024(a)(1)(D)
[10] *See* Dodd-Frank Act, Pub. L. No. 111-203, Sec.1024(a)(1) (a)(1)(B), (a)(2); *see also* Dodd-Frank Act, Pub. L. No. 111-203, Sec.1002 (5) (defining "consumer financial product or service")
[11] 12 CFR § 1090.106
[12] *See* Dodd-Frank Act, Pub. L. No. 111-203, Sec. 1077 and Sec. 1035

consumers' ability to make informed decisions about debt levels, and lenders' ability to underwrite loans based on actual expected outcomes. Increased market transparency will also help to inform policymakers of trends that may be impacting other aspects of the economy.

3. In a speech before the 2014 Boulder Summer Conference on Consumer Financial Decision Making, Consumer Financial Protection Bureau (CFPB) Director Richard Cordray focused his comments on addressing student loan debt. He mentioned that the Bureau is "working closely with other regulators to incentivize student loan servicers to provide more modification and refinancing options for private student loans." Can you provide an update on the CFPB's efforts in this area? What incentives is the CFPB providing?

Response

The Consumer Financial Protection Bureau (Bureau) has heard from thousands of consumers, who want to meet their obligations, but who face obstacles when seeking to modify their loans' repayment terms during periods of financial hardship. The inability of lenders and servicers to initiate alternative repayment plans that would benefit both the creditor and the borrower continues to be a sign that this market functions poorly.

Last year, the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve Board of Governors (FRB), and the Office of the Comptroller of the Currency (OCC), provided information to supervised entities regarding private student loan workouts. The agencies encouraged financial institutions to work constructively with private student loan borrowers experiencing financial difficulties. They noted that prudent workout arrangements are consistent with safe and sound lending practices and are generally in the long-term best interest of both the financial institution and the borrower.

In addition, the Bureau has sought to identify opportunities to reduce the fixed costs of modifying a loan. For example, borrowers with federal student loans currently have access to an electronic portal to submit key information to federal student loan servicers in order to enroll in alternative repayment programs. The Bureau and other agencies have held discussions with private student loan market participants about whether leveraging this existing system might be helpful, given that a large share of private student loan borrowers also have outstanding federal student loans.

4. On April 22, 2014, the Consumer Financial Protection Bureau (CFPB) published its Mid-Year Report, which discussed 2,300 private student loan complaints and 1,300 debt collection complaints related to both federal and private student loans. The report makes a sweeping conclusion that lenders and servicers place private student loans in default when the cosigner passes away or files for bankruptcy. The CFPB frequently claims to be a data driven agency - why does the report not specify the number of loans involved where "automatic default" has occurred? What is the number of loans involved?

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

Response

The Consumer Financial Protection Bureau's (Bureau) report entitled, *Mid-year Update on Student Loan Complaints*, provided a summary and analysis of complaints from student loan borrowers. The report discusses a range of issues, including an analysis of complaints related to a common provision included in many private student loan promissory notes permitting lenders to place borrowers into default due to the death or bankruptcy filing of a co-signer, even if the loan was in good standing.[13]

The report does not suggest the prevalence of the issues described as they relate to the entire student loan market. The report does note that the Bureau's analysis of a subset of complaints received over the reporting period revealed similar and highly troubling fact patterns involving problems with a variety of lenders and servicers about the same promissory note provision leading to the auto-default issue referenced in your question.

Similarly, in October 2012, the Bureau published, *The Next Front? Student Loan Servicing and the Cost to Our Men and Women in Uniform*, which analyzed trends based on a limited number complaints submitted by servicemembers that ultimately revealed a widespread problem. Our analysis examined difficulties that servicemembers reported with accessing their legally-entitled benefits, such as the rate cap provided for under the Servicemembers Civil Relief Act (SCRA).[14] The Bureau referred this cluster of complaints to the Department of Justice (DOJ), which, after conducting an investigation, determined that the practices were widespread. The DOJ and the Federal Deposit Insurance Corporation subsequently ordered Sallie Mae and Navient to pay nearly $100 million in restitution and penalties for violating multiple laws, including the SCRA. In that case, the Bureau's analyses of a limited number of highly-correlated complaints resulted in the correction of what turned out to be a significant problem and contributed to the provision of substantial relief to servicemembers.

In terms of the number of complaints involving auto-defaults, within the six-month reporting period for the recent report, *Mid-year Update on Student Loan Complaints* (October 1, 2013 through March 31, 2014), the Bureau received approximately 50 complaints from consumers relating to problems they encountered with their private student loan servicer or lender, when a co-signer died or filed for bankruptcy protection. Like the complaints we received from servicemembers, the similarities in the experiences reported by multiple borrowers suggested that these complaints may not be isolated incidents.

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[13] Consumer Financial Protection Bureau, *Mid-year Update on Student Loan Complaints*, *available at* http://www.consumerfinance.gov/reports/mid-year-report-on-private-student-loans-2014/

[14] Consumer Financial Protection Bureau, *The Next Front? Student Loan Servicing and the Cost to Our Men and Women in Uniform*, *available at* *http://www.consumerfinance.gov/reports/the-next-front-student-loan-servicing-and-the-cost-to-our-men-and-women-in-uniform/*

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

These complaints identified at least seven large depository institutions and specialty student loan market participants, including four of the top ten bank holding companies by assets, acting as the marketer, lender, loan originator, loan servicer, or the current loan holder.[15]

Below are five examples of the complaints we received, including how the companies responded. Due to privacy concerns, these narratives have been anonymized and stripped of direct identifiers associated with the consumers.

> ***Example 1:*** One borrower submitted a complaint stating that he contacted his student loan servicer shortly after the death of his father, in order to notify the company of his father's passing and to request his deceased father be removed from the account. The consumer continued to make all payments and was current on his loan. The company instructed the consumer to submit a photocopy of his father's death certificate, which the consumer did.
>
> By following instructions provided by his student loan servicer, the consumer triggered an auto-default on his private student loan, ultimately receiving multiple letters from a debt collector demanding full repayment and threatening negative credit consequences.
>
> In response to the complaint the consumer submitted to the Bureau, the debt collector stated that the collection efforts were permissible based on the contract the consumer signed at the time he obtained the loan. The debt collector pledged that collection efforts would continue even though the account may be current.
>
> ***Example 2:*** The consumer explained that his loan was recently sent to collections by his private student loan servicer, despite his making each monthly payment toward his loan on time and in full since graduating from college. The consumer noted that the debt collector explained how his loan auto-defaulted, an event triggered by the death of his grandfather nearly two years prior, who had co-signed the loan. In addition to attempting to recover against the borrower, a debt collector attempted to recover the balance of the loan from his elderly grandmother and executor of his deceased grandfather's estate. The consumer explained that the collector demanded the full balance of the loan, nearly $50,000, to be paid immediately, or it would place a claim against his grandfather's estate.
>
> In response to the complaint, the debt collector stated that, based on the information provided by the consumer, collection efforts would cease and the account would be recalled from the debt collector and returned to his student loan servicer.
>
> ***Example 3:*** One consumer, the father of a private student loan borrower, co-signed loans for his daughter and stated that she had been making her monthly private student loan

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[15] Federal Financial Institution Examinations Council, National Information Center, *Holding Companies with Assets Greater than $10 Billion* (March 2014), *available at http://www.ffiec.gov/nicpubweb/nicweb/top50form.aspx.*

payments, on-time and in full, since 2008. In 2010, the borrower's father filed for bankruptcy protection and was granted a discharge of his debts in August of 2013. However, in September 2013, the borrower discovered that her private student loan was referred to a collection agency because of the father's bankruptcy. The borrower contacted her student loan servicer to clarify that the bankruptcy was her father's and that the loan was in good standing. Her father submitted a complaint to the Bureau, reporting that neither he nor his daughter received any notice from the servicer that they would place the loan in default based upon a co-signer's bankruptcy.

In response to the complaint, the servicer, on behalf of the loan owners, acknowledged that the borrower had been making timely payments on the loan and her account had been in good standing. The servicer noted that the loan would remain in default; as the borrower violated a clause in the contract she signed at the time she obtained the loan. This provision permitted the owner of a loan to place the loan into default if any bankruptcy proceeding is initiated by either the borrower or the co-signer, without regard to whether the loan was in good standing at the time of the bankruptcy filing.

Example 4: The consumer had four loans with this servicer and had been paying on the loans, on-time, for seven years. The consumer sent the servicer a letter requesting their grandfather be removed as a co-signer since he had passed away 13 years prior. The consumer then mailed a copy of the grandfather's death certificate and a co-signer release application as the consumer stated they had met the payments requirement to qualify for co-signer release. A few weeks later, the consumer received a letter and corresponding phone calls from a debt collector that was demanding the full balance of the loan or they would file a claim against the grandfather's estate. The consumer called the debt collector to explain that the grandfather had been deceased for 13 years and the estate is closed. The consumer stated that a representative of the debt collector indicated collection efforts would continue.

In response to the complaint, the debt collector told the consumer that they would cease collection efforts to continue to collect the full balance immediately because there was no estate for the co-signer.

Example 5: A private student loan borrower submitted a complaint about a company that had been servicing three private student loans owned by two other companies. The borrower noted that they had never missed a payment on any of the loans and all the loans were in good standing. However, when the borrower went to his student loan servicer's website to make his monthly payment he found that his payment had been reduced to $0.

The borrower called his servicer to ask why there was no payment due. His servicer informed him that his loans had been placed in bankruptcy status and that the servicer could no longer mail him billing statements or update his online account. Subsequently, the consumer found out that his father, and co-signer to his loans, had filed for bankruptcy. His servicer informed him that he must continue making payments even

> though no payment was due. The borrower relied on his servicer's advice and continued to remit his normal monthly payment, even though his online account stated no payment was required.
>
> After making multiple monthly payments based on his student loan servicer's instructions, the consumer discovered that his loans had been placed into default. The borrower began to receive calls from a debt collector demanding the total outstanding balance for all three of his private student loans, to be paid in full immediately. The borrower contacted the debt collector and was told that he would not be able to remove his father as a co-signer. He was informed that collection efforts would continue even though he had never missed a monthly payment. The consumer explained that these loans ruined his credit since all three loans were listed as in default.
>
> The private student loan servicer responded to the complaint on behalf of the loan owners, stating that it placed the loans in "verified bankruptcy" status, a type of auto-default. The servicer noted that the loan would remain in default; as the borrower triggered a clause in the contract he signed at the time he received a loan. This provision permits the owner of a loan to place the loan into default if any bankruptcy proceeding is initiated by either the borrower or the co-signer, without regard to whether the loan was in good standing at the time of the bankruptcy filing.
>
> The servicer also noted that it furnished negative information about the account to the credit bureaus, documenting the auto-default, and would be unable to retract or otherwise modify the reporting.

Since the publication of the Bureau's report, *Mid-year Update on Student Loan Complaints*, we have been alerted by certain market participants that they intend to more closely monitor the complaints and they further intend to suspend auto-defaults. The Bureau encourages all institutions to closely monitor these types of complaints to identify potential issues of concern.

United States Senate Committee on the Budget
The Impact of Student Loan Debt On Borrowers and the Economy
June 4, 2014

Question for Rohit Chopra, Student Loan Ombudsman, Consumer Financial Protection Bureau, from Senator Ayotte

1. We are investing already--regardless of what we do in legislation--a lot to help students in this country get a good education. And I would like to know what your thoughts are on how we hold these institutions more accountable.

Response

The Consumer Financial Protection Bureau (Bureau) is working on a number of fronts to help students and families make smarter choices when financing a higher education. By giving consumers the information and tools to be able to effectively shop between schools based on actual costs, we hope to introduce greater market discipline into the higher education sector. As students select schools that are priced competitively and offer the best value, those schools that cannot compete will be forced to adapt to these changes.

The Bureau and the Department of Education published a prototype of a financial aid "shopping sheet" - a model financial aid offer letter that clearly identifies the costs and risks associated with financing higher education and facilitates the process of making apples-to-apples comparisons between offers. The Department of Education published the final "shopping sheet", which more than 2,300 colleges and universities across the country have voluntarily adopted.[19]

Building on the success of the "shopping sheet," the Bureau released 'Paying for College', a suite of online tools for students and families evaluating their higher education financing options – comparing college costs and financial aid, learning about college money and loan options, and assessing repayment options. The purpose of the Bureau's 'Paying for College' tool is to help consumers make informed financial decisions about how to pay for college and repay student debt. 'Paying for College' also allows consumers to see the future costs and risks of different financing options and between different schools by taking the information presented in individual financial aid award letters and making personalized projections about total borrowing at graduation to help students make informed comparisons.[20]

These are just the first steps toward promoting a properly functioning marketplace for higher education financing. The Bureau will continue to help students and families understand their options and make smarter choices when paying for college.

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[19] Consumer Financial Protection Bureau, *Know Before You Owe, available at* http://www.consumerfinance.gov/students/knowbeforeyouowe/

[20] Consumer Financial Protection Bureau, *Paying for College, available at* http://www.consumerfinance.gov/paying-for-college/

THE COSTS OF INACTION: THE ECONOMIC AND BUDGETARY CONSEQUENCES OF CLIMATE CHANGE

TUESDAY, JULY 29, 2014

UNITED STATES SENATE,
COMMITTEE ON THE BUDGET,
Washington, D.C.

The Committee met, pursuant to notice, at 10:03 a.m., in Room SD–608, Dirksen Senate Office Building, Hon. Patty Murray, Chairman of the Committee, presiding.

Present: Senators Murray, Stabenow, Whitehouse, Coons, Kaine, King, Sessions, Crapo, Johnson, and Wicker.

Staff Present: Evan T. Schatz, Majority Staff Director; and Eric Ueland, Minority Staff Director.

OPENING STATEMENT OF CHAIRMAN MURRAY

Chairman MURRAY. Good morning. This hearing will come to order. And I want to thank the Ranking Member, Senator Sessions, and all of our colleagues who are joining us here today. And I would especially like thank all of our witnesses for taking the time to be here as well.

Today we are going to hear from Mindy Lubber, the president of Ceres, Inc., an organization that works with businesses, investors, and other groups on issues like climate change.

Alfredo Gomez joins us from the Government Accountability Office, where he leads the Natural Resources and Environment Division.

Sherri Goodman is senior vice president and general counsel at CNA Corporation, and she is also the former Deputy Under Secretary for Defense for Environmental Security.

We also have Dr. David Montgomery. He is senior vice president for NERA Economic Consulting.

And Dr. Bjorn Lomborg also joins us, the director of the Copenhagen Consensus Center.

Again, thank you to all of you for taking the time to do this today.

It is well established, from the overwhelming majority of climate scientists, that climate change is for real. And, in fact, today we are already seeing its negative effects in the United States.

Warming temperatures are disrupting weather patterns, causing our sea levels to rise, and creating the conditions for destructive extreme weather events.

But we are not here today to have a discussion on the settled science of climate change; rather, today we are going to be focusing on some of the consequences that have not received as much attention: the economic and fiscal impacts of climate change.

This is not just an environmental issue. It poses serious risks to our economy and the Federal budget. And if we fail to address these threats, it will weaken economic growth and increase costs for our Federal Government.

These costs are too important to ignore, and it is time for the Budget Committee to begin to assess the damage climate change will have on our budget and our economy.

I know there are skeptics who do not believe the climate is changing, or believe that addressing this issue will be too expensive in the short term.

But what we are hearing from a growing chorus of experts, including the White House Council of Economic Advisers, the Risky Business Project, former Secretaries of the Treasury, as well as our witnesses today, is the costs of inaction will be far greater.

A recent report by the Risky Business Project found that climate change will have, and I quote, "specific, measurable impacts on our Nation's current assets and ongoing economic activity."

It will increase risks and add costs for businesses, making it more difficult for them to succeed, which is something that Mindy Lubber and her organization have been looking into for years. And I look forward to hearing more of her testimony about the risks to businesses and investors.

Budget experts are also starting to see rising costs on our Federal balance sheet. Take disaster relief, for example. Climate change is causing more destructive and costly extreme weather events—such as Hurricanes Sandy and Katrina. Those two disasters alone cost the Federal Government about $100 billion.

The Government Accountability Office has been investigating the ways climate change would add costs for the Federal Government, and I know Mr. Gomez from GAO will discuss those findings in more detail during his testimony today.

I think every member of this Committee should be worried about the vulnerability of our Nation's roads and bridges and waterways due to rising sea levels and changing weather patterns.

In addition to the vulnerability of our infrastructure, U.S. military installations and operations are also threatened.

Bases on the coast in my State and across the country face rising sea levels and will need significant adaptation and mitigation measures to remain viable bases and meet their operational needs.

Climate change will also disrupt vulnerable populations' access to basic resources like food and water. Because of this, the 2014 Quadrennial Defense Review identified effects of climate change as "threat multipliers" that will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions.

Climate change will increase the resources our military will need to meet these new challenges, maintain its readiness, and carry out its mission. So, Ms. Goodman, I am looking forward to hearing more during your testimony about the findings in your organization's report.

Taken together, the impacts of climate change will have major implications for our Nation's economy and budget. Across Federal, State, and local governments, it will further strain budgets that are already being stretched. And its threat to our economy and budget will only add to an already challenging fiscal picture.

While budget projections have improved significantly in the near and medium term, we still face long-term fiscal challenges. But the added costs of climate change impacts are not adequately accounted for in current long-term budget outlooks. And the longer we wait to address climate change, the worse its impacts will get.

Failing to act now will only make it more difficult to solve this problem later and will force us to divert resources away from other priorities.

So let me be clear on this point. Anyone who, like me, wants to tackle our long-term fiscal challenges fairly and responsibly needs also to worry about the impacts of climate change.

There are those who say tackling climate change will cost too much. But given what we know about the consequences of a warming planet, inaction is far more costly.

Curbing emissions to prevent the more severe impacts of climate change and adapting to the impacts that we cannot avoid are our lowest-cost options. And if we want to fulfill our responsibility to leave behind both a strong and stable fiscal foundation and a safe and healthy environment for our children and our grandchildren, we need to move forward with those options now.

So I really want to thank all of our witnesses for coming today. We look forward to your testimony and appreciate the time that you are spending with us today.

With that, let me turn to my Ranking Member, Senator Sessions, for his opening remarks.

OPENING STATEMENT OF SENATOR SESSIONS

Senator SESSIONS. Thank you, Madam Chairman. This is the first hearing I am aware of that we have had in the

Budget Committee on global warming. I think it is not a bad idea. We need to talk about it. We are spending right now indeed a significant amount of money on this project, and even more, we are requiring huge expenditures of the private sector. Why? Because greater costs are ahead if we do not act now, we are told. We need to spend more money now. That means an impact on our budget.

So today we will openly, I hope look at some of the costs and the benefits that would accrue from such a policy. Surely if one has money, some wealth, that money should be applied for the maximum benefit for the maximum number of people. We certainly are not unlimited in the amount of wealth that we have in our country that we can apply to any problem.

So "The Costs of Inaction" is the hearing title. Maybe the better title should be "The Costs of Action and Inaction." Inaction costs may be real, but certainly they are distant and somewhat uncertain. But the costs of action are certain right now. They are real and immediate.

Government expenditures, economic slowdown, higher prices all result from many of the proposals that are out there today. These are indisputable costs right now. The economy is not healthy. Wages are down; workforce participation is at a rate as low as the 1970s; and we cannot hammer this economy, in my opinion, with any unnecessary costs.

So, first, the temperature is not matching the computer models. It is just not. It has been going on for a good long time now, maybe 15 years, basically flat. We have had fewer storms, not more storms. It has been 3,100 days since we have had a Category 3 hurricane. That goes back to 1900. We are not having more hurricanes. And, actually, tornadoes are flat or down also.

So Dr. Lomborg believes that there is some warming occurring in our country as a result of human activities, but says let us not panic, let us be careful; let us consider wisely what we do before we allocate a large part of our wealth to the problem and how we should handle it. And costs can be huge. Regulations like a tax impose burdens on the economy. Economically, there is no difference—there is no difference—in the Government taxing the American people to replace a coal-fired plant than the Congress and the Government just telling the company to spend the money. We act like it does not cost anything to mandate these changes, and it absolutely does cost to do this. And we have to consider this.

These costs for businesses and people, they reduce profits, reduce tax revenues to the Government, and drive up costs for everybody.

So the point is this: Every global warming action has costs, often hidden but very real, and we must acknowledge those costs and decide whether the wealth expended gets the maximum results considering all the needs of America—and all the needs of humanity, for that matter. That is why we get paid the big bucks around here.

So there is some common ground. Let me say this: There are places we can do. We can reduce CO2 in a way that is rational, I think. More energy efficiency. We have made some real progress on that. There is some more progress that can be done. But it is not as easy. The low-hanging fruit has been taken in many areas.

We need less and can unite around less harmful pollution—the particulates, the NOX and SOX.

We need more American energy. I believe all of us can agree on that.

We need more nuclear power. I think we all can agree on that. But consistently we keep throwing up blocks, blocking more nuclear power and driving up costs.

We need more cost-effective alternative sources, absolutely, but we need to maybe do more research. I think we can work on that to have better research and understand what we can impose that makes sense economically. Prove technology before mandating it.

So it is important, Madam Chairman, to consider our budget, the cost of aggressive U.S. policy in this area and the benefits we might reasonably expect and when we might see those benefits.

Government expenditures, taxes, and regulation all fall ultimately on the American people, the people of this country. It is not enough just to say the danger is great; therefore, we are free to demand the Nation spend whatever is necessary, whatever the cost, to be a leader in the world on these issues.

So I disagree with that policy. I believe that Dr. Lomborg and Dr. Montgomery are cooler heads, and we should listen to some of their practical advice.

The predictions of experts have not been proven true so far. They are off pretty significantly when it comes to temperature. The basis for dramatic demands on our budget and economy have been these computer prognostications that have been produced by wizards. If they for 15 years have been off, then it is time for us to be a bit cautious, I suggest. Those who raise questions, who challenge some of the orthodoxy cannot be and will not be silenced. This is a free country. We need to have the best advice we can get from whatever area it comes from.

So I felt it reasonable to assume that CO2 and other human activities cause warming. It seems to be. Scientists tell us so, and I do not see any reason to dispute that fundamentally. But this Nation and the world have many challenges in working to make life better in our country and on this planet.

So I propose we work harder to work together to find things that can improve our planet, improve the quality of our life, that we can do in a way that is bipartisan and actually get done.

Thank you, Mr. Chairman.

Chairman MURRAY. Thank you very much, Senator Sessions.

We will now turn to our witnesses for their comments, and I just want to remind everybody that we are not here to debate the science. We are here to talk about the fiscal costs of climate change. So I appreciate, again, everybody coming to this hearing.

STATEMENT OF MINDY LUBBER, PRESIDENT, CERES

Ms. LUBBER. Thank you. Chairman Murray, Ranking Member Sessions, and members of the Committee, it is delightful to be here. I am honored.

My name is Mindy Lubber. For the last 10 years, I have been running an organization called Ceres that works directly with 110 investors, some of the largest asset owners, public pension funds, as well as asset managers, and with 70 companies who understand that climate is a risk, a financial risk, as well as an opportunity, and are beginning to act on that.

The companies are firms like Nike and Mars and Starbucks, Owens Corning, Jones Lang LaSalle, eBay, VF Corporation, and General Mills. It is not just small green companies. And the investors and the rating agencies who are looking at climate as a fiduciary and a financial risk with us are some of the largest investors in the country. This is no longer just an environmental issue, although that it is.

And the risks are across our economy. For apparel giants like VF Corp. and Nike, climate change poses risks to cotton and other commodities that are being affected by reduced water availability and drought. And for Jones Lang LaSalle and Owens Corning, climate change poses risks to buildings and their enormous use of electricity and growing vulnerability to coastal flooding and insurance costs. And for General Mills and Starbucks, climate change poses risks to coffee, to corn, and to other crucial crops that are experiencing more volatile growing conditions, oftentimes meaning higher food prices, which I will get to in a moment.

Climate risk is a risk across our economy. The hundreds of companies and investors we work with believe that it is not a choice between protecting the climate and protecting the economy. We cannot build a stable—without a stable climate, we cannot build an economy that is stable. Surprises, massive storms, not enough water depletion of natural resources are not good for business. They are not good for our economy.

We have done extensive research over the years. I am going to try and zero in on a few areas. One is the public resources that are being spent due to climate change.

On the public side, we have identified five Government disaster relief and recovery programs where the costs of inaction on climate change are pronounced and profound.

First, Federal disaster assistance appropriations. One conservative estimate puts the average bill that taxpayers can expect to pay at $20 billion a year. That is funding to help our communities from storms and hurricanes. And one storm could push that up to $100 billion. Hurricane Sandy was a $60 billion price tag.

Secondly, our National Flood Insurance Program, currently in debt to the U.S. taxpayers for approximately $30 billion. This vital program collected about $3.6 billion in premiums and paid out over $7.8 billion in Hurricane Sandy losses and other losses. We are seeing more storms. There will be more of a pull on our National Flood Insurance Program.

Or our Federal Crop Insurance Program, vital to our farmers. From the year 2001 through 2010, we saw a record- setting $10.8 billion in 2001. And the devastating heat waves and drought in 2012 shattered even those records when the program paid out $17.3 billion in crop losses.

And our wildfire protection costs have grown, tripled since the 1990s.

And our State-run insurance plans. In the insurance sector, we are seeing private companies pull out of markets that are most at risk, and State and Federal programs have to step in. State-run programs, backstopped by State taxpayers, ultimately have seen loss exposure grow from $54 billion in 1990 to $884 billion in 2011. Insurance companies are seeing the risks. Where it is too risky, they pull out. When they pull out, the State governments and Federal Government step in, costing our taxpayers and costing our consumers. When insurance companies stay in, the prices rise.

And it is not only through these increases of Federal programs. We are paying for it at the grocery store. Let us take this down to our homes. Prolonged droughts in California, the Great Plains, and the Southwest have diminished the U.S. cattle herd to its smallest since 1951, causing beef prices to increase by 10 percent from a year ago.

In decisions which have devastated many Texas communities, Cargill and other major livestock producers have been forced to shut down feedlots. As a Cargill spokesman put it, the drought-depleted beef cattle supply is devastating.

Extreme weather is also contributing to prices for fresh fruits and eggs, rising by 5 to 6 percent, twice the 2.8 percent of food price rises over the past 20 years. And when agriculture dies and cattle die, it is not only increased costs to all of us at our homes, at our grocery stores, at our restaurants; it is lost jobs, farm workers, truckers, and many others in those industries.

And that is going to keep growing. Our corn industry, which is the bedrock of our food supply, needs water and, climate change is creating more drastic water problems as we see every day.

As climate change increases the risks of extreme weather events, our Federal and State disaster relief and insurance programs will become increasingly unsustainable. By one estimate, the net present value of the Federal Government's liability for unfunded disaster assistance over the next 75 years could be greater than the net present value of the unfunded liability for the Social Security program. We have got to take this out from the closets and into the public discussion, as you all are doing, and look at what are the real costs of action and the real costs of inaction.

And the risks, while very real, are starting to be addressed. Financial leaders, investors, and businesses understand these risks. They are starting to act. Sixty percent of the Fortune 100 companies have goals for renewable energy or greenhouse gas reductions.

Chairman MURRAY. Ms. Lubber, if you can wrap up real quick, we want to make sure everybody has a chance.

Ms. LUBBER. Thank you. Companies and investors are acting. They are making a difference. They are factoring this into their portfolio assessments, their analysis. The rating agencies are looking at climate risk because this is real, it is profound, and it is now. And in each case, from the public sector to the private sector, the risks are causing greater economic impacts, and the data shows they are growing every single year.

Thank you very much.

[The prepared statement of Ms. Lubber follows:]

Statement by Mindy Lubber

Ceres President

before the

United States Senate Committee on the Budget

"The Costs of Inaction: The Economic and Budgetary Consequences of Climate Change

July 29, 2014

Chairman Murray, Ranking Member Sessions, members of the Committee, thank you for this opportunity to discuss with you the economic risks of climate change. My name is Mindy Lubber and I am the President of Ceres. Ceres is a national nonprofit organization mobilizing business and investor leadership on climate change and other global sustainability challenges. Ceres directs the Investor Network on Climate Risk, a network of 110 institutional investors with $13 trillion of collective assets focused on the risks of climate change. Ceres also coordinates BICEP - Business for Innovative Climate & Energy Policy - a network of 31 companies advocating for strong clean energy policies that includes major firms like Nike, Mars, Starbucks, Owens Corning, Jones Lang LaSalle, eBay, VF Corporation and General Mills.

The diversity of companies in BICEP represents the profound diversity of impacts that climate change is having on the U.S. economy – and the American taxpayers. For apparel giants VF Corp. and Nike, climate change poses risks to cotton and other commodities that are being affected by reduced water availability and drought. For Jones Lang LaSalle and Owens Corning, the climate change poses risks to buildings and their enormous use of electricity and growing vulnerability to coastal flooding and rising insurance costs. For General Mills and Starbucks, climate change poses risks to coffee, corn and other crucial crops that are experiencing more volatile growing conditions that oftentimes mean higher food prices. (We're seeing this right now, actually, with meat, fruit and vegetable prices all going up due to the prolonged drought in the West.)

Quite simply, climate change poses risks to every business sector and every American. The risks may vary, but they are being felt across our economy. That is why Ceres – and the companies and investors we work with – believe that the choice is NOT between protecting the climate and protecting the economy… We believe that without a stable climate, our economy cannot thrive.

The hundreds of companies and investors we work with all agree that climate change is a threat to their profitability and a threat to the global economy. These businesses are taking steps to prepare for the escalating impacts of climate change. They are pursuing sustainable technologies, such as using more renewable energy to slow climate change impacts and they are bringing their greenhouse gas emissions down. They are taking these steps because they believe the costs of not doing so are too great.

Ceres has done extensive research in the past decade on the many different ways that climate change is impacting our economy, hitting our wallets and creating bigger and bigger financial risks if actions are not taken.

Ceres has sponsored two reports, which are particularly relevant to today's discussion. In 2012 we published a report examining the growing costs and risks of extreme weather events; and last October, we published a report on the growing costs to taxpayers of inaction on climate change. I would like to include these two reports with my testimony for the record.

Ceres has identified five government disaster relief and recovery programs where the costs of inaction on climate change are most pronounced. They are federal disaster assistance appropriations, the National Flood Insurance Program, the Federal Crop Insurance Program, Wildfire Protection, and state-run insurance plans known as residual markets. Taxpayer bills and exposure for all of these programs are rising. Here are some numbers:

- First, with regard to federal disaster assistance appropriations, one conservative estimate puts the average bill that taxpayers can expect to pay at $20 billion a year. That's funding that goes to help communities respond to disasters such as hurricanes, thunderstorms and floods. But one should recognize that in any given year one catastrophic event alone could cost over $100 billion, causing that bill to the taxpayers to skyrocket. Hurricane Sandy, for example, cost Americans $60 billion in disaster relief costs.

- Second, our National Flood Insurance Program is currently in debt to the U.S. taxpayers for approximately $30 billion. In 2012, this vital program collected about $3.6 billion in premiums and paid out over $7.8 billion in Hurricane Sandy losses and other flood losses. While we'd like to think that Hurricane Sandy's devastating storm surge was an anomaly, it's not. Coastal flooding events are becoming more and more common, a result of rising sea levels and stronger storms, both of which are likely consequences of climate change. The average number of days per year that tidal waves have reached or surpassed flooding thresholds, that's a level when water begins collecting on surface streets – has more than tripled in many locations. Since 2001, water has hit these flooding thresholds an average of 20 days or more a year in several East Coast cities: Sandy Hook, N.J.; Atlantic City, N.J.; Annapolis, Md.; Washington, D.C.; Wilmington, N.C.; and Charleston, S.C.

The National Flood Insurance Program must increase premiums in these areas now prone to flood risks, or we can expect bigger program losses that American taxpayers will end up paying for.

Third, the Federal Crop Insurance Program, a vital program that helps our farmers manage their risks, has seen insured crop losses spike from an average of $4.1 billion per year from 2001 through 2010, to a record-setting $10.8 billion in 2011. The devastating heat waves and drought in 2012 shattered even that record, when the program paid out $17.3 billion in crop losses

Fourth, wildfire protection costs have tripled since the 1990s. Wildfire seasons are becoming longer and more severe. In the past 10 years federal government wildfire protection and suppression costs have averaged over $3 billion annually, compared to about $1 billion annually in the 1990s. FEMA's fire management assistance grants have more than tripled over the same period to an average of over $70 million annually. And state governments are spending up to another $2 billion annually on wildfire protection on top of the unknown amounts that local governments are spending.

And, finally, state-run insurance plans known as residual insurance markets are facing dramatically larger loss exposure as private insurers pull out of states, especially coastal states, facing major climate risks. These state-run programs, backstopped by state taxpayers ultimately, have seen loss exposure grows from $54 billion in 1990 to $884.7 billion in 2011. I will come back to these state plans in more detail shortly.

If there is a moment historians will look back on as the moment when climate change truly hit home in America, it will almost surely be 2012. Add up all of the costs that I just enumerated– federal crop losses, flood losses, wildfire costs and disaster relief – extreme weather events cost Americans more than $300 per person in 2012 or $110 billion all together.

Yet, despite these rising losses in recent years, our federal disaster relief and recovery programs have been slow to recognize that worsening climate impacts will drive up future losses to unsustainable levels. Instead of encouraging behavior that reduces risks from extreme weather events, these programs encourage behavior that increases these risks – such as agricultural practices that increase vulnerability to drought and new development in hurricane- and wildfire-prone areas.

Citizens are not only paying for inaction on climate change through the increased costs of these federal programs. They are paying for them at the grocery store. Prolonged droughts in California, the Great Plains and the Southwest, have diminished the US cattle herd to its smallest size since 1951, causing beef prices to increase by 10% from a year ago. In decisions which have devastated many Texas communities, Cargill and other major livestock producers have been forced to shut down feedlot operations due to - as a Cargill spokesman put it – the "drought-depleted beef cattle supply."

Extreme weather is also contributing to prices for fresh fruits and eggs rising by five to six percent – twice the 2.8% rate of food price increases over the past 20 years.

According to the latest National Climate Assessment, released in May, the negative effects of climate change on agricultural production in the Midwest and Great Plains will far outweigh any positive effects. Corn production, the nation's biggest agriculture sector by far, is especially vulnerable to higher temperatures, changing rainfall patterns, soil erosion and water shortages that are widely predicted from climate change.

Competition for water, which is becoming ever more scarce in many US regions due to drier conditions, is especially pronounced in arid regions of the country, such as Southern California, the Southwest, and Texas. Ceres produced another study this year, "Hydraulic Fracturing and Water Stress: Water Demand by the Numbers," that points out how hydraulic fracturing is increasing competitive pressures for water in some of the country's most water-stressed and drought-ridden regions. The report's review of hydraulic fracturing well data showed that 55 percent of the wells were in areas experiencing drought and 36 percent were in regions with significant groundwater depletion –key among those, California, which is in the midst of a horrific drought and Texas, which has the highest concentration of shale energy development and fracturing activity by far. Barring stiffer water-use regulations and improved on-the-ground practices, the industry's water needs in many regions are on a collision course with other water users, especially agriculture and municipal water use.

As climate change increases the risks of of extreme weather events, our federal and state disaster relief and insurance programs will become increasingly unsustainable. By one estimate, the net present value of the federal government's liability for unfunded disaster assistance over the next 75 years could actually be greater than the net present value of the unfunded liability for the Social Security program. [1]

Ceres has been working closely with state regulators in the insurance industry to set new standards and expectations that will enable insurers to plan for escalating climate risks while moving companies and individuals toward low-carbon activities. A growing number of companies in the sector recognize that climate change can have a devastating impact on their industry. They are the proverbial canary in the coal mine on climate change's impact on the economy.

Our report on the growing costs and risks of extreme weather states that, inevitably, as there is more weather damage, insurance companies, especially property & casualty firms, will charge more for their products. Ultimately this could lead to fewer people being able to afford insurance, as well as solvency problems for insurers themselves.

Insurance commissioners across the country are working with insurance companies to make sure that they are adequately addressing climate change in their risk profiles. From Washington to California to New York, insurance commissioners are mandating that major insurers disclose how they are managing the risks posed by climate change.

Let me ask you, if you were told that there was a 98% chance that the boat you were about to board would sink, would you still climb aboard? The insurance industry has done this calculation with regard to climate change and they are not willing to take the risk that the 2% of

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[1] J. David Cummins, Michael Suher and George Zanjani, "Federal Financial Exposure to Natural Catastrophe Risk," chapter in "Measuring and Managing Federal Financial Risk," National Bureau of Economic Research, edited by Deborah Lucas, February 2010

scientists who are skeptical of climate change are right. They are preparing their industry for the long-term effects of severe weather due to climate change.

Unfortunately, from the taxpayers' vantage point, there's a down side to insurers' growing preparedness in risk-prone areas. Private insurers are especially leery of providing coverage in coastal areas vulnerable to more powerful hurricanes. In many regions, -- Florida, in particular – they've largely withdrawn from homeowners insurance markets because they were unable to charge substantially higher premiums. As a result, the states themselves are bearing the risks of providing homeowners insurance to millions of homeowners. Many coastal states are becoming so-called 'insurers of last resort.' What this means is that if a calamity strikes, state taxpayers will end up paying the bills.

According to the Government Accounting Office, from 1970 to 2010 state run insurance plans for those who cannot purchase insurance in the public market – so-called FAIR and Beach Plans – experienced explosive growth both in terms of policy count and exposure value. Total policies in force in the nation's FAIR, Beach and Windstorm Plans combined have more than tripled from 931,550 in 1990 to a record high 3.3 million in 2011. And as I said earlier, total loss exposure in these plans surged from $54.7 billion in 1990 to a record $884.7 billion in 2011—an increase of 1,517 percent – or 15 times.

At Ceres, while we clearly see the risks – both environmental and financial – from climate change, we also see opportunities in tackling the problem. Building a low-carbon economy will mean new job development and more investment in new businesses. We're also seeing compelling evidence of more and more American companies acting on climate change – and doing so affordably.

Last month, Ceres, Calvert and the World Wildlife Fund issued a "Power Forward 2.0" report showing how clean energy is becoming the mainstream for U.S. corporations. Sixty percent of the Fortune 100 companies have goals for renewable energy or greenhouse gas reductions. Through these initiatives, the 53 Fortune 100 companies reporting on climate and energy saving targets have collectively saved \$1.1 billion annually and decreased their annual CO2 emissions by the equivalent of retiring 15 coal-fired power plants.

We're also seeing impressive progress in the electric power sector, the largest source of CO2 emissions in the country. Last week Ceres published a report benchmarking the country's largest 32 electric power companies on their energy efficiency and renewable energy programs. The report shows that electric utilities all over the country are delivering renewable energy and energy efficiency at scale. We found many strong performing utilities from all parts of the country such as Xcel Energy, a top ranking utility on renewable energy, which operates in Colorado, Minnesota, and Texas. And Pinnacle West in Arizona, which is achieving impressive energy savings for customers in a state that only recently began to set goals for these resources.

The report highlights recent studies showing that energy efficiency continues to rank as the lowest cost resource compared to all other electricity supply options. The report also cited a recent National Renewable Energy Lab study showing that renewable electricity has added only about 1 percent to electricity costs across the country. And renewable energy prices are continuing to drop at a rapid pace.

Tackling climate change offers one of the greatest economic opportunities of the 21st century—spurring innovation, creating good-paying jobs, and strengthening corporate bottom lines—all while protecting the economy from potentially catastrophic climate change impacts.

More than 850 companies recognize this climate opportunity and are signatories to Ceres' Climate Declaration.

To truly seize this opportunity, we need to dramatically boost investments in clean energy and energy efficiency over the coming decades to cut carbon pollution and combat the worst effects of climate change. Globally, we need to achieve what we at Ceres call the Clean Trillion –$1 trillion in clean energy investing annually over the next 36 years. Such investments globally are now at about a quarter-trillion dollars a year. So we have a long way to go. Meanwhile, the fossil fuel industry is spending over a half-trillion a year looking for new fossil fuel reserves that were we ever to burn them all would put us on a catastrophic path. The longer this paradigm continues, the longer we wait to tackle climate change with a vengeance, the more the costs—economic, human and environmental—will balloon.

I often talk about how when I had children, my whole outlook changed with regard to the environment. I really understood the importance of keeping the world safe for my kids and their kids…. Creating a world where they can live healthily whether they choose to live on Boston or Botswana. I feel the same way about the economic future of the world and of our country….and I believe they go hand in hand. And I am sure that you members of the budget committee think about the importance of a strong economic future for our country every day. I would submit to you that a strong economic future depends on our country's response to the risk of climate change.

Chairman MURRAY. Thank you very much.
Mr. Gomez?

STATEMENT OF ALFREDO GOMEZ, DIRECTOR OF NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Mr. GOMEZ. Good morning, Chairman Murray, Ranking Member Sessions, and members of the Committee. I am pleased to discuss GAO's work on Federal fiscal exposures posed by climate change and extreme weather events.

Last year, we added limiting Federal fiscal exposures from climate change to our list of high-risk issues needing transformation. According to the latest U.S. National Climate Assessment, extreme weather has become more frequent, more intense, including heat, heavy downpours, floods, and droughts. In addition rising sea levels pose risks to coastal areas. While scientists cannot link individual events to climate change, observed changes in recent years have shown that these events can affect the economy, including governments' budgets, as it has already been stated.

Implementing resilience measures now creates additional costs but could also provide benefits later. For context, the U.S. spends hundreds of billions of dollars on infrastructure each year, so making good choices now could prevent future losses.

My testimony today discusses two areas: first, fiscal exposure to critical infrastructure and public lands; and, second, the need for improved Federal technical assistance to all levels of Government.

First, regarding infrastructure and public lands, DOD has about a half million facilities with replacement value of about $850 billion. DOD's 2014 Quadrennial Defense Review said that the impacts of climate change may undermine the capacity of domestic installations to support training.

In May, we reported on the impact of wildfires and extreme weather on military readiness and infrastructure. We found that drought contributed to wildfires in an Alaskan base that affected readiness because of delays in training. We also described an extreme rain event at a base in the desert Southwest where a year's worth of rain fell in 80 minutes, damaging 160 facilities and causing $64 million in damage.

Hundreds of thousands of other large Federal facilities face similar vulnerabilities. For example, NASA has 5,000 buildings and other structures valued at $32 billion, and many are located in vulnerable coastal areas.

Regarding public lands, the Federal Government manages nearly 30 percent of the Nation's land. These assets are vulnerable to changes in the climate, including the possibility of more frequent and severe wildfires.

Our work has found that appropriations for wildland fire management activities have tripled, averaging approximately $3 billion annually in recent years, up from about $1 billion in 1999.

My second main point focuses on the need for the Federal Government to improve climate-related technical assistance to all levels of Government. With respect to the information needs of Federal agencies, we have found that agencies have started to assess their vulnerabilities, but they still need assistance building resilience into their infrastructure and planning processes.

For example, we reported that DOD personnel conducting infrastructure planning efforts did not have information necessary to accounts for the risks of climate change. We recommended that DOD provide more information to installation planners, and DOD agreed.

Regarding State and local governments that spend billions of dollars on infrastructure, our 2013 high-risk designation described challenges in developing a cohesive Federal approach to information sharing that can inform all levels of Government. Providing the best available information to State and local governments can help them address climate-related impacts when planning and building infrastructure.

Much of this infrastructure is designed to last long into the future, but may have to be rebuilt or replaced if planners do not account for future risks.

We have ongoing work assessing governmentwide options to meet the climate-related information needs of all levels of Government. We also have work underway that may identify other steps the Federal Government could take to limit its fiscal exposure.

It is worth noting that our work has not involved forecasting or modeling the specific budgetary impacts of these events. Instead, we have identified examples of actual and potential vulnerabilities that we should consider to minimize any future adverse impacts.

Chairman Murray, Ranking Member Sessions, members of the Committee, this concludes my statement.

[The prepared statement of Mr. Gomez follows:]

United States Government Accountability Office

GAO

Testimony
Before the Committee on the Budget, U.S. Senate

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BUDGET ISSUES:

Opportunities to Reduce Federal Fiscal Exposures Through Greater Resilience to Climate Change and Extreme Weather

Statement of Alfredo Gomez, Director
Natural Resources and Environment

GAO-14-504T

July 29, 2014

GAO Highlights

Highlights of GAO-14-504T, a testimony before the Committee on the Budget, U.S. Senate

BUDGET ISSUES

Opportunities to Reduce Federal Fiscal Exposures Through Greater Resilience to Climate Change and Extreme Weather

Why GAO Did This Study

Certain types of extreme weather events have become more frequent or intense according to the United States Global Change Research Program, including prolonged periods of heat, heavy downpours, and, in some regions, floods and droughts. While it is not possible to link any individual weather event to climate change, the impacts of these events affect many sectors of our economy, including the budgets of federal, state, and local governments.

GAO focuses particular attention on government operations it identifies as posing a "high risk" to the American taxpayer and, in February 2013, added to its High Risk List the area *Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks*. GAO's past work has identified a variety of fiscal exposures—responsibilities, programs, and activities that may explicitly or implicitly expose the federal government to future spending.

This testimony is based on reports GAO issued from August 2007 to May 2014, and discusses (1) federal fiscal exposures resulting from climate-related and extreme weather impacts on critical infrastructure and federal lands, and (2) how improved federal technical assistance to all levels of government can help reduce climate-related fiscal exposures.

GAO is not making new recommendations but has made numerous recommendations in prior reports on this topic, which are in varying states of implementation by the Executive Office of the President and federal agencies.

View GAO-14-504T. For more information, contact Alfredo Gomez at (202) 512-3841 or gomezj@gao.gov.

What GAO Found

Climate change and related extreme weather impacts on infrastructure and federal lands increase fiscal exposures that the federal budget does not fully reflect. Investing in resilience—actions to reduce potential future losses rather than waiting for an event to occur and paying for recovery afterward—can reduce the potential impacts of climate-related events. Implementing resilience measures creates additional up-front costs but could also confer benefits, such as a reduction in future damages from climate-related events. Key examples of vulnerable infrastructure and federal lands GAO has identified include:

- **Department of Defense (DOD) facilities.** DOD manages a global real-estate portfolio that includes over 555,000 facilities and 28 million acres of land with a replacement value DOD estimates at close to $850 billion. This infrastructure is vulnerable to the potential impacts of climate change and related extreme weather events. For example, in May 2014, GAO reported that a military base in the desert Southwest experienced a rain event in August 2013 in which about 1 year's worth of rain fell in 80 minutes. The flooding caused by the storm damaged more than 160 facilities, 8 roads, 1 bridge, and 11,000 linear feet of fencing, resulting in an estimated $64 million in damages.
- **Other large federal facilities.** The federal government owns and operates hundreds of thousands of other facilities that a changing climate could affect. For example, the National Aeronautics and Space Administration (NASA) manages more than 5,000 buildings and other structures. GAO reported in April 2013 that, in total, these NASA assets—many of which are in coastal areas vulnerable to storm surge and sea level rise—represent more than $32 billion in current replacement value.
- **Federal lands.** The federal government manages nearly 30 percent of the land in the United States—about 650 million acres of land—including 401 national park units and 155 national forests. GAO reported in May 2013 that these resources are vulnerable to changes in the climate, including the possibility of more frequent and severe droughts and wildfires. Appropriations for federal wildland fire management activities have tripled since 1999, averaging over $3 billion annually in recent years.

GAO has reported that improved climate-related technical assistance to all levels of government can help limit federal fiscal exposures. The federal government invests tens of billions of dollars annually in infrastructure projects that state and local governments prioritize, such as roads and bridges. Total public spending on transportation and water infrastructure exceeds $300 billion annually, with about 25 percent coming from the federal government and the rest from state and local governments. GAO's April 2013 report on infrastructure adaptation concluded that the federal government could help state and local efforts to increase their resilience by (1) improving access to and use of available climate-related information, (2) providing officials with improved access to technical assistance, and (3) helping officials consider climate change in their planning processes.

Chairman Murray, Ranking Member Sessions, and Members of the Committee:

I am pleased to be here today to discuss our work on reducing federal fiscal exposures posed by climate change and extreme weather events.[1] Climate change affects the American people in far-reaching ways, according to the National Research Council (NRC) and the United States Global Change Research Program's (USGCRP) May 2014 National Climate Assessment.[2] Certain types of extreme weather events with links to climate change have become more frequent or intense according to NRC and USGCRP, including prolonged periods of heat; heavy downpours; and, in some regions, floods and droughts. In addition, according to NRC and USGCRP, warming causes sea level to rise, sea ice to melt, and oceans to become more acidic as they absorb carbon dioxide. While it is not possible to link any individual weather event to climate change, these and other observed impacts of such events disrupt people's lives and affect many sectors of our economy, including the budgets of federal, state, and local governments.

Extreme weather events have cost the nation tens of billions of dollars in damages over the past decade. In 2012, for example, Superstorm Sandy alone caused tens of billions of dollars in damages to buildings, utilities, transportation systems, and other infrastructure. Heavy rainfall and snowfall events (which increase the risk of flooding) and heatwaves are generally becoming more frequent, consistent with theoretical expectations for a warmer and moister atmosphere due to changes in the climate, according to a February 2014 joint report by the U.S. National

[1]Our past work identified a variety of fiscal exposures—responsibilities, programs, and activities that explicitly or implicitly expose the federal government to future spending. Fiscal exposures vary widely as to source, extent of the government's legal commitment, and magnitude. Further, some of these factors may change over time. For example, the government's response to an event or series of events can strengthen expectations that the government will respond in the same way to similar events in the future. For additional information, see *Fiscal Exposures: Improving Cost Recognition in the Federal Budget*, GAO-14-28 (Washington, D.C.: Oct. 29, 2013).

[2]Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014: *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program (Washington D.C.: May 2014). Click here for more information about USGCRP. NRC is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering. For more information about NRC, click here.

Academy of Sciences and the Royal Society in the United Kingdom.[3] The federal budget, however, generally does not account for disaster assistance provided in cases such as Superstorm Sandy—for which Congress provided about $60 billion in budget authority for such assistance—or the long-term impacts of climate change on existing federal infrastructure and programs.[4] Because of these significant financial risks and the nation's fiscal condition, in February 2013, we added *Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks* to our list of high-risk areas.[5]

One way to reduce the potential impacts of climate change is to invest in enhancing resilience. The National Academies define resilience as the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events.[6] As we reported in April 2013, enhanced resilience results from actions to reduce potential future losses, rather than waiting for an event to occur and paying for recovery afterward.[7] Enhancing resilience has begun to receive more attention because greenhouse gases that are in the atmosphere could continue altering the climate system into the future, regardless of efforts to control emissions.

[3]U.S. National Academy of Sciences and The Royal Society, *Climate Change: Evidence and Causes (Washington, D.C.: Feb 27, 2014)*. Click here to access the report and here for more information about the Royal Society, the national academy of science in the United Kingdom.

[4]Congress temporarily increased the borrowing authority for the National Flood Insurance Program by $9.7 billion and provided about $50 billion in appropriated funds for expenses related to the consequences of Superstorm Sandy.

[5]GAO, *High-Risk Series: An Update*, GAO-13-283, February 2013. Every 2 years at the start of a new Congress, GAO calls attention to agencies and program areas that are high-risk due to their vulnerabilities to fraud, waste, abuse, and mismanagement, or are most in need of transformation. Click here to access the *Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks* content. The focus of this high-risk area may evolve over time to the extent that federal climate change programs and policies change.

[6]The National Academies, Committee on Increasing National Resilience to Hazards and Disasters; Committee on Science, Engineering, and Public Policy; *Disaster Resilience: A National Imperative* (Washington, D.C., 2012).

[7]GAO, *Climate Change: Future Federal Adaptation Efforts Could Better Support Local Infrastructure Decision Makers*, GAO-13-242 (Washington, D.C.: Apr 12, 2013).

Implementing resilience measures creates additional up-front costs but could also confer benefits, such as a reduction in future damages from climate-related events. Federal efforts have begun to focus on enhancing resilience and providing information to state and local decision makers so they can make more informed decisions about fiscal exposure to potential climate-related events.[8] Decisions to adapt infrastructure to climate change can also depend on many other factors, such as the availability of substitutes or the remaining useful life of existing infrastructure.

My testimony today discusses (1) federal fiscal exposures resulting from climate-related and extreme weather impacts on critical infrastructure and federal lands, and (2) how improved federal technical assistance to all levels of government can help reduce climate-related fiscal exposures. My testimony is based on reports we issued from August 2007 to May 2014. Detailed information on our scope and methodology for our prior work can be found in those reports. The work this testimony is based on was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Climate-Related and Extreme Weather Impacts on Infrastructure and Federal Lands Increase Federal Fiscal Exposures

As our past work has found, climate-related and extreme weather impacts on physical infrastructure such as buildings, roads, and bridges, as well as on federal lands, increase federal fiscal exposures. Infrastructure is typically designed to withstand and operate within historical climate patterns. However, according to NRC, as the climate changes, historical patterns do not provide reliable predictions of the future, in particular, those related to extreme weather events.[9] Thus, infrastructure designs may underestimate potential climate-related impacts over their design life, which can range up to 50 to 100 years. Federal agencies responsible for the long-term management of federal lands face similar impacts. Climate-

[8] For example, click here to access the Climate Change Resilience website maintained by the Council on Environmental Quality (CEQ) within the Executive Office of the President.

[9] See, for example, NRC, Panel on Strategies and Methods for Climate-Related Decision Support, Committee on the Human Dimensions of Global Change, *Informing Decisions in a Changing Climate* (Washington, D.C.: 2009).

related impacts can increase the operating and maintenance costs of infrastructure and federal lands or decrease the infrastructure's life span, leading to increased fiscal exposures for the federal government that are not fully reflected in the budget. Key examples from our recent work include (1) Department of Defense (DOD) facilities, (2) other large federal facilities such as National Aeronautics and Space Administration (NASA) centers, and (3) federal lands such as National Parks.

DOD Facilities

DOD manages a global real-estate portfolio that includes over 555,000 facilities and 28 million acres of land with a replacement value that DOD estimates at close to $850 billion. Within the United States, the department's extensive infrastructure of bases and training ranges—critical to maintaining military readiness—extends across the country, including Alaska and Hawaii. DOD incurs substantial costs for infrastructure, with a base budget for military construction and family housing totaling more than $9.8 billion in fiscal year 2014. As we reported in May 2014, this infrastructure is vulnerable to the potential impacts of climate change, including increased drought and more frequent and severe extreme weather events in certain locations.[10]

In its 2014 Quadrennial Defense Review, DOD stated that the impacts of climate change may increase the frequency, scale, and complexity of future missions, while undermining the capacity of domestic installations to support training activities. For example, in our May 2014 report on DOD infrastructure adaptation, we found that drought contributed to wildfires at an Army installation in Alaska that delayed certain units' training (see fig. 1).[11] Further, the fire limited the use of certain weapons systems in training and decreased the realism of the training.

[10]GAO, *Climate Change Adaptation: DOD Can Improve Infrastructure Planning and Processes to Better Account for Potential Impacts*, GAO-14-446 (Washington, D.C.: May 30, 2014).

[11]GAO-14-446. Adaptation is defined as adjustments to natural or human systems in response to actual or expected climate change.

Figure 1: Wildfire on a DOD Training Range in Alaska

Source: Alaska Fire Service. | GAO-14-504T

Note: Drought conditions contributed to a 2013 fire that limited the use of certain weapons systems and training activities.

Our May 2014 report also found that more frequent and more severe extreme weather events may result in increased fiscal exposure for DOD. Extreme precipitation events may lead to potential vulnerabilities such as increased maintenance costs for roads, utilities, and runways and increased flood-control measures. For example, we reported that in August 2013, a military base in the desert Southwest experienced an extreme rain event in which approximately 1 year's worth of rain fell in 80 minutes. According to Army officials and documents, the flooding caused by the storm damaged more than 160 facilities, 8 roads, 1 bridge, and 11,000 linear feet of fencing and resulted in an estimated $64 million in damage. Figure 2 shows flood damage to guard towers from this event.

Figure 2: Army Training Area in Southwestern United States

Source: U.S. Army | GAO-14-504T

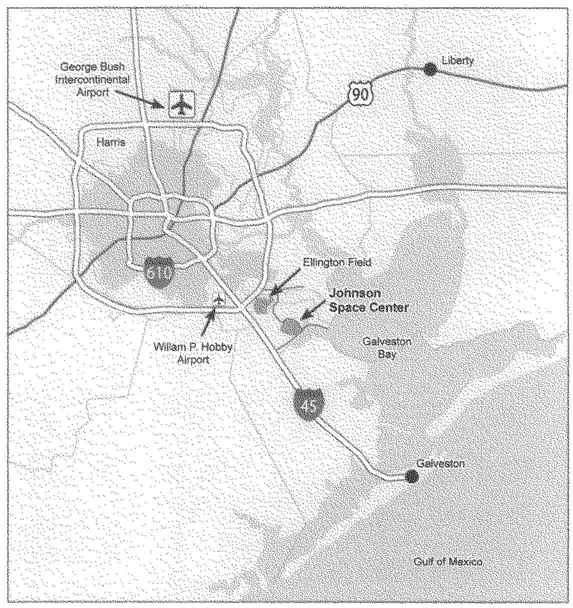
Note: Guard towers at an Army training area in the Southwestern United States (left); The same type of guard tower, toppled and severely damaged by flash flooding from an extreme precipitation event at this training area (right).

Other Large Federal Facilities

The federal government owns and operates hundreds of thousands of non-defense buildings and facilities that a changing climate could affect. For example, NASA's real property holdings include more than 5,000 buildings and other structures such as wind tunnels, laboratories, launch pads, and test stands. In total, these NASA assets—many of which are located in vulnerable coastal areas—represent more than $32 billion in current replacement value. Our April 2013 report on infrastructure adaptation showed the vulnerability of Johnson Space Center and its mission control center, often referred to as the nerve center for America's human space program.[12] As shown in figure 3, the center is located in Houston, Texas, near Galveston Bay and the Gulf of Mexico. Johnson Space Center's facilities—conservatively valued at $2.3 billion—are vulnerable to storm surge and sea level rise because of their location on the Gulf Coast.

[12]GAO-13-242.

Figure 3: Location of Johnson Space Center



Source: NASA. | GAO-14-504T

Federal Lands

The federal government manages nearly 30 percent of the land in the United States for a variety of purposes, such as recreation, grazing, timber, and habitat for fish and wildlife. Specifically, federal agencies manage natural resources on about 650 million acres of land, including 401 national park units and 155 national forests. As we reported in May 2013, these resources are vulnerable to changes in the climate, including increases in air and water temperatures, wildfires, and drought; forests stressed by drought becoming more vulnerable to insect infestations; rising sea levels; and reduced snow cover and retreating glaciers.[13] In addition, various species are expected to be at risk of becoming extinct due to the loss of habitat critical to their survival. Many of these changes have already been observed on federally managed lands and waters and are expected to continue, and one of the areas where the federal government's fiscal exposure is expected to increase is in its role as the manager of large amounts of land and other natural resources. According to USGCRP's May 2014 National Climate Assessment, hotter and drier weather and earlier snowmelt mean that wildfires in the West start earlier in the spring, last later into the fall, and burn more acres.[14] Appropriations for the federal government's wildland fire management activities have tripled, averaging over $3 billion annually in recent years, up from about $1 billion in fiscal year 1999.[15]

Improved Climate-Related Technical Assistance to All Levels of Government Can Help Limit Federal Fiscal Exposures

As we have previously reported, improved climate-related technical assistance to all levels of government can help limit federal fiscal exposures. Existing federal efforts encourage a decentralized approach to such assistance, with federal agencies incorporating climate-related information into their planning, operations, policies, and programs and establishing their own methods for collecting, storing, and disseminating climate-related data. Reflecting this approach, technical assistance from the federal government to state and local governments also exists in an uncoordinated confederation of networks and institutions. As we reported in our February 2013 high-risk update, the challenge is to develop a cohesive approach at the federal level that also informs action at the state and local levels.[16]

[13] GAO, *Climate Change: Various Adaptation Efforts Are Under Way at Key Natural Resource Management Agencies*, GAO-13-253 (Washington, D.C.: May 31, 2013).

[14] Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014: *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program (Washington D.C.: May 2014).

[15] Click here to access a summary of wildland fire management issues and related reports on GAO's Key Issues website. See also Congressional Research Service, *Wildfire Management: Federal Funding and Related Statistics*, R43077 (March 5, 2014).

[16] GAO-13-283.

Federal Decision Makers

The Executive Office of the President and federal agencies have many efforts underway to increase the resilience of federal infrastructure and programs. For example, executive orders issued in 2009 and 2013 directed agencies to create climate change adaptation plans which integrate consideration of climate change into their operations and overall mission objectives, including the costs and benefits of improving climate adaptation and resilience with real-property investments and construction of new facilities.[17]

Recognizing these and many other emerging efforts, our prior work shows that federal decision makers still need help understanding how to build resilience into their infrastructure and planning processes. For example, in our May 2014 report, we found that DOD requires selected infrastructure planning efforts for existing and future infrastructure to account for climate change impacts, but its planners did not have key information necessary to make decisions that account for climate and related risks.[18] We recommended that DOD provide further information to installation planners and clarify actions that account for climate change in planning documents. DOD concurred with our recommendations.

Previously, in 2007, we concluded that federal resource management agencies had not made climate change a high priority and did not have specific guidance in place advising their managers on addressing the effects of climate change in their resource management.[19] As a result, we recommended that that the Secretaries of Agriculture, Commerce, and the Interior develop guidance for their resource managers that explains how they expect to address the effects of climate change, and the three departments generally agreed with this recommendation. However, as we found in our May 2013 report, resource managers still struggled to incorporate climate-related information into their day-to-day activities,

[17]Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (Oct. 5, 2009). Executive Order 13653, *Preparing the United States for the Impacts of Climate Change* (Nov. 1, 2013). Click here for more information on these executive orders.

[18]GAO-14-446.

[19]GAO, *Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources*, GAO-07-863 (Washington, D.C.: Aug. 7, 2007).

even with the creation of strategic policy documents and high-level agency guidance.[20]

State and Local Decision Makers

The federal government invests tens of billions of dollars annually in infrastructure projects prioritized and supervised by state and local governments. In total, the United States has about 4 million miles of roads and 30,000 wastewater treatment and collection facilities. According to a 2010 Congressional Budget Office report, total public spending on transportation and water infrastructure exceeds $300 billion annually, with roughly 25 percent of this amount coming from the federal government and the rest coming from state and local governments.[21] However, the federal government plays a limited role in project-level planning for transportation and wastewater infrastructure, and state and local efforts to consider climate change in infrastructure planning have occurred primarily on a limited, ad hoc basis. The federal government has a key interest in helping state and local decision makers increase their resilience to climate change and extreme weather events because uninsured losses may increase the federal government's fiscal exposure through federal disaster assistance programs.

Louisiana State Highway 1 is an example of infrastructure of national importance that is managed by state and local governments. Our April 2013 report on infrastructure adaptation found that according to National Oceanic and Atmospheric Administration estimates, within 15 years, segments of Louisiana State Highway 1 will be inundated by tides an average of 30 times annually due to relative sea level rise.[22] Louisiana Highway 1 is the only road access to Port Fourchon, which services virtually all deep-sea oil operations in the Gulf of Mexico, or about 18 percent of the nation's oil supply. Flooding of this road effectively closes this port. Because of Port Fourchon's significance to the oil industry at the national, state, and local levels, the U.S. Department of Homeland Security, in July 2011, estimated that a closure of 90 days could reduce

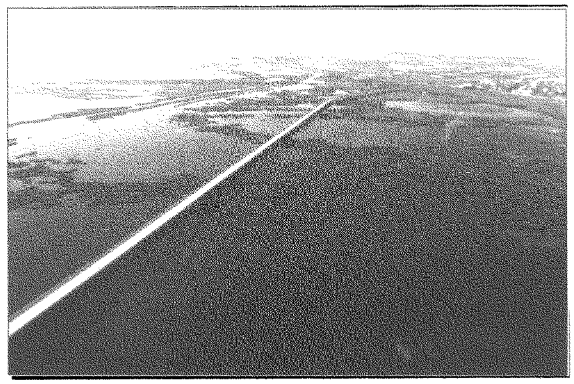
[20]GAO-13-253.

[21]Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure*, Pub. No. 4088 (Washington, D.C.: November 2010).

[22]GAO-13-242.

the national gross domestic product by about $7.8 billion.[23] Figure 4 shows Louisiana State Highway 1 leading to Port Fourchon.

Figure 4: Louisiana State Highway 1 Leading to Port Fourchon



Source: NOAA. | GAO-14-504T

We found in April 2013, that infrastructure decision makers have not systematically incorporated potential climate change impacts in planning for roads, bridges, and wastewater management systems because, among other factors, they face challenges identifying and obtaining available climate change information best suited for their projects.[24] Even when good scientific information is available, it may not be in the actionable, practical form needed for decision makers to use in planning

[23]Department of Homeland Security, National Infrastructure Simulation and Analysis Center, Risk Development and Modeling Branch, Homeland Infrastructure Threat and Risk Analysis Center, Office of Infrastructure Protection, In Collaboration with The National Incident Management Systems and Advanced Technologies Institute at the University of Louisiana at Lafayette, *Louisiana Highway 1/Port Fourchon Study* (July 15, 2011).

[24]GAO-13-242.

and designing infrastructure. Such decision makers work with traditional engineering processes, which often require very specific and discrete information. Moreover, local decision makers—who, in this case, specialize in infrastructure planning, not climate science—need assistance from experts who can help them translate available climate change information into something that is locally relevant. In our site visits to several locations where decision makers overcame these challenges—including Louisiana State Highway 1—state and local officials emphasized the role that the federal government could play in helping to increase local resilience.

Any effective adaptation strategy must recognize that state and local governments are on the front lines in both responding to immediate weather-related disasters and in preparing for the potential longer-term impacts associated with climate change. We reported in October 2009, that insufficient site-specific data—such as local temperature and precipitation projections—complicate state and local decisions to justify the current costs of adaptation efforts for potentially less certain future benefits.[25] We recommended that the appropriate entities within the Executive Office of the President develop a strategic plan for adaptation that, among other things, identifies mechanisms to increase the capacity of federal, state, and local agencies to incorporate information about current and potential climate change impacts into government decision making. USGCRP's April 2012 strategic plan for climate change science recognizes this need, by identifying enhanced information management and sharing as a key objective.[26] According to this plan, USGCRP is pursuing the development of a global change information system to leverage existing climate-related tools, services, and portals from federal agencies.

In our April 2013 report, we concluded that the federal government could help state and local efforts to increase their resilience by (1) improving access to and use of available climate-related information, (2) providing officials with improved access to technical assistance, and (3) helping

[25]GAO, *Climate Change Adaptation: Strategic Federal Planning Could Help Government Officials Make More Informed Decisions*, GAO-10-113 (Washington, D.C.: Oct. 7, 2009).

[26]USGCRP, National Global Change Research Plan 2012-2021: *A Strategic Plan for the U.S. Global Change Research Program* (Washington D.C.: April 2012).

officials consider climate change in their planning processes.[27] As a result, we recommended, among other things, that the Executive Director of USGCRP or other federal entity designated by the Executive Office of the President work with relevant agencies to identify for decision makers the "best available" climate-related information for infrastructure planning and update this information over time, and to clarify sources of local assistance for incorporating climate-related information and analysis into infrastructure planning, and communicate how such assistance will be provided over time.

These entities have not directly responded to our recommendations, but the President's June 2013 Climate Action Plan and November 2013 Executive Order 13653 drew attention to the need for improved technical assistance.[28] For example, the Executive Order directs numerous federal agencies, supported by USGCRP, to work together to develop and provide authoritative, easily accessible, usable, and timely data, information, and decision-support tools on climate preparedness and resilience. In addition, on July 16, 2014, the President announced a series of actions to help state, local, and tribal leaders prepare their communities for the impacts of climate change by developing more resilient infrastructure and rebuilding existing infrastructure stronger and smarter.[29]

We have work under way assessing the strengths and limitations of governmentwide options to meet the climate-related information needs of federal, state, local, and private sector decision makers. We also have work under way exploring, among other things, the risks extreme weather events and climate change pose to public health, agriculture, public transit systems, and federal insurance programs. This work may help identify other steps the federal government could take to limit its fiscal exposure and make our communities more resilient to extreme weather events.

[27] GAO-13-242.

[28] More information on the June 2013 Climate Action Plan and Executive Order 13653 can be found here.

[29] Click here for more information on the resilience efforts announced on July 16, 2014.

Chairman Murray, Ranking Member Sessions, and Members of the Committee, this concludes my prepared statement. I would be pleased to answer any questions you have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff members have any questions about this testimony, please contact me at (202) 512-3841 or gomezj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Alfredo Gomez, Director; Michael Hix, Assistant Director; Jeanette Soares; Kiki Theodoropoulos; and Joseph Dean Thompson made key contributions to this testimony.

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Chairman MURRAY. Thank you very much.
Ms. Goodman?

STATEMENT OF THE HONORABLE SHERRI W. GOODMAN, EXECUTIVE DIRECTOR, CNA MILITARY ADVISORY BOARD

Ms. GOODMAN. Thank you very much, Chairman Murray, Ranking Member Sessions, and Committee members. It is a privilege to be with you today.

I am Sherri Goodman with the CNA Corporation, a not- for-profit, independent—

Chairman MURRAY. Can you pull your microphone closer?

Ms. GOODMAN. —research and analysis organization supporting national security and public sector leaders and organizations. I am privileged to serve as the founder and executive director of CNA's Military Advisory Board. In this capacity, I am here today representing not only my own views but the collective wisdom of the 16 generals and admirals who serve on CNA's Military Advisory Board.

The board first convened in 2006 to look at pressing national security issues, including climate change. Our first report, published in 2007, identified climate change as a threat multiplier, especially in fragile regions of the globe. Since that first report, we have had over 30 generals and admirals serve on the on the board, collectively with more than 1,000 years of experience in evaluating security threats and mitigating risks.

Our most recent report, which I submit for the record along with my written testimony, identifies the accelerating risk of climate change and observes that in some circumstances climate change has and will increasingly serve as a catalyst for conflict.

From a national security framework, the costs of inaction on climate change can be grouped into three areas:

First, how climate change may cause increased instability around the world, which will likely lower economic prosperity and trade opportunities while increasing demand for U.S. military and diplomatic involvement;

Second, changes we are seeing in the Arctic today as a special case, an important case;

And, finally, how climate change will impact our military.

My discussion today is informed by the MAB and reflects our most recent findings, but what follows are my own views and observations.

In the 7 years that have passed since our initial assessment, we have witnessed more frequent and intense weather events, including heat waves, sustained heavy downpours, floods in some regions, and droughts in other areas. Nine of the ten costliest storms to hit the United States have occurred in the past 10 years, including Hurricane Katrina and Superstorm Sandy. Speaking for the MAB, we assess that the nature and pace of observed climate changes post severe risks for our national security.

Having served for 8 years as Deputy Under Secretary of Defense for Environmental Security, and 8 more years as executive director of the Military Advisory Board, I have learned how our senior military leaders approach risk and uncertainty. To them, managing risk is seldom about dealing with absolute certainties but, rather, involves careful analysis of the probability of an event and the consequences, should the event occur. When it comes to our national security, even low-probability events with dire consequences must be considered and addressed.

Today the risks posed by predicted climate change in the MAB's judgment represent even graver potential than they did 7 years ago and require action today to reduce risk tomorrow.

It is undeniable that the world around us in changing. In recent years, we have observed changing weather patterns manifest by prolonged drought in some areas and heavier precipitation in others. In the last few years, we have seen unprecedented wildfires threaten homes, habitats, and food supplies—not only across the United States, but also in Australia, Europe, Central Russia, and China. Low-lying island nations are preparing for complete evacuation to escape rising sea levels. Globally, we have seen recent prolonged drought act as a factor driving both spikes in food prices and mass displacement of populations, each contributing to instability and eventual conflict.

The MAB is concerned about the projected impacts of climate change over the coming decades on those areas already stressed by water and food shortage and poor governance. In the medium term, those areas threatened by rising sea level are most at risk. There will be only so much we can do to keep the sea out, and in some areas the sea will not flow over the walls we build. It will flow under or around and make the land and aquifers not usable. Low-lying islands in the Pacific and great deltas, including the Mekong, the Ganges, the Nile, and the Mississippi are at increasing risk of not being able to support the populations that live there. Migration will become a larger form of adaptation.

The Arctic is a case that deserves special attention. Allow me to tell a short sea story to illustrate.

While serving as Deputy Under Secretary of Defense in the aftermath of the Cold War, I led the U.S. team that worked with Russia, Norway, and others to manage waste streams from decommissioned Russian nuclear submarines, including some that had been dumped into the Kara Sea, north of the Arctic Circle. In the course of that work, I became acutely aware of the unique Arctic environment. Today, with increased shipping and greater opportunities for extraction of resources in the Arctic, the risk for a manmade crisis or disaster, such as a major oil spill, is rising.

A recent report by the National Research Council finds that a spill the size of Deepwater Horizon would have devastating effects and last for decades. The world is not yet prepared to respond to a major accident in the Arctic.

Some great work has been done to plan for increased future operations in the Arctic. The problem is that the increased human presence is happening now. Seventy-three ships sailed through the Northwest Passage in 2013, up from just four in 2007. And preparations for energy exploration are well underway. My colleagues on the MAB warn that today we do not have the communications equipment, navigation aids, and sufficient hardened-hull ships to respond to natural or manmade disasters in that fragile area or to protect our vital interests in the region.

Finally, the MAB has found that projected climate changes will have three major impacts on the military: more demand, challenges to readiness, and new and harsher operating environments.

We expect to see an increased demand for forces across the full spectrum of operations. Domestically, responses to extreme weather events and wildfires in the U.S. will increase demand for the National Guard and Reserves. The frequency, severity, and probability that these events may happen simultaneously will also likely increase demand for active-duty forces to provide defense support of civil authorities. This concerns us—

Chairman MURRAY. Ms. Goodman, if you can wrap up, we want to make sure we have time for questions.

Ms. GOODMAN. Sure. All right. In a leaner military, many of our capabilities reside in the Guard and Reserve, and if they are being used domestically, they are less available to respond to worldwide crises.

In addition to more demand, this will itself stress readiness. Our bases will be increasingly at risk from the effects of climate change. Our bases are vulnerable to sea level rise and extreme weather, including drought and wildfire. These vulnerabilities were assessed in that recent GAO report.

On the positive side, we have seen increased awareness of climate risks in communities around the U.S. and constructive planning underway in various regions—

Chairman MURRAY. Ms. Goodman, I am going to have to have you wrap up.

Ms. GOODMAN. Okay.

Chairman MURRAY. We have two more witnesses and a lot of questions.

Ms. GOODMAN. I will conclude by quoting the foreword to the CNA MAB report, written by former Secretary of Homeland Security Mike Chertoff and former Secretary of Defense Leon Panetta, our most important message for this Committee is that this is a bipartisan call to action. We make a compelling case that climate change is no longer a future threat. It is happening now. Actions to build resilience against the projected impacts of climate change are required today.

Thank you.

[The prepared statement of Ms. Goodman follows:]

Sherri W. Goodman

Executive Director, CNA Military Advisory Board

Before the U.S. Senate Budget Committee

July 29, 2014

The Cost of Inaction: The Economic and Budgetary Consequences of Climate Change

Chairman Murray, Ranking Member Sessions, and Committee members, I thank you for inviting me to testify today.

INTRODUCTION: CNA MILITARY ADVISORY BOARD: MILITARY LEADERSHIP AND CLIMATE RISKS

I am Sherri Goodman, and I am privileged to serve as the founder and Executive Director of CNA's Military Advisory Board—MAB for short. In this capacity, I am here today representing not only my views on the national security implications of climate change, but also the collective wisdom of the 16 Admirals and Generals who serve on CNA's MAB.

This board first convened in 2006 to look at pressing national security issues, including climate change. Our first report, published in 2007, identified climate change as a threat multiplier, especially in fragile regions of the globe. Since that first report, we have had over 30 Generals and Admirals serve on the on the board, collectively with more than one thousand years of experience in evaluating security threats and mitigating risks. Our most recent report, which I would like to submit for the Record, identifies the accelerating risk of climate change and observes that in some circumstances climate change has, and increasingly will, serve as a catalyst for conflict.

With carbon emissions, American interests should come first

Alan D. Viard | Real Clear Markets
March 12, 2014

Shutterstock.com

Article Highlights

- **Agencies should use a domestic cost measure that includes only harms to Americans, unless and until there's an international agreement to address climate change.**

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The White House Office of Management and Budget (OMB) recently collected public comments on the social cost of carbon, a measure that federal agencies use in cost-benefit analyses of regulations that affect greenhouse gas emissions. The social cost of carbon is intended to measure the dollar value of the harm caused through climate change when an extra metric ton of carbon dioxide is emitted in the United States. Unfortunately, the executive branch has not properly answered the question: Harm to whom?

Federal agencies currently use a global measure of the social cost of carbon that includes the harm that U.S. emissions impose on everyone in the world. As I explained in my comment to OMB, however, the agencies should use a domestic cost measure that includes only harms to Americans, unless and until there's an international agreement to address climate change.

A number of federal agencies initially used domestic cost measures. In 2010, however, an interagency working group adopted a global cost measure to be used by all agencies. Choosing the right measure is important - global costs are estimated to be 10 to 14 times larger than domestic costs.

The problem with using a global measure is that it requires Americans to sacrifice their wellbeing for the sake of people elsewhere in the world. Suppose, for example, that each ton of U.S. emissions imposes $4 of climate costs on Americans and $36 of climate costs on the rest of the world, so that the domestic cost is $4 and the global cost is $40. Consider a regulation that reduces emissions by a ton while imposing $20 of costs on the U.S. economy. Under the domestic measure, this regulation - like any regulation costing more than $4 - would be rejected. Under the global measure, though, the regulation would be adopted on the grounds that Americans' $16 sacrifice is outweighed by the $36 gain enjoyed by the rest of the world.

Should federal regulators impose these costs on Americans for the greater good of the world? Certainly, the lives and health of human beings outside the United States have the same moral value as the lives and health of human beings inside the United States. And, we are inspired when we see people working across international borders to combat poverty, disease, and oppression. Nevertheless, those sentiments offer a flawed guide for public policy because they fail to recognize that the U.S. government's primary mission is to serve the American people.

As set forth in our Constitution, the U.S. government was established by and for "the people of the United States." That principle is so obvious that it's rarely even discussed. We take for granted that our government places higher priority on aiding Americans without health insurance than on assisting the vast populations overseas who lack even the rudiments of basic medical care. One economic study estimated that, if our government cared equally about Americans and the rest of the world, it would have spent $16,000 per American on foreign aid in 1999, almost 500 times more than the amount it actually spent.

The principle that the U.S. government should primarily serve the American people does not reflect any special worth of Americans. Instead, it reflects the special relationship that the citizens of any country have with their own government. International law recognizes that governments are entitled to serve their citizens to the exclusion of other people.

So, why did the interagency working group depart from these longstanding principles?The group asserted that the global cost measure was appropriate because "climate change presents a problem that the United States alone cannot solve. Even if the United States were to reduce its greenhouse gas emissions to zero, that step would be far from enough to avoid substantial climate change. Other countries would also need to take action." But, those observations refute, rather than support, the group's position. If our government uses a global measure without other countries agreeing to do the same, we're just ramping up the unilateral approach that the working group admitted can't solve the problem.

Things would be different if an international climate agreement called on all countries to use a global cost measure - then each country, including ours, could benefit as everyone reduced their greenhouse gas emissions together. It would make sense to cooperate with other countries for everyone's mutual benefit, but it does not make sense to sacrifice Americans' wellbeing in futile efforts to unilaterally solve global problems.

Furthermore, Congress and the president have not adopted legislation instructing federal agencies to consider the impact of climate change on people outside the United States. (In fact, when members of Congress and President Obama warn about the harmful effects of climate change, they consistently emphasize droughts, fires, and hurricanes in this country, a pattern that continued to hold in the **Senate's recent all-night discussion of climate change**.) Without legislative authorization, the interagency working group lacks the democratic legitimacy to make a sweeping moral decision requiring the American people to sacrifice their wellbeing for the sake of the rest of the world.

In the absence of an international climate agreement, federal agencies should use a domestic measure of the social cost of carbon. That approach would return federal policy to its proper focus - the wellbeing of the American people.

Alan D. Viard is a resident scholar at the American Enterprise Institute.

Obama and the EPA: It's about rewarding friends and punishing enemies

Benjamin Zycher | Los Angeles Times
June 09, 2014

whitehouse.gov

President Barack Obama, with Environmental Protection Agency Administrator Gina McCarthy, center, talks with EPA staff members who worked on the power-plant emissions standards, in the Rose Garden of the White House, June 2, 2014.

Article Highlights

- **Those costs are certain to be large; that is why the proposed rule is so contentious.**
  Tweet This
- **It is no accident that the states that will bear the brunt of the costs are red politically.**
  Tweet This
- **The Obama "carbon" policy promises to raise costs in the latter states disproportionately.**
  Tweet This

The Environmental Protection Agency published its Clean Power Plan Proposed Rule last week. By how much would the rule reduce future temperatures? If we apply the climate model developed at the National Center for Atmospheric Research — used by both the United Nations and the EPA —the new rule, even if implemented immediately, would reduce global temperatures in 2050 by less than a hundredth of a degree, and less than two-hundredths of a degree by 2100. Those trivial temperature effects are much smaller than the annual variability (11-hundredths of a degree) of the surface temperature record. They could not be measured reliably.

The supporters of the rule argue that it is just a part of a larger effort to reduce global greenhouse gas emissions by an amount sufficient to limit temperature increases to 2 degrees. But under the assumptions of the plan's supporters, that would require a global emissions reduction of almost 80%, a goal impossible both economically and politically.

In brief, the rule would mandate an aggregate reduction of 30% in power plant emissions below 2005 levels by 2030, with specific reduction requirements imposed on each state. It allows "flexibility" for the states in how they lower emissions (through efficiency standards, cap-and-trade programs, etc.), ostensibly to reduce the costs of meeting the requirements. But it is obvious that a major purpose of the flexibility is to obscure the ways in which implementation will proceed, and thus to hide the true cost of the emission reductions. Those costs are certain to be large; that is why the proposed rule is so contentious. One recent estimate from the U.S. Chamber of Commerce is that the rule will cost more than $50 billion a year in reduced gross domestic product.

More interesting is the wide difference in cost effects across the states. As coal-fired electricity is more emissions-intensive than other kinds of power generation, the rule will increase power costs more in states especially dependent on coal-fired power, and impose higher economic costs in states in which the coal industry is a bigger part of the economy.

It is no accident that the states that will bear the brunt of the costs are red politically. Thus, the effect of the rule will be to increase energy costs in red states relative to those in blue states.

A recent MIT study concludes that under a policy to reduce greenhouse gas emissions, "California, the Pacific Coast, New England and New York generally experience the lowest cost ... while [Arkansas, Louisiana, and Oklahoma], Texas and Mountain states face the highest." With the exception of Oregon and Washington state, which have access to large amounts of cheap hydroelectric power, electricity prices are about $150 per megawatt-hour in the former states, and only about $80 in the latter group.

The Obama "carbon" policy promises to raise costs in the latter states disproportionately, because they will have to reduce emissions by far more, thus reducing their advantages in terms of economic competition.

The combination of large costs and zero climate benefits explains why the president argued in a recent radio address that the new rule would prevent "up to 100,000 asthma attacks and 2,100 heart attacks" in the first year, rising thereafter, presumably because of ancillary reductions in such other effluents as particulates, mercury and nitrogen oxides. (Carbon dioxide does not cause adverse health effects even at concentrations many times higher than those current or projected.)

But those pollutants already are regulated under other sections of the Clean Air Act, and the legal requirement is that those regulations "protect the public health" with an "adequate margin of safety," without consideration of costs. Is it the position of the Obama administration that those regulations do not satisfy the requirements of the law? Or is the EPA double-counting the health benefits from other regulations already in force? Or is the EPA assuming further health benefits from reducing pollution levels that already are lower than those at which the epidemiological analyses suggest no adverse effects?

No one knows, because the EPA analytic methodology to a substantial degree is obscure and the EPA's answers to analysts' questions often are unclear.

Given the minuscule effect of this policy on global temperatures under the standard climate models, it is clear that the administration's touting of other health benefits is a political maneuver. As used by proponents of the plan, the terms "carbon" and "carbon pollution" are little more than propaganda. "Carbon" is not carbon dioxide, a natural substance not toxic to humans at many times current ambient concentrations; and to define carbon dioxide as "pollution" is an attempt simply to assume the answer to the central policy question.

The real pollution attendant upon this proposed regulation is that of our political institutions. A Congress unwilling to enact such rules, or a carbon tax, has been shunted aside by raw administrative fiat in pursuit of rewards for friends and punishment for enemies. Will future administrations allow themselves to be constrained by the separation of powers? It is difficult to see why they would.

Benjamin Zycher is a scholar at the American Enterprise Institute.

Chairman MURRAY. And I would remind everyone, all of your testimony is printed in the record. All the members have had a chance to see it as well, so, again, thank you.

Dr. Montgomery?

STATEMENT OF W. DAVID MONTGOMERY, PH.D., SENIOR VICE PRESIDENT, NERA ECONOMIC CONSULTING

Mr. MONTGOMERY. Thank you, and thank you for your invitation to appear before the Committee today.

I am senior vice president at NERA Economic Consulting. I have spent most of the past 25 years working on studies of climate change issues, ever since I was Assistant Director for Natural Resources and Commerce at CBO and we did a study of the economic impacts of the carbon tax. And I have continued with that kind of work since then. I was the principal lead author of the Second Assessment Report of the IPCC. I and my team have been part of the Integrated Assessment Modeling Consortium. We have published a number of studies on climate change issues.

And what I would like to do today, as I tried to do when I appeared before the Committee for CBO, is to clarify some policy choices that I think the Budget Committee in particular faces in dealing with climate change.

I do not think it is helpful to catalog all of the terrible things that climate change might do. The question for designing policy is what damages would be avoided by particular policy choices and at what cost, and that involves looking at real alternatives, including inaction.

The example that I took in my testimony is something that is not exactly a fully fleshed out plan, but it is clearly stated and present. That is the Climate Action Plan announced by the President. Its goal is to reduce greenhouse gas emissions from the United States to 17 percent below 2005 levels by 2020.

It and the kind of actions of the past few years by the administration make it clear that the approach will all be regulatory. It will be command-and-control regulations from EPA on the electric power sector, fuel economy standards, renewable fuel standards on transportation, energy efficiency standards.

I understand that Dr. Lomborg is going to talk about the potential costs and avoided damage from an ideal global policy. Well, we have found in our research that this kind of a regulatory approach would cost four times or more what that ideal policy would cost. And so the estimates that I have made for this hearing today are that by 2010 implementing the Climate Action Plan goals in this way would reduce Federal tax revenues by about $150 billion. It would cost households about $1,000 per year in real disposable income. It would probably involve a 7-percent or more increase in electricity prices. And I would be happy to supply the Committee with more details of this analysis.

And that is not even taking into account the revenue effects of potentially extending tax breaks for renewable energy, potential impacts of loan guarantees on the budget, all of which are rationalized as part of climate policy.

Now, what would the effects of this be? I have to say even the IPCC has concluded that it is not possible in the current state of the art to do a calculation that goes from changes in emissions to changes in global damages. It is just beyond the state of our empirical knowledge and modeling capability. Nevertheless, I think we can tell the difference between big numbers and small numbers.

When I calculate the cumulative emission reduction that the U.S. would achieve through the Climate Action Plan achieving its goal versus cumulative global emissions over the next 50 years, I see what we would achieve with the Climate Action Plan is about a 2-percent reduction in global cumulative emissions.

That is assuming, and I think quite realistically, that China, Russia, and India continue on the course that they are already committed to for economic growth, in Russia's case territorial expansion and use of exports of fossil fuels to fund its adventurism.

Anyway, this 2-percent change in global emissions would at most, based on the IPCC's own calculations, produce about a difference of a tenth of a degree in global average temperatures. It is beyond the capability of any model of impacts to tell the difference that that would make in the global impacts.

So based on this, I think it is a very good idea to focus on adaptation, and the Climate Action Plan does. We do not face the obstacles that poor countries around the world face to adaptation, but we do have policies in place that increase our vulnerability. In particular, flood insurance, crop insurance, our method of disaster relief all create moral hazards, and they, I think, make a substantial contribution to what the IPCC itself recognizes as being the cause of the concern about weather events that we have been talking about for the last 15 or 20 minutes.

In its Fifth Assessment Report, the IPCC states, "Economic losses due to extreme weather events have increased globally, mostly due to increase in wealth and exposure, with a possible influence of climate change (low confidence in attribution to climate change)."

So it is the choices that we have made as private citizens to put our residences at risk. And if we are going to adapt effectively in the U.S., I think we need to pay careful attention to what is the proper role of Government and what is it that can be done best by the private sector and needs to be left to the private sector.

I think that we can protect ourselves and our property quite well if we are not insulated by Government programs from the consequences of our choices. I live on the Chesapeake Bay, and I know the risks that I am taking there. And I get very cheap flood insurance from the Flood Insurance Program that I should pay a lot more for.

And once this is sorted out, then I think there certainly are public goods. There is public infrastructure that only the Government can invest in efficiently. But I would simply here issue a warning that we are looking at things—we are looking at public investments in things like roads, public health, bridges and dams, flood protection, fire protection. All of these have their own constituencies, agencies that carry them out, and congressional appropriators who deal with them. And I would just suggesting it would be a very good role for the Budget Committee to look critically at these proposals for increased spending for adaptation to make sure that they are not just agency creep and really are focused on doing something.

Thank you, and I will stop.

[The prepared statement of Mr. Montgomery follows:]

Prepared Testimony of
W. David Montgomery, Ph.D.
Submitted to the
Committee on the Budget
United States Senate
The Costs of Inaction:
The Economic and Budgetary Consequences of Climate Change
July 29, 2014

Chairman Murray, Ranking Member Sessions and Members of the Committee:

Introduction:

I am honored by your invitation to testify on this very important topic. I am an economist and Senior Vice President at NERA Economic Consulting. I have worked on climate change issues and policy since 1988, when I was Assistant Director for Natural Resources and Commerce at the Congressional Budget Office and led CBO's study of the economic impacts of a carbon tax. Prior to that I was chief economist in the Office of Program Analysis and Evaluation in the Office of the Secretary of Defense and headed energy modeling and forecasting activities in the Energy Information Administration.

After leaving government service, I continued to concentrate on climate policy for most of the last 25 years. I served as a Principal Lead Author of the IPCC's Second Assessment Report and as a Peer Reviewer of subsequent reports including the most recent. I have led numerous studies in which I and my colleagues at NERA used our economic models to estimate the costs and emission reductions of proposed climate policies including those included in the President's Climate Action Plan. I have published many articles on these topics in refereed professional journals, and had the privilege of contributing a chapter on black carbon mitigation to a volume on climate change edited by Professor Lomborg a few years ago.[1]

1 "Black Carbon Mitigation." With R. Baron and S. Tuladhar. Chapter 4 in Smart Solutions to Climate Change – Comparing Costs and Benefits, Bjorn Lomborg (ed.), Cambridge University Press, 2010.

In the past few years I have taken a particular interest in the relative merits of mitigation and adaptation as responses to climate change risks, and in particular in the role of political and economic freedom in making it possible for poor countries to grow economically and at the same time to reduce their carbon intensity and become more resilient in adapting to climate change.

I am testifying on my own behalf today, and statements in this testimony represent my own opinions and conclusions and do not necessarily represent opinions of any other consultant at NERA or any of its clients.

Summary

Today's hearing centers on the potential damage that climate change could cause and how that possible damage could affect the economy and the Federal budget. This is a very broad topic, and the questions that it raises cover nearly every aspect of our knowledge about climate change:

- How imminent and likely is damage from global warming?
- What is the government's role in reducing the potential damage from climate change?
- How much should be spent on public investments to "protect people" from climate risks?
- How much damage can be avoided by reducing greenhouse gas emissions?
- What will it cost the Federal budget and the U.S. economy to reduce emissions?
- How confident can we be that spending more now will reduce the likelihood or magnitude of future costs enough to justify the expenditure?

It is far from clear that recent weather events are anything more than normal variability in storm frequency and intensity, and the nature, timing and extent of damage from climate change remains highly uncertain. This does not imply that no action is justified, but it does imply that costs and avoided risks must be balanced carefully.

Unlike reducing greenhouse gas emissions, for which there are not adequate private incentives in the absence of government policies, there are quite sufficient incentives for private households and businesses to pay attention to risks of climate change. The role of government should be limited to revising priorities for public investments in light of climate risks, and reforming existing policies and programs that distort incentives for risk minimization, such as subsidized flood insurance.

Since the public investments that could be justified as a defense against climate change will be under the jurisdiction of the same Congressional committees and executive agencies now dealing with similar activities, there will be natural incentives in Congress and the agencies to propose increases in spending beyond what a critical evaluation of costs and risk reduction would justify. Expanding the role of government into activities that could be done perfectly well by the private sector will not save budgetary resources, nor will overinvestment in areas where government does have a responsibility. There are also questions of timing. At a time when we face threats around the world, national security might be better served by reversing planned reductions in military manpower and force structure than by increasing funding for climate related activities in DOD. Thus critical evaluation of such budget proposals will be very important.

Policies to reduce greenhouse gas emissions, such as the Administration's Climate Action Plan (CAP), have also been rationalized on the grounds that spending now will avoid higher costs later. I have used our $\mathrm{N_{ew}ERA}$ model of the U.S. economy to estimate the economic cost and budgetary impact of policies sufficient to achieve the CAP goal of reducing emissions to 17% below 2005 levels by 2020. The regulatory policies favored by the Administration would be likely to reduce the average household's disposable income by about $1000 in 2020, reduce Federal revenues by over $150 billion due to reduced economic growth, and cause electricity prices to rise by about 7%.

Holding U.S. emissions at 17% below 2005 levels all the way to 2040 would reduce cumulative global emissions over that period by less than 2%, because of the declining share of the U.S. in global emissions. That would take as little as three-hundredths of a degree and no more than one ten-tenth of a degree off the rise in global average temperatures that might occur otherwise. Damages to the U.S. would probably be reduced by about the same 2 percent.

This leaves the question of whether there is a national security interest in climate change due to its likelihood of increasing conflicts or effects on U.S readiness. It is true that most of the damage from climate change will not occur in the U.S. but rather in poor countries in equatorial regions -- in other words, in regions where failed states, rapacious dictators, and ethnic and religious violence are endemic. The paltry difference in global warming that the US can make by reducing emissions will not help those countries. I believe that we have both a national interest and moral obligation to provide effective, community based aid to those countries to assist them in adaptation. The overwhelming evidence, however, is that resilience to climate change -- that is, ability to adapt -- is greatest in countries whose open political systems and free market economies provide both the incentives and the stability for private investments in adaptation, and impossible to achieve in others. Thus it would be far better to concentrate on ways to bring about open political and economic systems in these poor countries than to engage in more of the planned, top down aid that has failed to alleviate poverty or violence up to now. Absent such changes, providing adequate budgets for national defense to deal with threats from those regions will remain the same high priority no matter how they are affected by climate change.

Budget Impacts Come from Policy Choices

Climate analysts use the word "mitigation" to describe actions intended to reduce greenhouse gas emissions or their effects on global temperature, and "adaptation" to describe human responses that can lessen the damage from higher temperatures. It is convenient to put policy choices into one or the other of these categories. Mitigation policies are intended to avoid future damage from climate change by reducing greenhouse gas emissions and limiting the range of likely increases in global average temperatures. Adaptation policies are intended to reduce the damage from climate change if and when it does occur. Both types of policies can have effects on the economy and the budget, but they differ greatly in their cost-effectiveness in reducing risks.

Possible climate impacts form the basis for either mitigation or adaptation. For example, the President's Climate Action Plan states that " we are already feeling [climate] impacts across the country and the world." In this, the President goes well beyond what the IPCC has stated. We have indeed experienced weather events that might in the future be made worse by rising global temperatures, but the evidence that any recent events are caused by global warming is not convincing even to the IPCC.[2] The events are well within normal variability of the weather system, do not need a driver of rising global temperature to happen. Most of record damage due to storms is clearly attributable to greater development in areas known to be vulnerable and not to an increase of the hazard. Fixing the incentives to locate in locations at risk is far more cost-effective than encouraging and then protecting unwise investments through mitigation or adaptation.

Although it is true that demanding certainty before acting is rarely a good risk management strategy, always assuming the worst and acting as if it is sure to happen without immediate action is equally bad risk management. So is insisting on doing something even though it is too late or too little to matter.

A prudent balancing of costs and risks is necessary, and that is very hard to do given the present lack of quantification and high uncertainty about what the effects of climate change will be. The range of temperature increases predicted as a result of a doubling of greenhouse gas concentrations is wider in the most recent IPCC Fifth Assessment Report than it was in the Fourth, from 1.5 to 4.5 degrees Celsius, and global temperature increase has stalled for the past 15 years. If the cause is that uncertain, the effects cannot be any less uncertain. Although studies of the potential damages of events hypothesized to be caused by climate change, known as "effects research," have proliferated, integrated assessment modelers have not yet succeeded in extending their models that predict

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[2] For example, in its Fifth Assessment Report (FAR) the IPCC states that " Economic losses due to extreme weather events have increased globally, mostly due to increase in wealth and exposure, with a possible influence of climate change (low confidence in attribution to climate change)."

temperature change to generate estimates of the effects of temperature increase and the damages that they would cause.[3] Moreover, the effects of temperature increase are likely to be so localized and model results are so inconsistent about global effects that global or national planning is most likely to do the wrong thing in the wrong place.[4] Reduction of greenhouse gas emissions from the United States faces the high likelihood that the countries that will emit the most emissions over the next decade, including China, India and Russia, will do nothing to reduce their emissions, leaving climate risks about the same no matter what the U.S. does.

Mitigation Policy

Thus the first questions about mitigation policy have to be about its present economic costs and budgetary effects and its possible future benefits. Implementation of the President's Climate Action Plan in particular would have significant effects on revenues and outlays as well as negative impacts on the economy as a whole.

Economic and Revenue Impacts of Mitigation Policy

In order to assess the consequences of the Climate Action Plan, my colleagues and I used NERA's N_{ew}ERA model of the U.S. economy. N_{ew}ERA is a computable general equilibrium model of the U.S. economy that has been used by a wide range of clients for assessments of energy and environmental policies, including the U.S. Department of Energy in its evaluation of the public interest in allowing natural gas exports.[5] For this study, we used a version of the model that has a baseline for taxes and expenditures based on CBO's long term budget outlook and a detailed representation of income taxes and drivers of spending.

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[3] Again the FAR states "In recent decades, climate change has likely contributed to human ill-health although the present world-wide burden of ill-health from climate change is relatively small compared with effects of other stressors and is not well quantified."
[4] Robert Mendelsohn, op cit.
[5] For a description of the model and how we represent policies like the CAP in it, see Sugandha D. Tuladhar, Sebastian Mankowski, and Paul Bernstein. The Interaction Effects of Market-Based and Command-and-Control Policies. Energy Journal, Vol. 35, No. SI1.

Economic Impacts

We took the Climate Action Plan goal of a 17% reduction in greenhouse gas emissions below 2005 level by 2020, and assumed the same cap would remain in place thereafter. We found that is the goal were achieved in the most cost-effective possible way, by achieving an equal marginal abatement cost across all possible ways of reducing emissions, there would still be impacts on energy prices, GDP, and federal, state and local tax revenues:

- Energy prices: 7% higher residential electricity prices in 2020, 23 cent per gallon or higher gasoline prices, and about a 10 cent per million BTU increase in natural gas prices due to increased demand for natural gas for power generation.
- Real disposable income: Less by over $200 per household in 2020
- Tax revenue: Federal revenue down by $40 billion in 2020 and State and local revenue by $4 billion.

Energy prices occur because limiting greenhouse gas emissions requires moving to higher cost sources of energy, and abandoning capital investments that rely on coal or oil to replace them with more costly sources of energy. These costs are all passed on to consumers in the form of higher prices. These cost increases and the demand for resources to replace existing capital prematurely ripple through the economy and reduce wages, returns to capital and GDP. Higher prices and lower wages and returns on investment lead to lower disposable income for households and to a shrinking of the tax base that reduces Federal and state revenues.

Costs would be higher with actual policies that leave some sectors out and drive others too far. The CAP is not a broad and uniform policy that puts a uniform price on carbon dioxide emissions wherever they occur in the economy, that would concentrate effort on reducing emissions where it is most cost-effective. Instead, the Climate Action Plan lists a series of regulatory measures to force electric utilities, consumers and motorists to switch fuels and use less energy. The stated components of the CAP include

- EPA's CO2 emission standards for new and existing powerplants
- Tightening new car fuel economy standards
- More strict appliance efficiency standards

It is dubious that these specific measures alone[6] could achieve the stated goal, but they do identify a regulatory approach to climate policy that would be much more costly than the estimates I gave for a minimum cost approach if it were expanded sufficiently to achieve the 17% reduction. In a paper published last year in the Energy Journal, my colleagues compared the cost a policy that achieved emission reductions at least cost to the cost of various regulatory policies that achieved the same goal.[7]

The key figure from their paper is reproduced below. The horizontal axis measures cumulative emission reductions from 2010 - 2050 in millions of metric tons, and the vertical axis measures costs in net present value over the same time period, in trillions of dollars. The curved line represents the minimum cost, with ideal policies, at which emission reductions could achieved. Any point below the line represents a policy that achieves the same emission reduction at higher cost. The policies labeled TRN includes transportation measures such as fuel economy standards and renewable fuel standards. The policy labeled CES is a policy that requires utilities to source progressively larger percentages of their generation from "clean" sources including natural gas and renewables. The point labeled RPS is a more conventional renewable portfolio standard for electricity generators. The policy labeled REG contains all of the above plus tightened energy efficiency standards. Thus REG contains the same regulatory elements as the Climate Action Plan, and applies them to the electricity generation sector, transportation sector, and household sector with sufficient severity to lead to cumulative emission reductions of about 30 million metric tons between 2010 and 2050.

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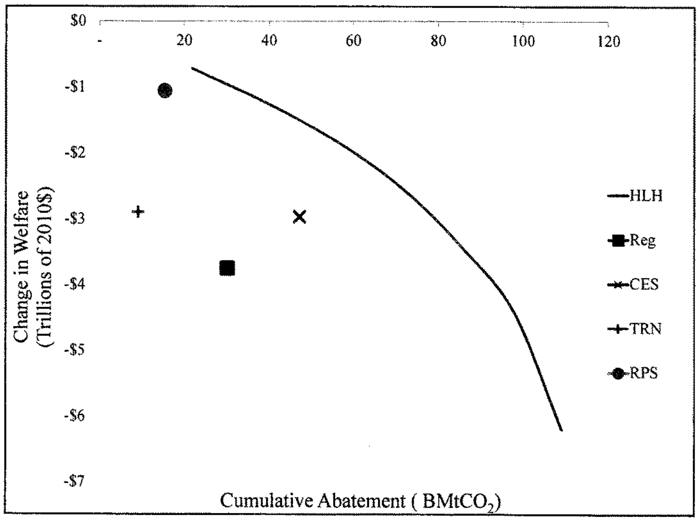
[6] THE PRESIDENT'S CLIMATE ACTION PLAN Executive Office of the President June 2013. pages 6 - 9.
[7] Tuladhar et. al.

Changes in Discounted PV of Welfare from 2010-2050 for Regulatory Mandates Compared to Efficient Frontier (Trillions of 2010$)



If the goal of the Climate Action Plan is to reduce emissions to 17% below 2005 levels by 2020 were met, and emissions were held at this level from 2020 to 2050, we estimate that cumulative emissions would be reduced by about the same 30 million metric tonnes as the REG policy in our study. Thus the REG policy in the figure above gives a good indicator of what the cost would be if the Administration's regulatory approach were made sufficiently stringent to actually achieve its stated goal.

The picture reveals that taking a regulatory approach, with CO2 emission regulations, requirements for generation of electricity from "renewable" sources, new car fuel economy standards and "renewable" fuel standards together with even tighter efficiency standards on appliances and other consumer durables would cost about 4 times as much as a least cost policy.

That implies a cost by 2020 of about $1000 per household and, if budgetary impacts of the regulatory policy are proportional to its other impacts, a loss of over $150 billion in revenue in FY 2020.

Revenue Impacts

Impacts on GDP and personal income translate into lower tax revenues. Our analysis has shown that even an ideal carbon tax would have to devote up to 40% of its revenues to make up for lost revenues elsewhere in the economy due to drag on the economy. Regulatory measures that provide no revenue offset and lead to greater losses in GDP would have even larger effects on revenues.[8]

Thus the mitigation policy approach of this Administration will unambiguously reduce revenues, probably on the order of $150 billion by FY2020.

Outlays for Mitigation

These would not be the only effects of mitigation policies on the budget. There are many proposals mentioned in the CAP and proposed policies that also increase the budget deficit from the outlay side. These include:

- Extended tax preferences for solar, wind, and other renewables. These subsidies hide the higher cost of renewables relative to fossil fuels and shift both that cost and windfalls to economic renewables onto the taxpayer. But those costs do not go away. The impacts of using such measures to achieve CAP goals were not included in my estimates of lost revenue, and would make revenue losses even larger if they were extended.
- Loan guarantees are likely to have adverse consequences for the budget as well. They contain a built-in bias toward failure. Providing an upfront credit subsidy will not keep a project in business if it cannot cover its operating costs, as recent failures in battery and solar technology prove. Even the requirement for a loan

[8] This is a standard finding in the literature on the "double dividend" literature, see Lawrence H. Goulder, "Environmental taxation and the double dividend: A reader's guide" International Tax and Public Finance August 1995, Volume 2, Issue 2, pp 157-183

guarantee fee to cover expected losses leads to adverse selection, because the fee those with a worse than average probability of default will be most willing to pay it, and companies with better than average likelihood of success will not.[9]

- Demonstration projects are at the wrong end of the RDD&C spectrum for government to be involved. The appropriability of R&D increases as it comes closer to being commercial, and the need for government involvement disappears. Demonstration projects in practice have led to diversion of R&D funds from more fundamental research that could lead to real breakthroughs and cost reduction, and do not lead to adoption of the demonstrated technology when no long term incentives for replacing fossil fuels like carbon taxes are in place.[10]

These budgetary and economic impacts of tax subsidies and loan guarantees would increase the loss in revenue above $150 billion in 2020, and are additional to the revenue losses due to regulatory programs that divert productive investment and put a brake on economic growth. .

Possible Avoided Damages

There is very little policy or budget guidance to be found in discussions of the costs of unchecked climate change. The better question is what damage could be avoided if specific goals were achieved, and what the cost would be of policies that could realistically be expected to reach those goals.

[9] See my chapter in Pure Risk: Federal Clean Energy Loan Guarantees, Nonproliferation Policy Education Center Apr 2012

[10] See Kenneth J. Arrow, Linda Cohen, Paul A. David, Robert W. Hahn, Charles D. Kolstad, Lee Lane, W. David Montgomery, Richard R. Nelson, Roger G. Noll and Anne E. Smith. "A Statement on the Appropriate Role for Research and Development in Climate Policy" Economists Voice, February 2009. Lee Lane, W. D. Montgomery and A. Smith, "R&D Policy." in A Taxing Debate: Climate Policy Beyond Copenhagen. Growth No. 61, Committee for Economic Development of Australia, August 2009.

This is pretty much basic environmental economics. The next point is also pretty uncontroversial, that the avoided damages are much more uncertain than the costs. We can and do employ scenario analysis to provide an understanding of how the cost of achieving a specific reduction in emissions depends on uncertainties about future technology developments and about how much it will cost households and business to change behavior and investments in buildings and equipment. But for avoided damage the uncertainties are much wider.

It is, however, possible within these ranges to distinguish the difference between very big and very little. EIA projects that cumulative US emissions between 2015 and 2040 will be approximately 14% of cumulative global emissions. Using EIA's most recent projection of BAU US emissions, the goal of the Administrations Climate Action Plan to reduce emissions to 17% below 2005 by 2020 and assuming they are kept at that level would reduce global cumulative emissions from 2015 to 2040 by less than 2%. Thus whatever the range of global temperature increase is projected to be between now and 2040, the CAP would reduce that increase by less than 2%, and therefore would likely reduce avoided damages by a similar percentage. Thus if the range is 1.5 to 4.5 degrees C, the effect of the CAP would be to change the range to 1.5 to 4.4 degrees, if we stick to rounding to one decimal place. There is no climate model that can tell the difference in effects between those two ranges.

Thus mitigation in the U.S. alone is not likely to reduce U.S. contingent damages by as much as the policies cost, especially if stringent regulatory policies are adopted.

Adaptation Policy

If we accept that the Administration's policies will not affect damages to the U.S. or the rest of the world, adaptation becomes a high priority. In addition to its goal for reducing greenhouse gas emissions, the CAP states that "...we must also prepare for the impacts of a changing climate that are already being felt across the country [sic]. Moving forward, the Obama Administration will help state and local governments strengthen our roads, bridges, and shorelines so we can better protect people's homes, businesses and way of life from severe weather."

It is good to focus on adaptation. The U.S. can be very resilient if we return to principles of free markets and private initiative. That is why most studies conclude that most of the damages from climate change will occur in poor equatorial countries. Most of the benefits of global reductions in greenhouse gas emissions would go to those countries. That is not a bad thing, but there are much more direct and potentially cost-effective ways to help those countries than costly and largely ineffective efforts to reduce emissions. Effective aid for local adaptation is one. For the U.S., all we really need to do is avoid damaging our built-in resilience through badly designed policies. As my friend and colleague put it in Forbes recently "... the main U.S. line of defense against the risks of climate change ... remains a free and productive economy."[11]

Economic Issues in Designing Adaptation Strategies

Economists who have studied climate change generally agree that rational adaptation can substantially reduce the potential damage from climate change,[12] and that in an institutional setting that does not distort the natural economic incentives to avoid risk, the private sector is quite capable of adopting many appropriate responses on its own. There are also public goods involved in adaptation, including the classic public goods of R&D, public health, roads, dams and flood protection. Resilience toward climate change is also a function of how well a system performs at providing public goods. Thus to me there are three fundamental requirements for effective adaptation policy in the United States:

- Understanding what types of adaptations should be left to the private sector and which are the responsibility of government. The criterion should not be "people's homes need protecting" but "there are systematic public goods involved that

[11] http://www.forbes.com/sites/realspin/2014/07/17/the-risky-business-of-a-carbon-tax/
[12] Robert Mendelsohn, "The Impact of Climate Change on Land," with commentary by W. David Montgomery in Climate Change and Land Policies, edited by Gregory K. Ingram and Yu-Hung Hong, Lincoln Institute for Land Policy, April 2011

justify public investment rather than relying on the clear private incentive to manage risks to ones own property."

- Maintaining the economic freedom and property rights that create appropriate incentives for private investment to avoid risks of climate change. Unlike many countries of the world, our system of private property and free enterprise provides a framework for appropriate incentives and has led to successful adaptation to all sorts of changes affecting the economy. But these incentives can be diluted or distorted by government programs that provide free insurance before or after the fact or otherwise subsidize development in vulnerable areas.
- Limiting public policy toward adaptation to a. elimination of subsidies and other distortions that reduce private adaptation incentives by creating moral hazards b. investments in true public goods that have an acceptable balance of cost and climate risk reduction.

Poor countries face much greater challenges than these in achieving any kind of adaptation. Where our problem is adapting sensibly and cost-effectively, their problem is adapting at all. Many studies have shown why it is that poor countries, especially in equatorial regions where the potential effects of climate change would be the largest, are not likely to be able to adapt effectively. These include violence and insecurity that makes any investment questionable, rulers who keep their people in poverty while appropriating any economic surplus or foreign aid for their own benefit, and lack of secure property rights and land tenure that are fundamental to incentives to invest.[13] They also include closed political systems that exclude most of their population from meaningful participation and carry out public works projects to benefit their narrow base of supporters and not the country as a whole.

Countries like Botswana that have achieved free market and political systems have already been successful in mitigating the risk of weather events and instability of agricultural prices, and many Central African countries will remain poor and vulnerable

[13] See, for example, Paul Collier, The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It and William Easterly The Tyranny of Experts: Economists, Dictators, and the Forgotten Rights of the Poor.

as long as violence is a more attractive option than participation in the political system.[14] I am firmly convinced that moving a country from a political order like that in, for example, the Sudan, to a political order like that in Botswana would improve its standard of living and reduce the potential for conflict and damage from climate change more than would any conceivable action to reduce global greenhouse emissions.

Potential Pitfalls in Adaptation Policy

Nor is the United States immune to distorted incentives and government policies that frustrate or misdirect adaptation. Our current policies already distort incentives in a way that increases vulnerability to extreme weather events and inflates estimates of the need for public investment to protect socially unwise private investments. The principle one is subsidized flood insurance, that encourages people to build in areas known to be vulnerable. A more hidden incentive is provided by Federal funding for reconstruction after a disaster hits; although solidarity with those who have been harmed justifies aid, providing the aid by rebuilding the areas that were damaged just reinforces the incentive to downplay risks. Most of record damage due to storms is clearly attributable to greater development in areas known to be vulnerable and not to an increase of the hazard. Fixing the incentives to locate in locations at risk is far more cost-effective than encouraging and then protecting unwise investments. Agricultural disaster assistance can have the same effect. The moral hazard that future policies could create must be looked at carefully if private adaptation is to play the full role that it can.

In terms of the design of public investment programs, I see three counterproductive dynamics at work, that if left unchecked are likely to greatly increase budgetary demands and reduce the effectiveness of adaptation measures. They are:

- Scientifically unjustified attribution of current weather events to climate change
- Using adaptation as a convenient rationale for pork barrel projects

[14] Robert Bates, When Things Fell Apart: State Failure in Late-Century Africa (Cambridge Studies in Comparative Politics) 2008.

- Making climate change an excuse for extension of agency missions and larger budgets

The first of these is a simple error, though it many cases it is indulged in by those who do know better.[15] The other two are consequences of a dysfunctional system in which policies are pursued for the benefit of incumbents and their constituencies rather than for broader national objectives.[16]

Even in cases when certain activities are clearly the responsibility of government, distinguishing the wheat from the chaff in proposed investments in adaptation is more difficult than it might appear. Not one of potential public investments in adaptation is unique to climate change. Public health, public buildings, roads, dams, levees, fire and flood protection have well organized constituencies and agencies that promote, build and oversee them. These are also (with the exception of public health) the areas in which pork barrel politics was invented. Thus the natural Congressional and bureaucratic incentives line up to encourage unnecessary spending on adaptation, and a critical attitude toward any such plans is warranted.

The Budget Committee has always tried to resist these tendencies. Two things that the Committee can do in the case of adaptation is to consider the proper role for government and scrutinize specific funding requests to ensure they represent cost-effective solutions to problems within government role

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15 For example, the late Stephen Schneider characterized some climate scientists as taking a "sound-byte" approach that he found reprehensible but understandable: "And like most people we'd like to see the world a better place, which in this context translates into our working to reduce the risk of potentially disastrous climatic change. To do that we need to get some broad based support, to capture the public's imagination. That, of course, entails getting loads of media coverage. So we have to offer up scary scenarios, make simplified, dramatic statements, and make little mention of any doubts we might have." See American Physical Society, APS News, August/September 1996, p. 5. Nevertheless, the practice has continued.

16 See Morris Fiorina, Congress: Keystone of the Washington Establishment, Revised Edition, 1989 and Lee Lane and W. David Montgomery, "Political Institutions and Greenhouse Gas Controls." AEI Center for Regulatory and Market Studies, Related Publication 08-09. Revised August 2010.

Although it is true that demanding certainty before acting is rarely a good risk management strategy, always assuming the worst and acting as if it is sure to happen without immediate action is equally bad risk management. So is insisting on doing something even though it is too late or too little to matter.

A prudent balancing of costs and risks is necessary, and that is very hard to do given the present lack of quantification and high uncertainty about what the effects of climate change will be. The range of temperature increases predicted as a result of a doubling of greenhouse gas concentrations is as wide in the most recent IPCC Fifth Assessment Report as it was in the first. If the cause is that uncertain, the effects cannot be any less uncertain. Although studies of the potential damages of events hypothesized to be caused by climate change, known as "effects research," have proliferated, integrated assessment modelers have not yet succeeded in extending their models that predict temperature change to generate estimates of the effects of temperature increase and the damages that they would cause. Moreover, the effects of temperature increase are likely to be so localized and model results are so inconsistent about global effects that global or national planning is most likely to do the wrong thing in the wrong place.[17]

Where Adaptation Is Most Necessary

Despite all this, I agree that "To lower our national security risks, the United States should take a global leadership role in preparing for the projected impacts of climate change."[18] But I recommend a very specific type of response. because I am convinced that most assessments of what can be done are so blinded by political correctness and diplomacy that they will not properly attribute the cause of vulnerability to failed states, rapacious ruling elites, and systems that fail to provide either economic or political freedom. They also continue the error of recommending top down planned solutions

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[17] Montgomery, Lincoln Institute, op cit

[18] National Security and the Accelerating Risks of Climate Change May 2014 CNA Military Advisory Board, p. 5

rather than recognizing that effective adaptation, like effective poverty reduction and wildlife conservation, must occur at the community level.[19]

In the past decade, Botswana has experienced a surge of economic growth and reduction in poverty, as well as implementing systems that have substantially reduced risks of drought and price fluctuations for the agricultural sector. At the same time, Zimbabwe has continued its process of expropriation of white farmers and assignment of those lands to cronies of dictator Mugabe, with the result that agricultural production has collapsed, poverty and hunger have increased, and vulnerability to climate change greatly increased.

Regimes reap the harvest from any the seeds of conflict that might be planted by adverse environmental conditions, and conditions that may lead to conflict in a closed political and economic society are much less likely to in an open society. Indeed, discovery of sufficient wealth in a country to make fighting over who will control it has triggered conflict where poverty was long tolerated. Nor is environmental degradation new as a cause of conflict. Before their war with white settlers, the cattle-raising Zulu warriors moved south into lands settled by other tribes, took them over and slaughtered the population to provide room for their herds as they depleted northern grazing lands. These conditions may be made worse by climate change, but the small difference that unilateral U.S. action can make to global warming in the current international setting will have no noticeable effect on the risks. To the extent that these conflicts affect U.S. national interests, a much wiser investment would be in a sufficiently strong military to deal with threats to us and humanitarian interventions around the world.

If we really want to help globally, there is clear evidence that most can be accomplished through effective support at a community level for locally-designed and implemented adaptation measures in Africa and poor Asian countries where the real vulnerability exists, not nugatory mitigation that helps no one.

This concludes my prepared testimony and I look forward to your questions.

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[19] Easterly, op cit.

Chairman MURRAY. Thank you very much.
Dr. LOMBORG.

STATEMENT OF BJORN LOMBORG, ADJUNCT PROFESSOR AT COPENHAGEN BUSINESS SCHOOL AND DIRECTOR OF THE COPENHAGEN CONSENSUS CENTER

Mr. LOMBORG. Thank you very much, Chairman Murray and Honorable Members. I was asked and I think we were all asked to talk about the cost of inaction, and so I have tried to look at one of the global integrated models that actually tried to estimate and approximate an answer to your question. So let me just take you through.

You know, first of all, as you point out, global warming is man-made; it is a long-term problem. Just to give you a sense of proportion, this particular model from Yale, the Nordhaus model, the so-called RICE model that indicates what is the cost for climate change, also for the U.S., indicates that the total cost of global warming to the U.S., discounted back until today, for all the next five centuries, is on the order of 1.2 percent.

Now, again, I think we should be very careful. This is an order of magnitude. There is no way this is the absolute correct number, but it is one model, and I actually argue why this is probably a slightly pessimistic model, so it does give us an impact.

Also, let us just remember it is not just GDP, but it is impacts on a lot of other things, as we were told before. Agriculture, wetlands, storms, even catastrophic climate change is in included in this.

So it gives us a good sense of what is the damage impact we are talking about. So I think it is important, perhaps first marker, to say this is a problem; it is not the end of the world. So let us try and remain calm, and also I think David made a good point in saying we need to think not just about, oh, there are all these terrible things happening, but we need to talk about what can we do.

So the Committee asked me, What is the cost of inaction? This is likely the cost of inaction in this century. So over the next 100 years, this is a percentage cost of GDP for the U.S. This very clearly shows that by the end of the century, the cost will be about 1.8 percent of global—sorry, of U.S. GDP. That is a significant impact. That certainly would make a lot of say we should do something about it. But, of course, we need to think about what are the alternatives.

Now, let me show you, because the beauty of these models is that you can actually try and see what are the ways that we can make smarter policies. A lot of us would like to believe that we can cut carbon emissions, and quite cheaply. But I would like to point out, as the Ranking Member also pointed out, there is also a cost to action. This is one graph, one data point, I think it summarizes very clearly that there is a strong correlation between more CO2 emissions and higher GDP growth. So we have—and this is in all the economic models. You can cut your CO2, but it has a cost.

Now, it does not mean you go down to zero growth, but it means you have a lower growth. And I think this is very well established in the track record for all nations across time.

So there is a cost. That is the cost the models indicate. So this was the cost of inaction I just showed you.

If we manage to get the best possible policy for the entire world, we can get this action cost instead. Notice it is slightly higher in the first half of the century because we actually have to take action. But it also rewards us by having slightly fewer damages in the far future. It will actually overall be a net benefit.

The problem, of course, is this requires pretty much everyone in the world to do all the smart things all the way through with no policy changes that have any negative externalities. That is probably fairly unrealistic.

Let me show you another—and I describe it more in my paper—a more realistic option where the U.S., European Union, Japan, a few other of the rich countries take the lead and also do so in the way that the European Union—we have good data for how much that costs in the European Union. This is the cost, I would surmise, for realistic action.

So my point here is simply to say there is a small space where you can actually achieve a net benefit if you make action, but there is a huge space where action can end up making everyone worse off. And that I think is the real danger we need to talk about.

If I could just show you this as a summary point, this is the cost of inaction to climate change. The first bar, you see the $3.4 trillion it is going to cost. But the cost of action, as you can see, is both the remaining climate damage and the climate policy.

If you look at the first one, you can actually achieve to cut the damage from $3.4 trillion to just $3.2 trillion. that would be wonderful, but it would require you to get China, India, Namibia, and every other country in the world to implement an efficient carbon tax in the next couple of years. In some ways, good luck with that. I do not think that is going to happen.

And so we need to look at the fact that if we approach, for instance, a more realistic action, we could end up spending $7.6 trillion instead over this century, and that is really—and let me just skip behind this. That is why I think we need to have a conversation about how do we fix global warming in the longer run.

We do need to fix global warming in the longer run. I help run the Copenhagen Consensus where we bring together more than 100 of the world's top economists, seven Nobel Laureates. We looked also on climate policy, and basically what we found was the solution cannot be to try to make fossil fuel so expensive nobody wants it. It is infeasible. Certainly we have seen that in the U.S. But it is also very, very hard to do in China and India and elsewhere. It is also bad economics.

What we need to do is to make green energy so cheap that everyone will want it, and that happens to be about innovation. Yes, it is going to take more time. We would all love to get started today. But I think the real value of this exercise and looking at the cost and benefits is to recognize that there is not just costs from inaction, there are also costs from action. And we need to make sure that we make smart decisions, and that is, of course, up to you to hopefully make the smart decisions that will actually make us all better off.

Thank you very much.

[The prepared statement of Mr. Lomborg follows:]

The Costs of Inaction: The Economic and Budgetary Consequences of Climate Change

Tuesday, July 29 2014, 10:00am, Room SD-608, in Dirksen Senate Office Building

The Senate Budget Committee

Testimony by Bjorn Lomborg, Copenhagen Consensus Center

Summary:

Global warming is real, but a problem, not the end of the world

Climate is not the only cost – climate policy also adds costs

Even the smartest climate policy will likely have almost as high total costs as inaction this century

A more politically plausible climate policy will have *much* higher cost than inaction this century

To answer the committee's question on the US cost of inaction and action for climate change:

- The total, discounted cost of inaction on climate change over the next five centuries is about 1.2% of total discounted GDP.
- The cumulative cost of inaction towards the end of the century is about 1.8% of GDP
- While this is not trivial, it by no means supports the often apocalyptic conversation on climate change.
- The cost of inaction by the end of the century is equivalent to losing one year's growth, or a moderate, one-year recession.
- The cost of inaction by the end of the century is equivalent to an annual loss of GDP growth on the order of 0.02%.
- However, policy action as opposed to inaction, also has costs, and will still incur a significant part of the climate damage. Thus, with extremely unrealistically optimistic assumptions, it is possible that the total cost of climate action will be reduced *slightly* to 1.5% of GDP by the end of the century.
- It is more likely that the cost of climate action will end up costing upwards of twice as much as climate inaction in this century – a reasonable estimate could be 2.8% of GDP towards the end of the century.
- Thus, for the first half century, it is absolutely certain that any climate action will have greater total costs than inaction. For the second half of the century it is very likely that any realistic climate action will have greater costs than climate inaction.
- While it is possible to design clever, well-coordinated, moderate climate policies that will do more good than they will cost, it is much more plausible that total costs of climate action will be more expensive than climate inaction.
- To tackle global warming, it is much more important to dramatically increase funding for R&D of green energy to make future green energy much cheaper. This will make *everyone* switch when green is cheap enough, instead of focusing on inefficient subsidies and second-best policies that easily end up costing much more.
- It is likely that the percentage cost to the US budget is in the same order of magnitude as that of the percentage costs to the US economy.

The Costs of Inaction: The Economic and Budgetary Consequences of Climate Change

What is the cost of inaction and action?

Is global warming happening? Yes. Man-made global warming is a reality and will in the long run have overall, negative impact.

It is important to realize that many economic models show that the overall impact of a moderate warming (1-2°C) will be beneficial whereas higher temperatures expected towards the end of the century will have a negative net impact.[1] Thus, as indicated in Figure 1, global warming is a *net benefit* now and will likely stay so till about 2070, after which it will turn into a net cost.

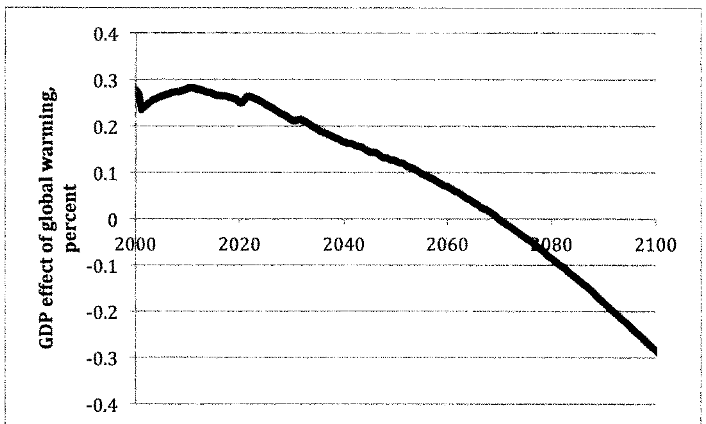

Figure 1 Net benefit or cost of global warming. Benefit is positive, cost is negative.[2]

How important is global warming? To get a sense of the importance of global warming, take a look at the total impact of damage compared to the cumulated consumption using the discount rates from Nordhaus' 2010 DICE model. The total, discounted GDP through the year 2200 (almost the next two centuries) is about $2,212 trillion dollars. The total damage is estimated at about $33 trillion or about 1.5% of the total, global GDP, as indicated in Figure 2. This means that while the global warming impact is *not* zero but *negative*, it does *not* signify the end of the world, either. It is a problem that needs to be solved.

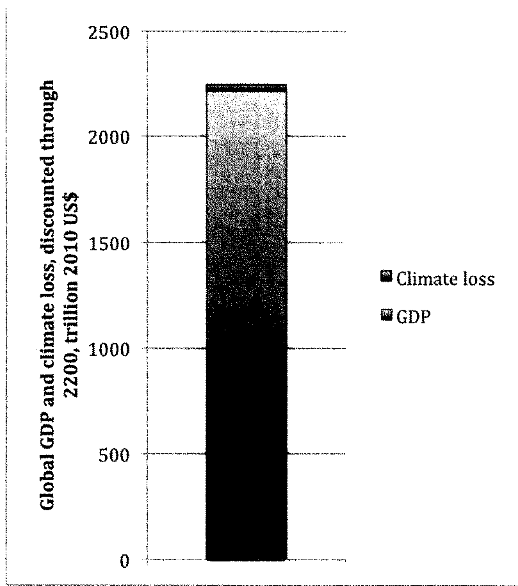

Figure 2 Global, total, discounted GDP through 2200, and climate loss.[3]

What is the impact of global warming on the US economy? There are a number of integrated climate models. I'll here use Nordhaus' RICE model[4] The model contains 12 regions, including the US, China and the EU, an economic sector and geophysical sectors, linking the economy and climate impacts like sea level rise. It has a equilibrium climate sensitivity of 3.2°C, a bit above average, expecting 3.4°C temperature rise by 2100 in the base scenario. Remember also, that the costs of the risks of abrupt and catastrophic climate change are included in the damage estimates in the RICE model.

The RICE model shows instant damages from temperature, making it more pessimistic than most estimates, as referenced above. Moreover, the model shows a 1.95% GDP loss in 2075 from unrestricted global warming at 1.95°C. The IPCC found that the cost of 2°C higher temperatures would be 0.2-2% of income.[5] This means that the RICE model, if anything, is at the high end cost estimates of the integrated models.

The RICE model show the total, discounted GDP for the US across the next 5 centuries is about $842 trillion (2005$), but this will be reduced by about $10 trillion from cumulative impacts from global warming, as indicated in Figure 3. This means that the total damages from unmitigated global warming for the US is on the order of 1.2%.

This indicates, as has often been pointed out, that the US is *less* vulnerable to climate change, compared to many other regions (especially the poorer countries). Moreover, it emphasizes that while the global warming impact is *a net negative* for the US, it is in no way a catastrophe, either.

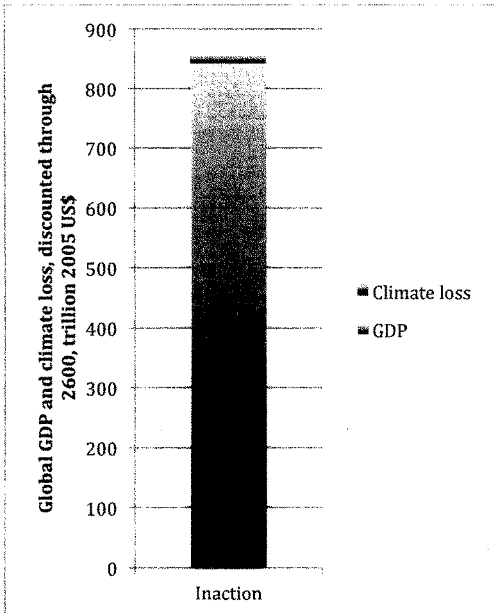

Figure 3 Total US, discounted GDP through 2500, and climate loss.[6]

How much will global warming directly impact the federal budget? I know of no direct estimate of the total impact of global warming on the federal budget. Consequently, I will here assume that the main impact of global warming on the federal budget will be a reduction in total revenue, in line with the reduction in US GDP due to global warming (expecting unchanged taxes). On the one hand, because not all damages included in the RICE model will be translated into actual GDP losses, this may be an over-estimate. On the other hand, it is likely that parts of the costs of global warming will be borne disproportionately by the federal government. Thus, in total, it is likely that the loss estimate from GDP from the RICE model translates directly into the negative impact on the federal budget. In the following discussions I'll treat the impact to the US economy and the federal budget as similar percentages (although of course, of a different base, since the US GDP is about $16 trillion, and the federal budget is about $3 trillion).

That means that the total direct impact on the US federal budget is likely to be a reduction of about 1.2% across the next centuries.

However, this is not actually the avoidable impact from climate, since some climate impact will happen no matter what we do. The internationally most ambitious target (which is probably almost out of reach) is the 2°C goal. Figure 4 shows the cost of unmitigated global warming in the upper line, reaching a US cost of 1.8% of GDP by 2100. The lower, 2°C line shows a cost that is almost indistinguishable for the first decades, leveling off just below 0.6% of GDP by 2100. Thus, the avoidable global warming is the area between the two lines, or about 1.2% GDP by 2100.

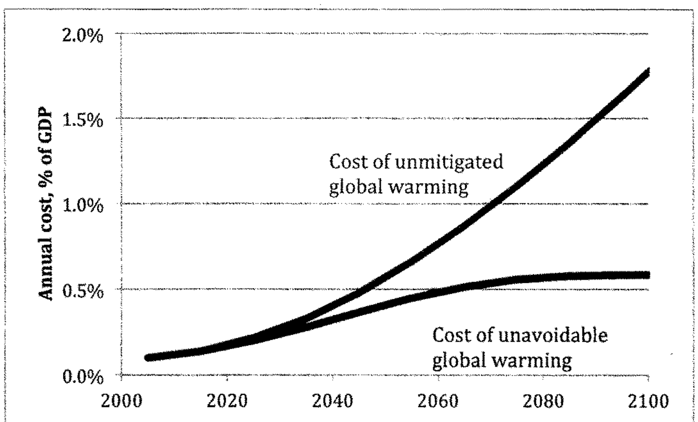

Figure 4 US cost for each year, in % of US GDP that year. Upper line shows the cost of unmitigated global warming. Lower line shows the unavoidable cost of global warming, if all nations achieve the most efficient policies to reach the 2°C target. All calculations from RICE.

The RICE model show the total, discounted GDP impact of global warming for the US across the next 5 centuries is $10 trillion, as mentioned above, while the cost of the unavoidable global warming is about $3 trillion. This means that the total avoidable damages from global warming for the US is on the order of 0.8%.

With similar reasoning as above, it seems likely that the total avoidable impact on the US federal budget will be in the order of 0.8% of GDP.

How much will global warming indirectly impact the US economy? It is important to remember that the cost of global warming is not the only impact on the US economy or the federal budget. Any climate policy enacted to (partially) counter global warming will also carry both costs and benefits. These will indirectly, through policy, impact both the US economy and the federal budget.

The 2°C policy. Consider the world implementing the widely promised (but fairly unlikely) 2°C implemented in the most efficient way possible. This would entail a single, global, uniformly imposed carbon tax, which would increase rapidly through the century. In the RICE model, the indication is that the global carbon tax would have had to be $19/ton CO_2 in 2010, and would have to be $26 in 2015 and $16 in 2020, about $170 in 2055 and $296 in 2105.[7]

To give an indication, this would add ¢22 to a gallon of gasoline about now and $3.40 to a gallon of gasoline in 2085, across the world, including the poorest places on earth.

This is already politically very unlikely to happen. Moreover, the cost is likely a low estimate. Another survey of a 8 global energy models showed the 2°C target might cost in the order of 12.9% of GDP by the end of the century, leading to carbon taxes of four times the RICE model at $4004 per ton CO_2.[8]

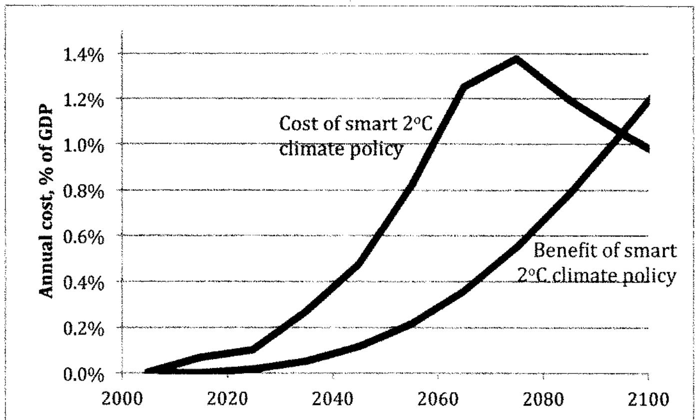

Figure 5 US cost and benefit for each year, in % of US GDP that year of 2°C efficient climate policy. Blue line shows net benefit (avoided costs) from less global warming. Red line shows extra cost. All calculations from RICE.

The important point to realize here is that the costs to the US fall heavily in the early part of the period whereas the benefits tend to come later. This is a standard finding for all climate models and all climate policies.

Here, the cost to the US economy will run upwards of 1.4% of GDP in the second half of the century or about $600 billion in annual costs vs. $250 billion in avoided damages.

Despite everyone else including China and India also implementing similarly expensive climate policies, the US costs will outweigh the benefits for the US from this global policy until the early 2090s, although the benefits will clearly outweigh the costs in the 22nd century and beyond.

With Nordhaus' discounting this climate policy is actually still seen as socially beneficial, because the benefits from future centuries sufficiently outweigh the net cost in this century. The avoided damages run to almost $7 trillion, whereas the policy costs a bit more than $4 trillion. The numbers are almost similar with a traditional 3% discount rate, but with a 5% discount rate, the total policy costs are more than twice the benefits.

Moreover, it seems unlikely that other countries would enact this sort of policy. The annual costs for China would in 2065 be $863 billion annually, with benefits of just $170 billion.

The 'optimal' climate policy. The optimal policy in the RICE model is estimated as the climate policies coordinated and enacted by all nations starting in 2010 that maximize global economic welfare across the next six centuries.

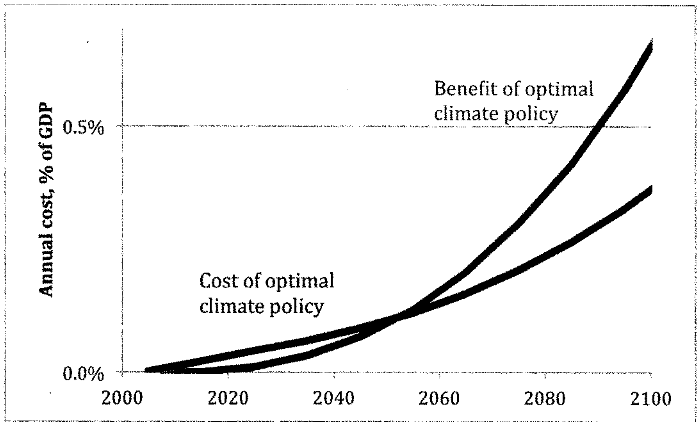

Figure 6 US cost for each year, in % of US GDP that year of optimal climate policy. Blue line shows net benefit (avoided costs) from less global warming. Red line shows extra cost. All calculations from RICE.

The costs and benefits for the US can be seen in Figure 6. Again, the costs outweigh the benefits for the first half-century, but the benefits significantly outweigh the costs for the coming centuries.

This policy is less politically prohibitive, since it requires a lower carbon tax. In the RICE model, the indication is that the global carbon tax would have had to be \$9/ton CO_2 in 2010, \$12 in 2015 and \$16 in 2020, about \$50 in 2050 and \$130 in 2100.[9] In terms of gasoline, this would have added about ¢8 on a gallon in 2010 globally, ¢18 in 2020, about ¢40 in 2050 and \$1.14 in 2100.

This policy is a net benefit, and quite substantial. With Nordhaus' discounting, it costs the world \$1.5 trillion, but avoids climate damages worth \$5 trillion. With 5% discount rate, it is still a slight net benefit.

Yet, actually seeing this policy enacted is wholly unrealistic, as Nordhaus acknowledges.[10] It requires policies that would be coordinated across the entire world, with carbon taxes imposed even on the poorest nations. For instance, the costs for China would remain higher than the Chinese benefits until after 2080, making this a very hard political sell.

As Nordhaus points out, the costs up till mid-century are five times higher than the benefits:

> Abatement costs are more than five times the averted damages. For the period after 2055... however, the ratio is reversed: Damages averted are more than four times abatement costs. Asking present generations—which are, in most projections, less well off than future generations—to shoulder large abatement costs would be asking for a level of political maturity that is rarely observed.

Importantly, the optimal policy will avoid very little of global warming impacts in the 21st century. Figure 7 shows the total damages for both action and inaction.

The damages for inaction (business-as-usual) is just the climate damage from Figure 4, with a cost of about 0.14% of GDP now, and a cost of 1.8% of GDP in 2100. The cost of the optimal, globally coordinated climate policy is the cost of climate policies and the residual negative climate impact. It starts out slightly higher at a cost of 0.16% of GDP now and with a cost of 1.4% of GDP in 2100.

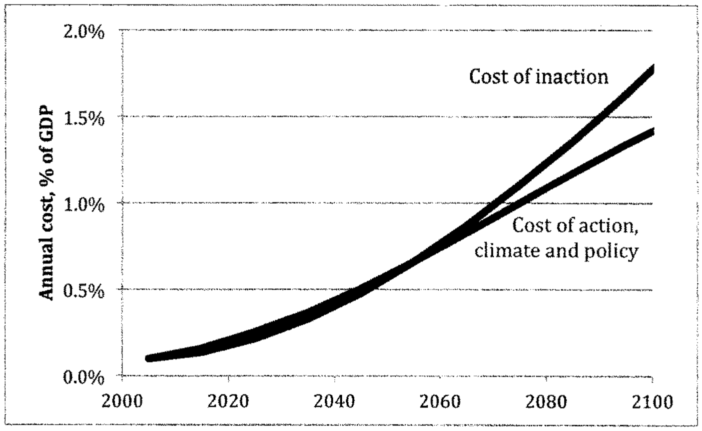

Figure 7 Total cost of climate impact and climate policy for the US. Dark blue line shows the total cost of inaction. Light blue line shows the total cost of smartest, globally coordinated action, both from policy and residual climate damage. All calculations from RICE.

Remembering this is a wholly unrealistic policy to be implemented and be implemented well, the most optimistic statement that can be made on the cost of action and inaction on climate change for the US in the 21st century is that there is little difference. Starting out more expensively, even the optimal climate policy will incur nearly as much cost as no action at all, at 1.4% instead of 1.8% of GDP by the end of the century. As will be apparent below, this is an extremely and unrealistically rosy assessment.

Mostly rich world, ambitious reductions. Both India and China have defended their right to keep their emissions increasing. It is unlikely that they or the rest of the developing, mostly very poor countries will substantially reduce their emissions anytime soon. Nordhaus develops a scenario with rich countries (US, EU, Japan, Russia and the the rest of the rich countries) engage in strong emissions reductions but where the developing countries only participate in the 22nd century.[11] On the current set of policies from both rich and poor countries, this scenario seems a lot more realistic.

In this scenario, the costs are greater than the optimal policy for the rich countries, because they have offered to cut much, much more. This is evident in the EUs professed approach to cut emissions at least 80% below 1990 levels by 2050, and in similar statements from the current US administration.

The benefits, however, are smaller, because many of the biggest emitters are not included. This is readily evident in Figure 8, where China now emits almost twice what the second-largest emitter, the US, does. Of course, China, India and the other poor country emitters will still experience a net benefit in lower climate damages due to the generous reductions from the rich countries.

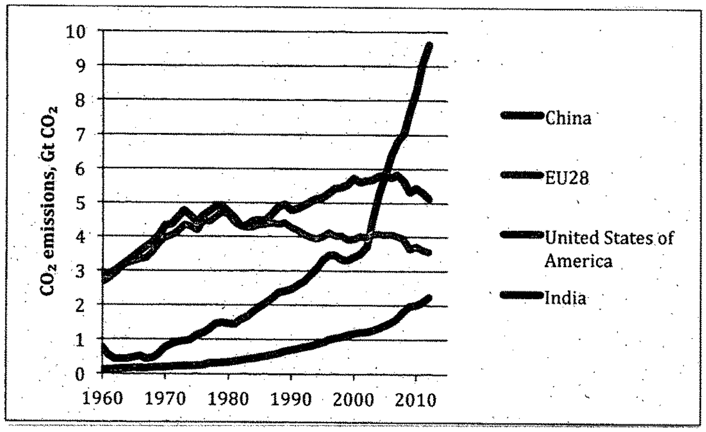

Figure 8 CO_2 emissions from the leading four emitters, China, US, EU and India, 1960-2012.[12]

Nordhaus estimate the future US reductions from the 2009 US climate bill that was passed by the House but not the Senate. In this scenario, the US will by mid-century have reduced its emissions some 75% below what they would otherwise have been.

The climate policy costs for the US will not be trivial. Assuming a full trading zone between all participants, the annual policy costs will run to $145 billion by mid-century and some $250 billion by the end of the century, or about 0.4% of GDP. The full trading assumption is rather unrealistic, as trading has generally been only weakly implemented and often only for small parts of the emissions spectrum. The more realistic cost with a no-trade assumption shows the US costs at about twice the annual cost at $280 billion by mid-century and $400 billion by the end of the century.

We can check the reasonableness of these costs by looking at the well-modeled costs of the EU climate policy to 2020.[13] The average cost by 2020 from 6 models runs to €209 billion or about $280 billion per year (1.3% of GDP). The Nordhaus model (admittedly doing a much more simplified analysis) finds the cost at less than $5 billion, even without trade, suggesting that the RICE estimates are certainly not exaggerated.

However, a consistent result from the studies of the EU climate policy is that real climate policies are often poor, second-best policies, with a mish-mash of regulation of different sectors and regions. The most pertinent summary of the Stanford Energy Modeling Forum's assessment of the EU policies finds:

> Second-best policies increase costs. A policy with two carbon prices (one for the ETS, one for the non-ETS) could increase costs by up to 50%. A policy with 28 carbon prices (one for the ETS, one each for each Member State) could increase costs by another 40%. The renewables standard

> could raise the costs of emissions reduction by 90%. Overall, the inef!ciencies in policy lead to a cost that is 100–125% too high.[14]

Thus, it is very likely that a more realistic estimate of costs will be a bit above twice the optimal estimate. For the RICE model, that means that the US costs of an ambitious climate policy will more likely incur annual costs of about half a trillion by mid-century and some $800 billion by the end of the century.

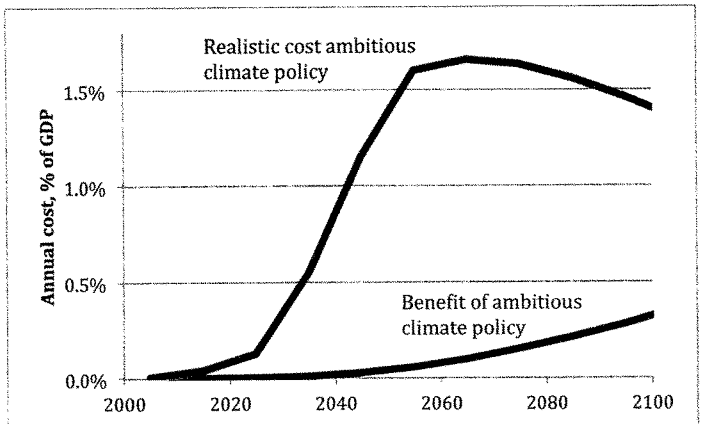

Figure 9 US cost and benefits for each year, in % of US GDP that year of realistic, ambitious climate policy ("Copenhagen Accord with only rich countries," no trade and 2x policy costs). Blue line shows net benefit (avoided costs) from less global warming. Red line shows policy costs. All calculations from RICE.

The overview of the 21st century is available in Figure 9. The policy cost is vastly greater than the avoided climate damages, with costs running above 1.5% of GDP (about similar to what the moderate EU climate efforts will cost the EU by 2020), while benefits run between 0.1% and 0.3% in the second half of the century.

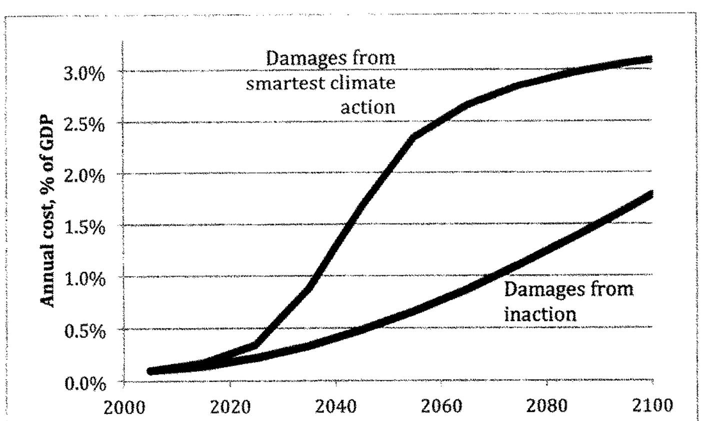

Figure 10 Total damages from climate impact and climate policy costs for the US, in % of US GDP that year. Dark blue line shows the total cost of inaction. Light blue line shows the total cost of realistic, ambitious climate action. All calculations from RICE.

Again, it is important to emphasize that such an ambitious climate policy does not reduce total impacts to the US economy or the federal budget, but actually dramatically increase the total cost, as is evident in Figure 10. In such a situation the US would have to both suffer significant costs from only slightly reduced climate change while incurring even higher policy costs.

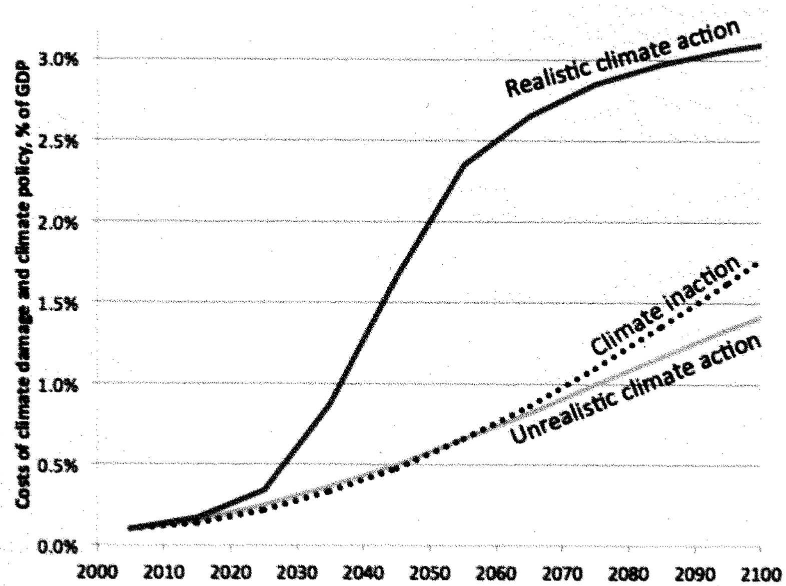

Figure 11 Total costs and benefits from inaction and action for the US. Black dotted line shows the cost of inaction. The light blue line shows the absolutely best-case cost of optimal, globally coordinated policies, with the cost of policy and the cost of residual climate damage. Dark blue line shows the more realistic cost of a mostly rich-country-led, ambitious, second-best climate policy along with residual climate damage. All calculations from RICE.

Figure 11 answers the committee's question on the costs of climate inaction and climate action. The costs of inaction rise through the century to about 1.8% of GDP in 2100. With extremely unrealistically optimistic assumptions, it is possible that the total cost of climate policy action will be reduced *slightly* to 1.5% of GDP by the end of the century. With more likely assumptions, the cost of climate action will end up costing upwards of twice as much as climate inaction in this century, or about 3.1% of GDP towards the end of the century. No matter what, the cost of action is higher than the cost of inaction in the first half of the century.

Another way to see look at the cost of action and inaction is to look at the total, discounted cost of global warming and global warming policy on the 21st century in Figure 12. The cost for the unrealistic action, the optimal policy, is 0.49% of the period's total GDP. The cost for inaction is 0.52%, while the cost for the optimal 2°C policy is 0.78% and the realistic, ambitious climate policy is 1.17%. For following centuries, the relative cost of inaction will increase.

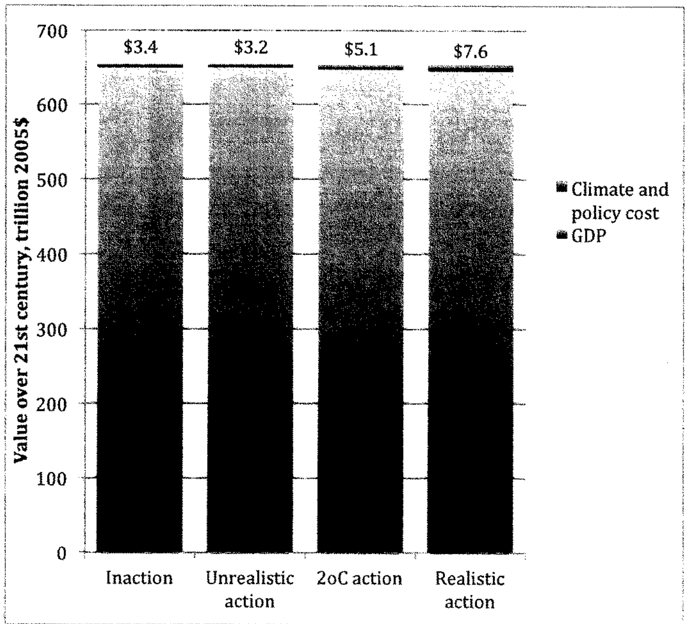

Figure 12 Costs of climate impacts and climate policy, and remaining GDP, for four different scenarios, over 21st century. The unrealistic action is the optimal action, generating a climate and policy cost of $3.2 trillion, and with a remaining GDP of $649.1 trillion. Realistic action is the mostly-rich-world scenario All calculations from RICE.

Two points are clear. First, global warming is by no means the most important part of the 21st century. Second, there is much greater scope for climate policies to make the total climate cost *greater* thought the 21st century.

Failed policies to tackle global warming

This underscores the central question of how else to approach global warming.

The first realization needs to be that the current, old-fashioned approach to tackling global warming has failed. The current approach, which has been attempted for almost 20 years since the 1992 Earth Summit in Rio, is to agree on large carbon cuts in the immediate future. Only one real agreement, the Kyoto Protocol, has resulted from 20 years of attempts, with the 2009 Copenhagen meeting turning into a spectacular failure.

The **Kyoto approach is not working** for three reasons. **First**, cutting CO_2 is **costly**. We burn fossil fuels because they power almost everything we like about modern civilization. Cutting emissions in the absence of affordable, effective fossil fuel replacements means costlier power and lower growth rates. The only current, comprehensive global warming policy, the EU 20-20-20, will cost about $280bn/year.[15]

Second, the approach **won't solve the problem.** Even if everyone had implemented Kyoto, temperatures would have dropped by the end of the century by a miniscule 0.004°C (0.007°F). The EU policy will, across the century, cost about $20 trillion, yet will reduce temperatures by just 0.05°C (0.1°F).[16]

Third, green energy is not ready to take over from fossil fuels.[17] It is generally much costlier, its deployment does not in general create new jobs (because its higher, subsidized costs destroy jobs in the rest of the economy)[18], and because it typically produces electricity, which is not generated with oil, it doesn't reduce oil dependence[19]. Today, wind supplies 0.7% of global energy and solar about 0.1%, and even with very optimistic assumptions from the International Energy Agency, wind will supply only 2.4% in 2035 and solar 0.8%.[20]

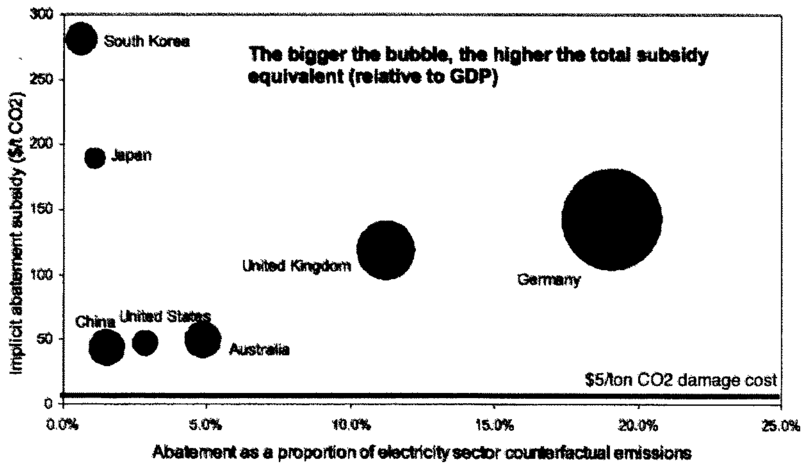

Figure 13 Abatement and implicit CO2 reduction cost for electricity, various nations. $5/ton CO2 damage insert for referece. In AUS$, which is almost equivalent to US$.[21]

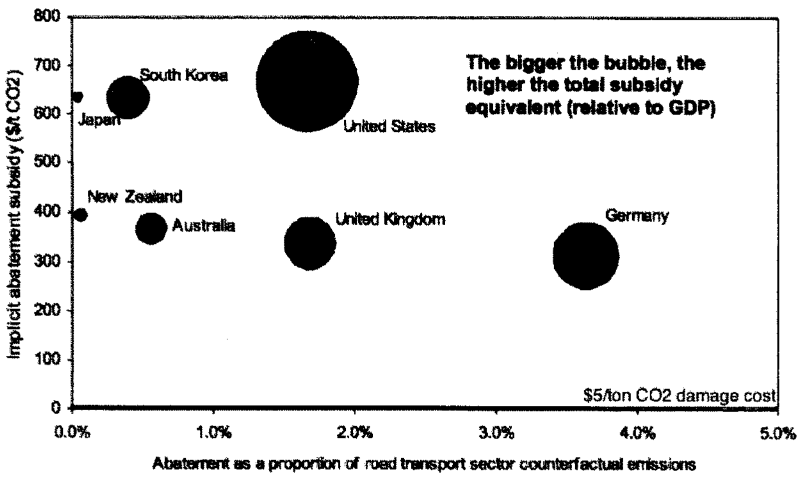

Figure 14 Abatement and implicit CO2 reduction cost for biofuels, various nations. $5/ton CO2 damage insert for referece. In AUS$, which is almost equivalent to US$.[22]

Because there is no good, cheap green energy, the almost universal political choices have been expensive policies that do very little. In Figure 13 we see how all major nations have managed to enact policies for electricity that cost a lot, yet do very little (Germany is leading the pack and still only reducing emissions from the power sector of 19% or 7% of the economy).

The cost per ton of CO2 avoided is universally far above the most likely $5/ton CO2 damage,[23] with China at the cheapest at 8 times the damage of at about $40, and South Korea at a phenomenal $280/ton CO2, 56 times higher than the damage cost. Germany pays each year about 0.3% of its GDP in electricity subsidies.

On biofuels, the excess cost is even more pronounced, and yet the emission reductions even smaller, as can be seen in Figure 14. Germany is paying 62 times too much or $310/ton CO2, reducing just 0.6% of its total emissions at a cost of $1.7bn. The US is paying a phenomenal 133 times too much, at $666/ton CO2, costing $17.5bn/year and reducing just 0.5% of its total emissions.

Yet, the cost is not just in economic terms. There is also increasing dissatisfaction with high energy costs in countries like the UK and Germany. In Germany the cost of electricity has risen 80% in real terms since 2000, as is evident in Figure 15. A fourth of all consumer energy costs are now direct subsidies to renewables.

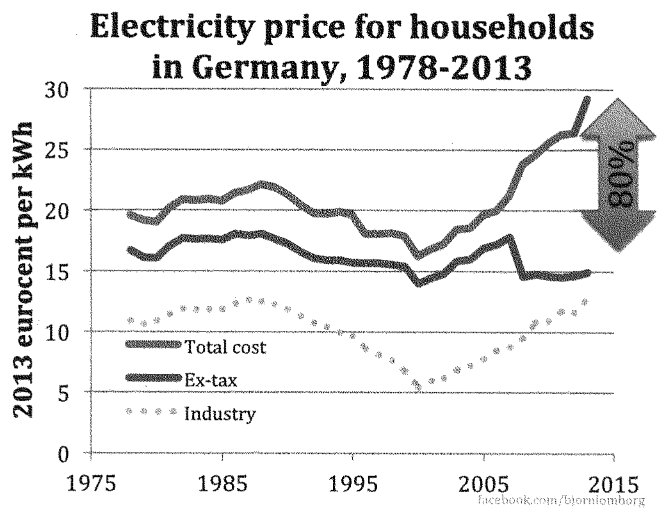

Figure 15 Electricity price for households in Germany, 1978-2013.[24]

A better policy approach to tackling global warming

It is important to realize that the old-fashioned policies have failed. Current green technologies just won't make it[25]. The only way to move towards a long-term reduction in emissions is if green energy becomes much cheaper. If green energy was cheaper than fossil fuels, everyone would switch.

This requires breakthroughs in the current green technologies, which means focusing much more on innovating smarter, cheaper, more effective green energy.

Of course, pursuing an approach of R&D holds no guarantees—we might spend dramatic amounts on R&D and still come up empty in 40 years — but it has much higher likelihood of succeeding than our twenty-year futile attempts to cut carbon so far.

This was the recommendation of the Copenhagen Consensus on Climate, where a panel of economists including three Nobel laureates found that **the best long-term strategy** is to dramatically increase investment in green R&D.[26] They suggested to 10-fold increase the current investment of $10bn to $100bn/year globally. This would be 0.2% of global GDP, and would entail a commitment of about $40bn from the US.

This approach would be significantly cheaper than the current policies (like the EU 20-20) and 500 times more effective. It is also much more likely to be acceptable to the developing countries.

The **metaphor** here is the **computer** in the 1950s. We did not obtain better computers by mass-producing them to get cheaper vacuum tubes. We did not provide heavy subsidies so that every Westerner could have one in their home in

1960. Nor did we tax alternatives like typewriters. The breakthroughs were achieved by a dramatic ramping up of R&D, leading to multiple innovations, which enabled companies like IBM and Apple to eventually produce computers that consumers wanted to buy.

This is what the US has done with fracking. The US has spent about $10bn in subsidies over the past three decades to get fracking innovation, which has opened up large new resources of previously inaccessible shale gas. Despite some legitimate concerns about safety, it is hard to overstate the overwhelming benefits. Fracking has caused gas prices to drop dramatically and changed the US electricity generation from 50% coal and 20% gas to about 40% coal and 30% gas.

This means that the US has reduced its annual CO_2 emissions by about 300Mt CO_2 in 2012.[27] This is about twice the *total* reduction over the past twenty years of the Kyoto Protocol from the rest of the world, including the European Union. At the same time, the EU climate policy will cost about $280 billion per year, whereas the US fracking is estimated to *increase* US GDP by $283 billion per year.

Conclusion

To answer the committee's question on the US cost of inaction and action for climate change, the short summary is this:

- The total, discounted cost of inaction on climate change over the next five centuries is about 1.2% of total discounted GDP.
- The cumulative cost of inaction towards the end of the century is about 1.8% of GDP
- While this is not trivial, it by no means supports the often apocalyptic conversation on climate change.
- The cost by the end of the century is equivalent to losing one year's growth, or a moderate, one-year recession.
- The cost of inaction by the end of the century is equivalent to an annual loss of GDP growth on the order of 0.02%.
- However, policy action as opposed to inaction, also has costs, and will still incur a significant part of the climate damage. Thus, with extremely unrealistically optimistic assumptions, it is possible that the total cost of climate policy action will be reduced *slightly* to 1.5% of GDP by the end of the century.
- It is more likely that the cost of climate action will end up costing upwards of twice as much as climate inaction in this century – a reasonable estimate would be 2.8% of GDP towards the end of the century.
- Thus, for the first half century, it is absolutely certain that any climate action will have greater total costs than inaction. For the second half of the century it is very likely that any climate action will have greater costs than climate inaction.
- While it is possible to design clever, well-coordinated, moderate climate policies that will do more good than they will cost, it is much more likely that the total costs of climate action will be much more expensive than climate inaction.

- To tackle global warming, it is much more important to dramatically increase funding for R&D of green energy to make future green energy much cheaper. This will make *everyone* switch when green is cheap enough, instead of focusing on inefficient subsidies and second-best policies that easily end up costing much more.
- It is likely that the percentage cost to the US budget is in the same order of magnitude as that of the percentage costs to the US economy.

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[1] Figure 1, p912, Richard S.J. Tol 2013: "Targets for global climate policy: An overview" in *Journal of Economic Dynamics & Control* 37 (2013) 911–928.
[2] Figure 4.1 in Gary W. Yohe, Richard S.J. Tol,, Richard G. Richels, Geoffrey J. Blanford 2009: The Challenge of Global Warming, in Lomborg, B 2009: *Global Crises, Global Solutions*, 2nd edition, Cambridge University Press.
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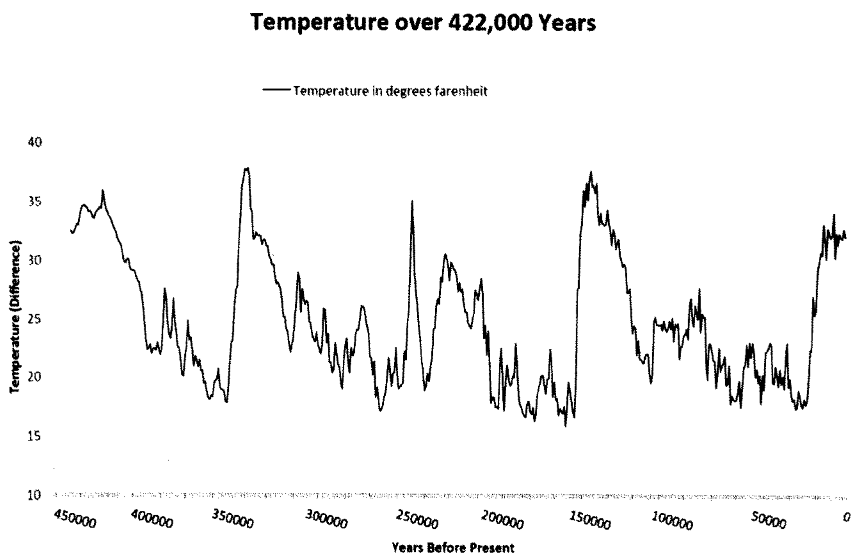
[3] Calculated from Nordhaus DICE model 2010, http://nordhaus.econ.yale.edu/RICEmodels.htm
[4] William D. Nordhaus 2010: "Economic aspects of global warming in a post- Copenhagen environment" in *Proceedings of the National Academy of Sciences*, 107:26, p11721–11726, doi: 10.1073/pnas.1005985107
[5] p19, http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf
[6] Calculated from Nordhaus RICE model 2010, http://nordhaus.econ.yale.edu/RICEmodels.htm
[7] Nordhaus 2010, p4, recalculated to per ton CO_2 and CPI corrected to 2013.
[8] Richard Tol 2010, Carbon Dioxide Mitigation, in Lomborg 2010 *Smart Solutions to Climate Change*, Cambridge UK, Cambridge University Press.
[9] Nordhaus 2010, p4, recalculated to per ton CO_2 and CPI corrected to 2013.
[10] "Although unrealistic, this scenario provides an efficiency benchmark against which other policies can be measured."
[11] The so-called "Copenhagen Accord with only rich countries." I will here assume no trading between the blocks.
[12] http://cdiac.esd.ornl.gov/GCP/carbonbudget/2013/
[13] Christoph Böhringer et al. 2009: "EU climate policy up to 2020: An economic impact assessment" *Energy Economics* 31 (2009) S295–S305; Christoph Böhringer et al. 2009: "The EU 20/20/2020 targets: An overview of the EMF22 assessment" *Energy Economics* 31 (2009) S268–S273; Richard S.J. Tol 2012: "A cost–benefit analysis of the EU 20/20/2020 package." *Energy Policy* 49 (2012) 288–295,
[14] Christoph Böhringer et al. 2009: "The EU 20/20/2020 targets: An overview of the EMF22 assessment" *Energy Economics* 31 (2009) S268–S273.
[15] Richard S. J. Tol (2010) *The Costs and Benefits of EU Climate Policy for 2020*, Copenhagen Consensus Center.
[16] Tol (2010).
[17] Isabel Galiana and Christopher Green (2010) *Technology-Led Climate Policy*, in Smart Solutions to Climate Change; Comparing Costs and Benefits, Cambridge University Press.
[18] Gürcan Gülen (2011) *Defining, Measuring and Predicting Green Jobs*, Copenhagen Consensus Center.
[19] Research by climate economist Böhringer even shows that, fully implemented, the EU 20-20-20 plan does not boost energy security. See: Christoph Böhringer and Andreas Keller (2011) *Energy Security: An Impact Assessment of the EU Climate and Energy Package*, Copenhagen Consensus Center.
[20] International Energy Agency (2010) *World Energy Outlook 2000*, IEA/OECD.
[21] Pxxxvii, Australian Government Productivity Commission 2011: Carbon Emission Policies in Key Economies, http://www.pc.gov.au/projects/study/carbon-prices/report

[22] Pxxxix, Australian Government Productivity Commission 2011: Carbon Emission Policies in Key Economies, http://www.pc.gov.au/projects/study/carbon-prices/report
[23] Richard S. J. Tol (2011). The Social Cost of Carbon, Annu. Rev. Resour. Econ. 2011. 3:419–43, doi: 10.1146/annurev-resource-083110-120028.
[24] Data from OECD (prices http://bit.ly/10IXX5J.
[25] For a sobering examination of the scale of the technological challenge, see: Isabel Galiana, Christopher Green (2009) *A Technology-led Climate Policy*, in Advice for Policymakers, Copenhagen Consensus Center.
http://fixtheclimate.com/fileadmin/templates/page/scripts/downloadpdf.php?file=/uploads/tx_templavoila/COP15_Policy_Advice.pdf
[26] Other influential research papers arguing for this approach include:
Prins, Gwyn and Galiana, Isabel and Green, Christopher and Grundmann, Reiner and Korhola, Atte and Laird, Frank and Nordhaus, Ted and Pielke Jnr, Roger and Rayner, Steve and Sarewitz, Daniel and Shellenberger, Michael and Stehr, Nico and Tezuko, Hiroyuki (2010) *The Hartwell Paper: a new direction for climate policy after the crash of 2009.* Institute for Science, Innovation & Society, University of Oxford; LSE Mackinder Programme, London School of Economics and Political Science; and also
Steven F. Hayward, Mark Muro, Ted Nordhaus and Michael Shellenberger (2010) *Post-Partisan Power: How a limited and direct approach to energy innovation can deliver clean, cheap energy, economic productivity and national prosperity.* American Enterprise Institute, Brookings Institution, Breakthrough Institute.
[27] Zeke Hausfater 2013: Explaining and understanding declines in US CO_2 emissions.


Temperature over 422,000 Years
Temperature in degrees farenheit
40
35
30
25
20
15
10
Temperature (Difference)
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
Years Before Present

The Costs of Action and Inaction

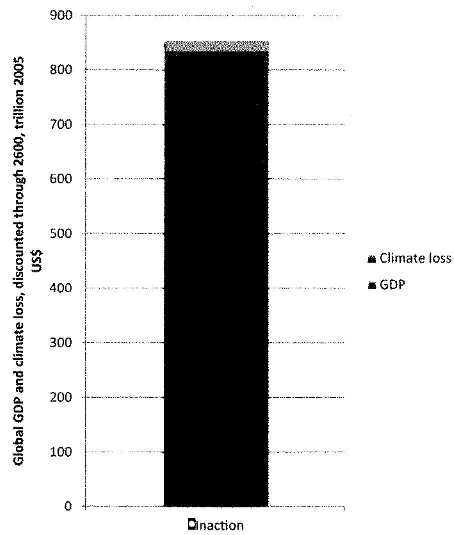
How to tackle global warming – and how not to

Bjørn Lomborg

www.lomborg.com

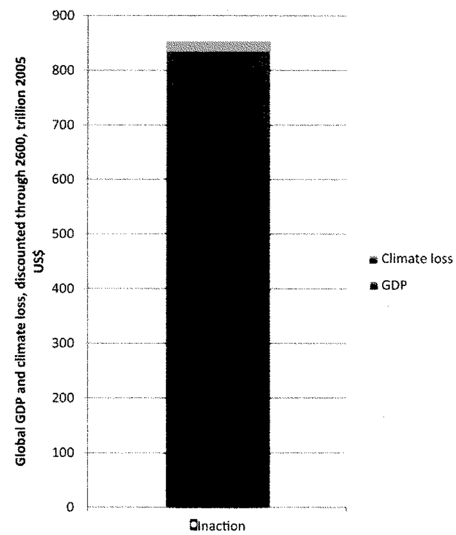
Global warming

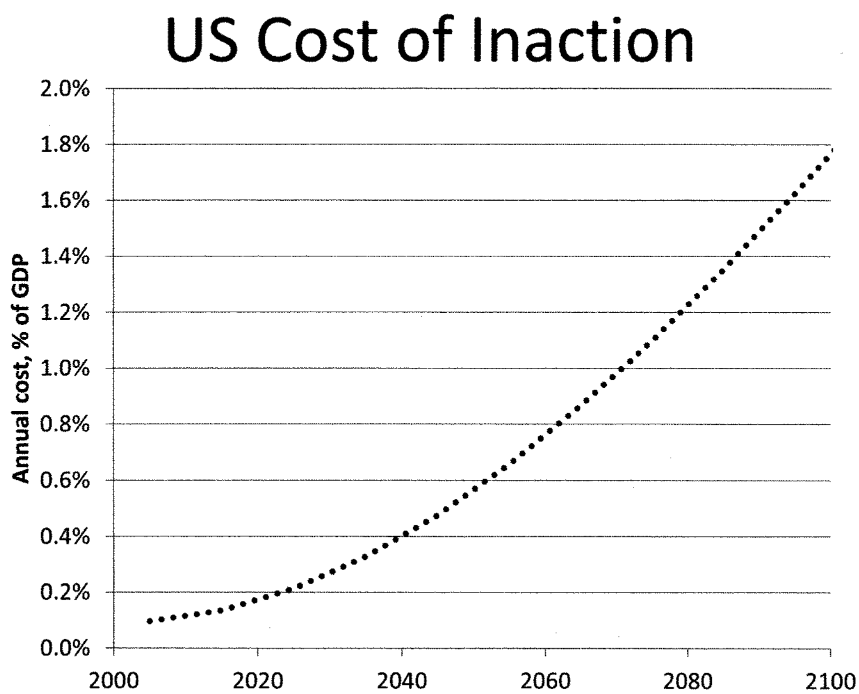
- Manmade
- Long-term problem
- For the US
  - 1.2% of GDP till 2600



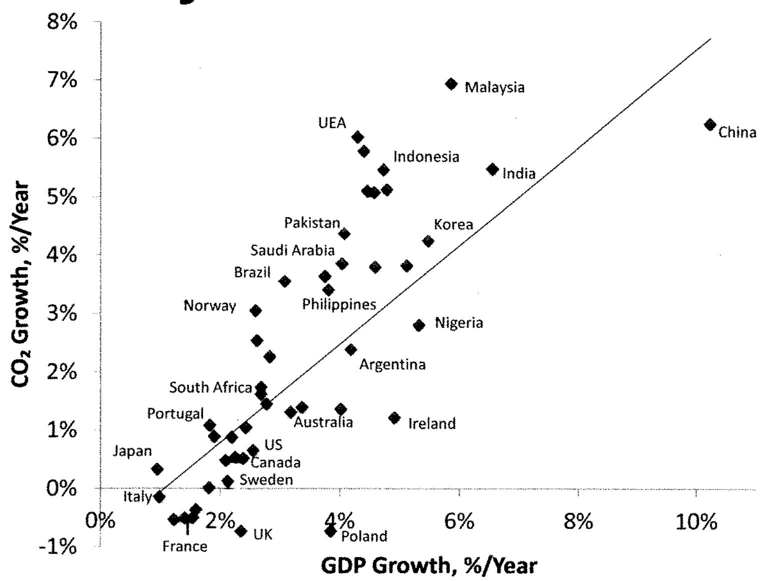
Global warming

- Not just GDP
  - But impacts on
    - Agriculture
    - Wetlands
    - Storms
    - Catastrophic climate change

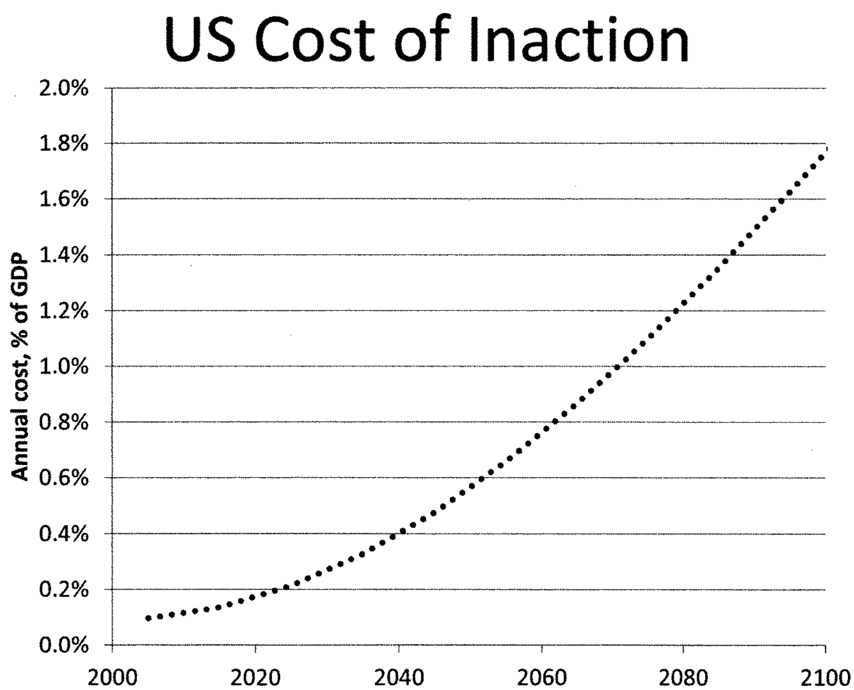



US Cost of Inaction
Annual cost, % of GDP
2.0%
1.8%
1.6%
1.4%
1.2%
1.0%
0.8%
0.6%
0.4%
0.2%
0.0%
2000
2020
2040
2060
2080
2100

Not just cost of inaction



World Bank data, 1990-2010



US Cost of Inaction
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2.0%
1.8%
1.6%
1.4%
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0.2%
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2000
2020
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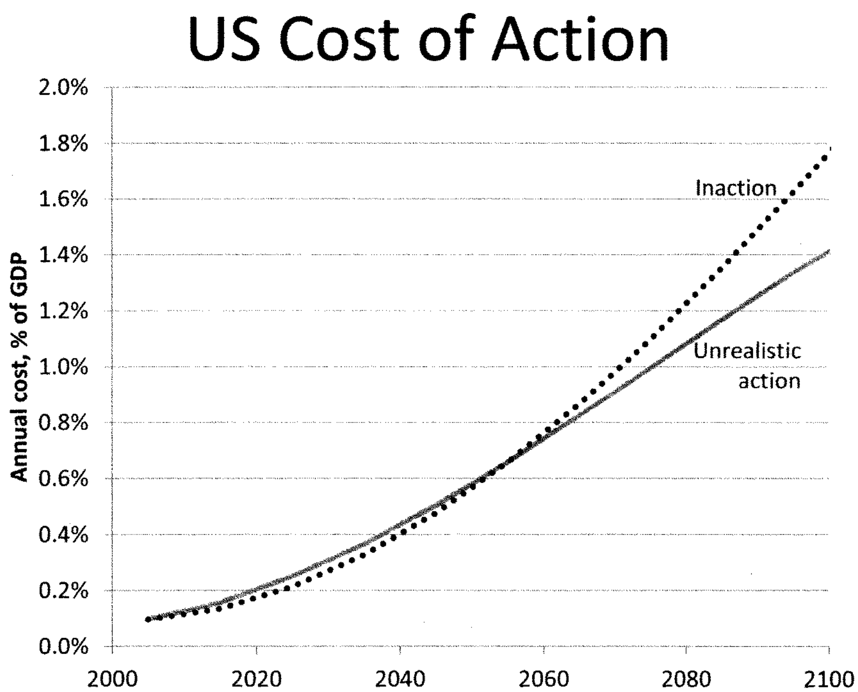
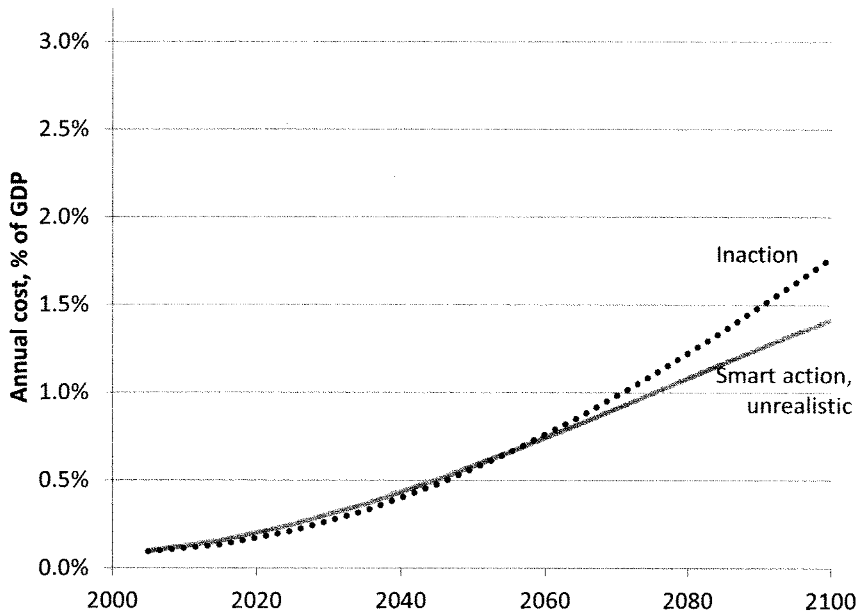
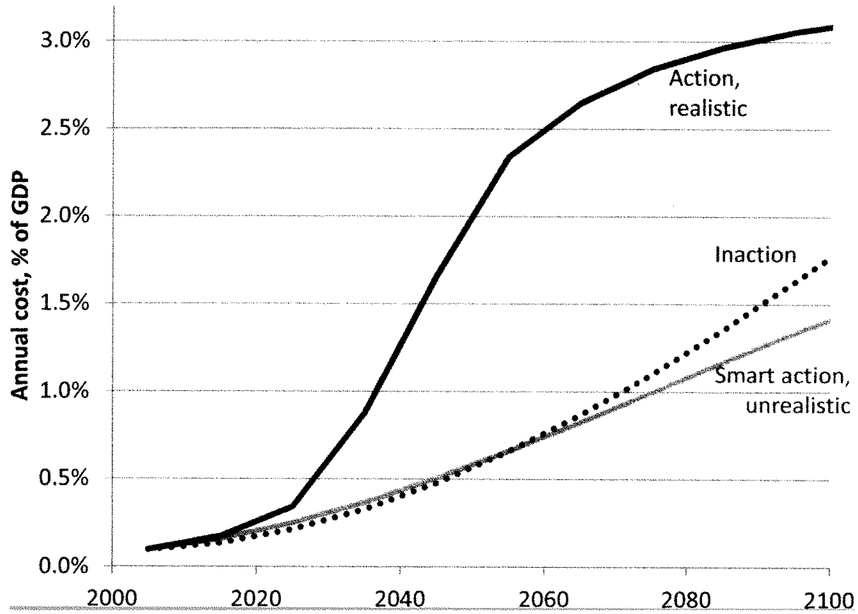
2080
2100


US Cost of Action
2.0%
1.8%
1.6%
1.4%
1.2%
1.0%
0.8%
0.6%
0.4%
0.2%
0.0%
Annual cost, % of GDP
2000
2020
2040
2060
2080
2100
Inaction
Unrealistic
action

US Cost of Action

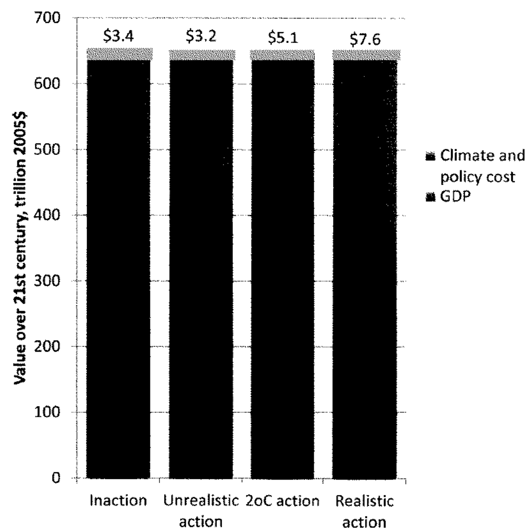


US Cost of Action vs. Inaction



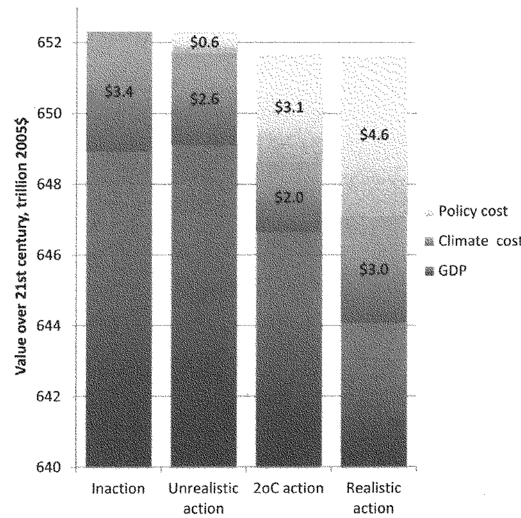
US Cost of Action vs. Inaction

- Cost of inaction
  - Climate damage
- Cost of action
  - Remaining climate damage
  - Climate policy



US Cost of Action vs. Inaction

- Cost of inaction
  - Climate damage
- Cost of action
  - Remaining climate damage
  - Climate policy



Need to fix global warming
But smartly

- Don't try to make fossil fuels so expensive nobody wants them
  - Infeasible politics
  - Bad economics
- Make green energy so cheap everyone wants them
  - Through innovation
    - This will take two to four decades
  - The computer analogy

Chairman MURRAY. Thank you very much to all of our witnesses today.

We will now start a round of questions, and, Ms. Lubber, I wanted to start with you. You talked in your testimony about some of the issues that businesses and investors will face as a result of climate change. What reasons do companies that you work with cite when they decide to address climate change?

Ms. LUBBER. Companies and investors are averse to risk. I mean, risk, as we all know, is an intimidating factor for companies and for the investors who invest in them, when they look at the depletion of natural resources. Can you run a manufacturing facility if there is not enough water? From the west coast and certainly California, where this is not about models, it is not about the future, it is about today, companies, ranches, agricultural farms do not have enough water. They are seeing catastrophic risks, financial risks today to companies, to consumers, to shareholders, and to investors. So certainly physical risks is a big issue.

For large landowners, for people who are worried about the impacts, whether you are Jones Lang LaSalle or any other large company, the fact of the matter is the impact on real estate matters, depending on where the real estate it.

So it varies sector by sector, but some of the largest issues are physical risks, certainly some reputational risks, litigation risks.

Chairman MURRAY. So they are looking at their bottom lines.

Ms. LUBBER. It is all about the bottom line. The investor network that we run is 105 investors, $13 trillion in assets under management, who say climate risk is an issue they need to address, they need to analyze, and they need to begin to invest taking advantage of. None of them are environmental. They may be environmentalists, but they have got shareholders, they go to work having to make money and beat the guy down the block, and they are focusing in a way different than we have ever seen before on climate risk as a financial risk.

Chairman MURRAY. Thank you.

Ms. Goodman, my home State of Washington is home to a lot of military installations that, as you know, are vital for our military operations, both in the Pacific and the Arctic regions. We have Naval Base Kitsap, which is the Nation's third largest naval base, by the way, and it is an essential element of the Nation's Strategic Defense Command and will need to address threats that are now posed by rising sea levels. And as you discussed, the Coast Guard's entire ice-breaking fleet and other key assets for operations are in the Polar region. Those are based in my State as well.

Based on what you have seen at other facilities, what kind of resources will be needed to ensure these facilities and others across the Nation are protected from the increasing threat of climate change and are able to continue to support the men and women in uniform?

Ms. GOODMAN. Thank you very much, Senator. The types of resources that will be needed across our military and our force structure will be, first and foremost, to maintain the vital and critical infrastructure such as those in Washington State, in Alabama, in Virginia, throughout all of our States, where we have critical military installations that are at risk from rising sea levels and extreme weather events. So we need to build in now those metrics that will allow us to sustain that military infrastructure, and that work is beginning to be underway. I have seen it begin to happen in the Pacific Northwest, in Virginia where there are efforts underway to develop the new standards that will support that infrastructure, and then new types of training as well to ensure that our men and women have the types of training they need, they can train under various and different conditions.

There is a very rigorous adaptation effort underway in the Department of Defense today to identify those vulnerabilities. The GAO report cited some additional methods. The challenge is going to be ensuring in a very tight budget time that there are the resources needed to support that.

Chairman MURRAY. Well, with the increased traffic and competition in the Arctic and with the variety of worsening threats actually in the Asia Pacific region, how critical, in your opinion, is it to maintain a strong presence at facilities like Naval Base Kitsap and Fairchild Air Force Base and Joint Base Lewis-McChord if the U.S. is going to be able to respond effectively to those challenges?

Ms. GOODMAN. Well, it is vitally important that we maintain and augment our ability to respond to the changes of the Arctic region, first and foremost, by addressing navigation and communication needs; secondly, by looking at the types of infrastructure we will need there; and then, thirdly, by looking at the types of capability in terms of ice-hardened vessels and related capability that we will need in the future.

Chairman MURRAY. So we need to maintain our presence there, and in order to do that, we need to deal with the effects of climate change soon.

Ms. GOODMAN. Yes. Yes, Senator.

Chairman MURRAY. Thank you.

Senator Sessions?

Senator SESSIONS. Thank you.

Colleagues, I really think we are going to have to do a better job of dealing with science, and the three Democratic witnesses here continue to say things like "Superstorm Sandy." Well, Sandy was not even a hurricane when it hit shore. It was a tropical storm. We have not had an increase in hurricanes. And I am going to ask some questions about it. I want to see the data that shows we have had an increase in hurricanes. We have had a decrease in Hurricane Sandy. While temperature projections were going up, they have not gone up. Tornadoes are not up. The IPCC says that droughts are not up worldwide and that the soil moisture content under the Palmer Index is better than it was previously.

So I do not—what is that? Do you speak to speak?

Senator WHITEHOUSE. I was talking to Senator Stabenow, but I am happy to say what I said—

Senator SESSIONS. All right. No, that is okay.

Senator WHITEHOUSE. —if you want me to say it to the group.

Senator SESSIONS. So those are things I have not heard disputed, and so maybe Senator Whitehouse has data that would dispute those facts. So now we have to decide what our policy is going to be. We can ask a lot of serious questions about it, what we should do, what we can do, what will work, and what is cost-effective.

Dr. Montgomery, I understood you to say that the model of action to deal with the threat of global warming is inefficient and could cost four times as much as it ought to cost. Is that what you indicated?

Mr. MONTGOMERY. Yes, it is, and that I think is something that we have found consistently in doing research on climate policy for many, many years, that as Dr. Lomborg said, the consensus among economists is that in order to achieve reductions, substantial reductions in greenhouse gas emissions, it takes a price on carbon that applies to every way that carbon dioxide is generated, and that means basically a tax on fossil fuels; that moving from such a politically infeasible approach to a regulatory program will increase the cost by ranging from, you know, several times to orders of magnitude, depending on how well the program is developed. We see this in California, where studies have shown that California's reliance on "complementary measures," as they call them, to achieve 90 percent of the reductions in their Climate Action Plan have substantially increased the cost over what it would have been if they had gone with a cap-and-trade program. And that is just talking about implementing in the United States. If we talk about doing something worldwide, once again, it is—you know, we have always used the phrase, "where flexibility." Unless everyone is involved, every source of emissions, trying to cut—do something about climate change with either narrowly focused regulations or by focusing just on a couple of countries multiplies the cost by four times or more.

Senator SESSIONS. Dr. Lomborg, you produced a chart that shows the action that we take would have a minimal impact. And using models that are pessimistic, which by that I think you mean that more severe projections in the future than many think are likely to occur, that is pretty interesting to me. I would ask you to comment a little bit more about that, and also as to whether or not you think the United States is more or less vulnerable than other places in the world if climate change continues as projected.

Mr. LOMBORG. Well, to answer your last question first, there is no doubt that rich countries are less vulnerable, and the U.S. is probably also less vulnerable. For instance, much of Southern Europe is more vulnerable; Australia is more vulnerable; and very clearly, most poor nations are much, much more vulnerable to climate change. So you actually have, as I also indicated, the global cost of global warming is probably on the order of 1.4 percent of GDP; whereas, the cost for the U.S. is 1.2. So you are less vulnerable.

If we look at the costs of action and inaction, it really is a question—as David also pointed out, it is a question of realizing we need to get very careful legislation. And in some ways, we can use the European Union as a good example of how not to do this.

The European Union obviously has large amounts of leg— I cannot say that word, sorry. Leg—sorry about that. Yeah, that approach. But they have—but, clearly, they are not as integrated as the U.S., and yet they have managed to make an incredibly inefficient climate program. Fundamentally, instead of having one carbon tax across all areas, they have at least 29 different carbon taxes, and that still only covers quite a few of the sectors. So you have a number of other ways that you have, so you probably have hundreds, maybe thousands of different carbon taxes. That leads to huge inefficiencies because obviously where you have high carbon taxes, you cut more, and where you have low carbon taxes or negative carbon taxes, you cut a lot less, or you even start to emit more.

So the reality here is the costs are needlessly expensive. We have good estimates that indicate the European Union's costs are at least twice what they need to be. And that goes back to the point of realizing between action and inaction there is a very small gap where you can actually make good policy and achieve a lower outcome where you can reduce climate impact so much more that the increased costs of the policy will not outweigh that entirely. But that requires all of you to be really, really good. And I would urge you, if you want to take a look, the OECD has done a study for all of their member countries looking at all of the energy policies in all of these areas and looking at what is the implicit carbon tax on all of these areas, and basically all countries, including the U.S., have incredibly varying carbon taxes across all these different areas.

So we are fundamentally very, very inefficient, and it is very hard to get it right.

Senator SESSIONS. Madam Chairman, thank you for the hearing. Colleagues, I think Dr. Lomborg's paper and that of Dr. Montgomery would be valuable to us to study. If we are going to enter this field, we have got to know what it is going to cost and how best to achieve the goals. Dr. Montgomery noted his background. Mr. Lomborg is cited as Time Magazine's one of the 100 Most Influential People in the World. So we are glad that you are here. Esquire Magazine has you as one of the 75 Most Influential People and 50 People Most Likely to Save the Planet by the U.K. Guardian. And so you, Dr. Lomborg, have been an international voice of, I think, common sense and wisdom on these issues, and thank you for coming to the United States today to participate at this hearing.

Chairman MURRAY. Thank you.

Senator Stabenow?

Senator STABENOW. Thank you, Madam Chair, and thank you to all the witnesses. This is an incredibly important topic to all of us, obviously in the short run and in the long run.

Let me just start by—I do not know where to start, actually, Madam Chair. There are so many things here.

Let me just start by saying that if 97 percent of the climate scientists surveyed in the proceedings of the National Academy of Sciences agreed that climate change is real, probably real. If 97 percent of the doctors said I was sick, I would probably pay attention to that. So I think that we need to start from that knowing there may be some variations on how we got here.

As Chair of the Agriculture, Nutrition, and Forestry Committee, I also want to start by just saying that, Ms. Lubber, you are talking my song here about what is happening in agriculture. We just wrote a 5-year farm bill, and the very first thing we had to do was use the permanent Livestock Disaster Assistance Program because of the droughts all over the country. And we have forestry provisions to look long term at preventing forest fires and dealing with disease. We are stealing all the money from those preventative efforts to fund fires. And so there is a huge cost.

I do have to say, Dr. Montgomery, I was very surprised to hear you say that things like crop insurance have caused the problem. You could also say farming has caused the problem. If we did not eat, did not farm, we would not need to worry about these things. But crop insurance is there to make sure we actually have the safest, most affordable, most reliable food supply in the world, which we do, and the costs, yes, are going up. But they are going up because— not that we have never had storms, but as we heard testimony in the Agriculture Committee, and we now have a USDA Climate Office we never used to have before because of impact on agriculture and forestry, but what we heard is it is more intense, it is more volatile, it is longer term. It is not that we have never had storms, but the storms are different now and more intense and causing more damage.

But I want to take my time to ask a question regarding how we deal with this. I mean, we are dealing in the Agriculture Committee with paying for crises, which we are doing every day now, and we better all care about that if we are care about food for our families and the food industry, which is a huge job creator. Sixteen million people work because of agriculture.

But let us say that we just put aside the debate on climate change and just talk about how to create jobs, how to move forward, clean energy because it would create jobs. And I guess I would ask Ms. Lubber about that, and first say this: We have had in place since at least 1916 permanent incentives for the oil industry, oil and gas industry, embedded in the Tax Code. It worked well. Folks say do not pick winners and losers. We picked a winner, and they won, and so for 100 years we have given tax incentives at, for 30 years now, for the last 30 years, about $166 billion after adjusted for inflation that we have invested in the fossil fuel industry. And then we now go to the fact that DBL Investors Report says that Federal spending on oil in the first 15 years of deployment was five times greater than what we are spending on renewables, and certainly renewables are stop-start, stop-start.

So could you give us more detail about the investments you see businesses making in new energy technologies, energy efficiency, why on its own—I should say, by the way, I say so many times there are 8,000 parts in a big wind turbine. Somebody has got to make every single one of those. That is manufacturing jobs. We, by the way, can do that in Michigan. But why is it from an economic standpoint important that we get these tax incentives right, with or without talking about climate change?

Ms. LUBBER. Right. Well, I do think markets and the economy respond to honest pricing signals, so starting with the pricing signals and then getting to the fossil fuels versus renewables.

The pricing signals right now are distorted. Fossil fuels have had huge subsidies for decades and decades, and every time we want to consider the wind energy tax credit or the production tax credit, we renew it every year—some years we do, some years we do not. Every person in that industry says the stop and the start, the not knowing is there going to be a tax credit or not, has hurt them. Now, despite that we are seeing progress. But without question, we need to either cut back fossil fuel subsidies or certainly equalize them with renewable energy.

The second pricing signal—and I am not here today to talk about a price on carbon, but the reality is when you price something appropriately, capital markets work beautifully. And if things are priced inappropriately, they do not. We know that carbon pollution, regardless of whether we think it is 99 percent or 97 percent likely, carbon pollution has a price, an enormous price to society. We have talked about that today. But we do not put a price on carbon pollution. When something is free—carbon pollution is—you get more of it. So we are seeing carbon emissions in different parts of the world go up. So I do think we have got to get those pricing signals and fossil fuels right.

When we look at now, right now, $860 billion is going into looking for new fossil fuels, fossil fuels that we may never be able to burn. There may be stranded costs because we are going to stay at a 2-degree world, we already have more fossil fuels mined than we will ever be able to burn. But we are about to invest $860 billion a year into more fossil fuels, much of which will become stranded if we do not stop and think.

So what we are seeing, though, which is the good news side of it, the International Energy Association says we need $1 trillion in investments in renewables by the year 2030. That means a half a trillion by 2020. Right now we are at a quarter of a trillion dollars of investments in renewable energy, and that is growing. Solar energy is now cost competitive, price competitive. It is growing enormously all around the country. Wind energy is growing. And let us look at who is producing it. It is Siemens, it is General Electric. These are not anymore only the small, little shops in somebody's garage.

And whether it is a small solar company, though, or a large, the installations are local. They are in our country. They are jobs that are here on the ground. They are not jobs in other parts of the world, and they are productive.

I sit on an advisory board to Jeff Immelt, to GE. The largest producing revenue stream at GE is Ecomagination, their line of products that are about renewable energy or about greener technology.

So there is growth. We need to see more of it. We will see more of it if we adjust the subsidies and we get the market signals correct. If we continue to say carbon pollution is free or price it as if it is free, free things, we get lots more of it. We need to get less of it.

Chairman MURRAY. Thank you.

Senator Whitehouse?

Senator WHITEHOUSE. Thank you, Chairman.

Mr. Lomborg—first, one question. It appears to me that everybody on this panel agrees that climate change is real, it is really happening, and it relates to carbon emissions. Is that true across the board of all five of you? Yes? Okay. Very good. That is a start. That is a start.

Mr. Lomborg, let me ask you to look at Figure 1 in your testimony, which is a graph that shows, even using your numbers, that by 2070, the cost of global warming turns negative, and my question to you is: On that graph, once you get past 2070, there is a very apparent trajectory of that line downward, and then the graph ends at 2100. What is your expectation for the continued trajectory of that graph further?

Mr. LOMBORG. It will definitely go down and further down. We do not—

Senator WHITEHOUSE. At a similar rate, do you think, roughly? Do you have any reason to think it will vary from that angle of descent?

Mr. LOMBORG. Well, it depends a lot on the projections of what are we going to do in the 22nd and 23rd century, which is probably very, very hard to make any, you know, reasonable estimates on. But that is obviously why I say we do need to fix global warming. The question is not whether we should do it. The question is whether we should do it now or whether we should do it with better technology.

Senator WHITEHOUSE. And, of course, what you are representing there is a net harm.

Mr. LOMBORG. Yes, there is the net harm—

Senator WHITEHOUSE. So a farmer in Siberia will do better as things get warmer up there. Africa, Asia, places like that, will suffer a great deal. Correct?

Mr. LOMBORG. Yes.

Senator WHITEHOUSE. Turning to your Figure 4, there is a lower line, a curve that you describe as the cost of unavoidable global warming. I assume that is the cost we have already baked in by not having taken action already. Is that correct?

Mr. LOMBORG. Yes.

Senator WHITEHOUSE. And then you have a higher cost, which is the cost of unmitigated global warming, if we do nothing. And at 2100 those two graphs end. It is denominated in percentage of GDP. Could you give me a U.S. dollar equivalent value for the gap between the bottom line and the top line at 2100?

Mr. LOMBORG. I am trying to think. It is like 1.6, 1.8 percent, and the U.S. GDP is about $100 trillion. So it is a little less than $2 trillion.

Senator WHITEHOUSE. A little under $2 trillion, all right. And then similarly, in Figure 6, there is a cost- benefit curve on the difference between an optimal climate policy cost and benefit, and by 2100 would that be the same number if you were to translate the gap between your cost line and your benefit line into a U.S. dollar equivalent—

Mr. LOMBORG. No, not at all, because that is one of the points, that—

Senator WHITEHOUSE. So what would that number be?

Mr. LOMBORG. It would be about—and, again, I am just making this on the fly, but about $400 billion.

Senator WHITEHOUSE. $400 billion.

Mr. LOMBORG. Because most of the damage will still be there.

Senator WHITEHOUSE. And we are not exactly certain how this unprecedented change to our atmosphere and oceans is going to work out entirely, are we?

Mr. LOMBORG. You are asking me whether these numbers are absolutely true? No, of course they are not. It is a model.

Senator WHITEHOUSE. In some of the hypotheticals as scientists look forward, there is a credible view that in the out-years there are really actually potentially catastrophic effects, are there not?

Mr. LOMBORG. Well, there is a lot of conversation on the catastrophic impact, and this has actually been incorporated in an economic perspective into this model.

Senator WHITEHOUSE. That is my question, because when you incorporate a catastrophe for humanity in out-years, do you discount that?

Mr. LOMBORG. You both discount it and you also look at what is the probability. And can I just—

Senator WHITEHOUSE. No, stop, because you have gotten me right to the point that I want to get to, which is the question that I have. An American family living in this country in 2114, let us say, 100 years from now, if they are experiencing the effects of climate change and if it is a harsh effect, will they be experiencing a discounted effect or they will be experiencing the full-on effect that we will have caused them?

Mr. LOMBORG. They will be experiencing full-on effect, but, of course, they will also be experiencing the benefits of all the technology and all of the leftovers that we have left them with, the technology that will make them—you know, we will have—

Senator WHITEHOUSE. Do you agree—

Mr. LOMBORG. —$100 trillion—

Senator WHITEHOUSE. Do you agree that there is at least a moral choice being made when we discount harm to future—there is something selfish about discounting that because we are not going to be around for it. It is going to be other people suffering—

Mr. LOMBORG. Oh, we do that all the time. I believe the U.S. has a very, very high debt, which, of course, is a very explicit way of saying we do not care all that much about the people who are going to be paying that debt later on.

Senator WHITEHOUSE. It is a little bit different when you are dealing with a financial characteristic that you can invest against versus a change in the very operation of the planet's oceans and atmosphere, no?

Mr. LOMBORG. Unless we are talking about something that basically eradicates humanity, I would say, you know, we have looked and we have good models, for instance, on what is the impact, for instance, of a 5-meter sea level rise. If I could just give you another example—

Senator WHITEHOUSE. My time has expired, so I will have to let the other Senators take on the rest of the time. Thank you.

Mr. LOMBORG. Madam Chairman, can I just make a very short—

Chairman MURRAY. If you can do it very short, because we have a number of Senators who are waiting.

Mr. LOMBORG. Professor Nordhaus has actually looked at a similar issue where we know that there is a chance that asteroids are going to hit us, and we know what is the cost of ensuring that we can find another 9 percent of those asteroids. We have not paid that price. So we have a very clear example. We pay for finding 90 percent, but we do not want to pay for finding 99 percent. That is an indication of how much we care about the planet.

Senator WHITEHOUSE. Not only an international celebrity, but an expert on asteroids. I am impressed.

Chairman MURRAY. Senator Johnson.

Senator JOHNSON. Thank you, Madam Chair.

I am certainly somebody on this Committee that has tried to look out 30 years in terms of our own debt and deficit, and with a fair amount of humility, realizing even 30 years is pretty hard to predict. And I also come from the State of Wisconsin, though, and when we are looking at literally 100 years out and beyond in terms of what is going to be the mean temperature, you know, what is climate going to look like, I think it is just kind of hard to predict, and I am not buying into the consensus myself.

What I would like to do is I would like to just take a look at what we know what has happened in the past. And we did get this slide up here for me. I appreciate that, the Budget staff. This is a chart, a graph showing temperature differences from the Vostok ice core data description, conducted in 1999, which shows over the last 422,000 year— and that is what we are talking about here, geologic time. I am not a scientist. I am not quite sure how they do this. They have got their methods. I believe this has been pretty well verified that this is about as good as we can do, trying to determine this. But whether you buy the complete accuracy, it shows one, two, three, four—and we are in the fifth cycle of mean temperature change, somewhere in excess of 15 degrees over the last 422,000 years.

I mentioned I am from Wisconsin. Twenty-three thousand years ago, Wisconsin was covered by a glacier, kind of estimates somewhere in the 5,000 to 6,000 feet thick—23,000 years ago.

Now, something caused that glacier to recede. I know there were men back then. I do not think there were enough men building campfires to create fossil fuel CO2 emissions to cause it. Something else caused that. I think this is just common sense.

Now, if you take a look at this chart, we are up on an upswing over this 422,000-year period. I guess I am just asking, anybody else ask themselves this question: What caused this? I know there are a number of theories. I know everybody kind of raised their hand and said, oh, this is for sure manmade. Again, I will not doubt that—I will not deny that man has an effect on our environment. But what caused this?

And with these types of long-term climate change trends—I get accused of being a climate change denier. I am no denier. I fully acknowledge we have had climate change over geologic time. Other things are at play here.

So I will just kind of go down the line. What is your response to this type of chart, these types of long-term facts? Not trying to project out 100 years but really taking a look at the last 422,000 years, we have seen some pretty dramatic changes in climate. Let us start at the very end there.

Ms. LUBBER. Sure, thank you. And I am on my way to Wisconsin following this testimony to the SC Johnson Wingspread Conference Center, so I will be in your State.

As I said at the beginning, I am a lawyer; I am not a scientist. I am cognizant of the 99 percent of the scientists who say that climate change is now, it is manmade, it is happening, and we are seeing increased changes in our climatic—

Senator JOHNSON. Okay. Is there anybody here with a little bit more of a scientific background, or is it all pretty much—sir?

Mr. MONTGOMERY. I am not a scientist, but I have been participating in work—

Senator JOHNSON. Turn your microphone on.

Mr. MONTGOMERY. I have been participating in the work of the integrated assessment modeling community and talking to effects researchers and the MIT climate scientists for a long time. I think what I would say is, yes, there is general agreement among climate scientists that anthropogenic emissions affect greenhouse gas concentrations in the atmosphere and that affects temperature.

I think there is a lot less agreement about whether what we are observing—and I think there is general agreement, yes, what we are observing today is probably associated with manmade—anthropogenic emissions. But I think if you got the climate scientists to be honest about it, they would all agree that but right now it is making very little difference. And I think if you eyeball the data, you see that. It is still very hard to distinguish the signal from the noise.

Senator JOHNSON. That is what—I am trying to just put things in perspective here. I mean, over geologic time, yeah, we have had climate change. Glaciers have receded. Water levels have risen. And that is always going to happen whether—you know, it is going to happen long past man, the time of man on Earth. Isn't that true? Okay. That is all the questions I have. Thank you.

Chairman MURRAY. Senator King.

Senator KING. Senator Johnson, I will see your 422,000 and raise you a million. I am asking my staff guy to bring over to you—I do not have the chart that you have, but the answer to your question, why does it change? Over the last million years, as you will see on the chart that I am about to give you, it is almost an exact correlation with levels of CO2 in the atmosphere. CO2 goes up, temperature goes up. CO2 goes down, temperature goes down.

On the other side of the chart, what you see is the last million years of CO2, and, yes, CO2 over the last million years has varied widely, just as your chart does, up and down, for all kinds of reasons. It was not people making campfires. It was probably volcanoes and all other kinds of natural forces that were going on.

But the real point is that in about 1860 that variation that you see was always between about 200 and 300 parts per million of CO2. In 1860, it took off, and this summer, for the first time in 3 million years, it reached 400 parts per million.

And if, in fact, the correlation between CO2 and temperature holds that your chart demonstrates over into the short-term future, we are in a crisis situation. It is all about CO2 and the relationship with temperature, and I think the data is pretty clear. Yes, there has been a variation, but about the time we started burning fossil fuels in large quantities, it goes up very dramatically, from a top level prior of about 320 parts per million to this past spring 400. That is the dig deal.

And I think Mr. Lomborg's testimony is fascinating, and I think it really gets to the question of inaction versus action. And to me it comes down to a formula. Divide the cost of inaction times some kind of X factor for risk divided by the cost of action. If the result of that formula is 1.0 or better, then we need to act.

You would argue that it is below 1.0, at least under various considerations. And, of course, the big question here is: What is the rest of the world going to do?

I have a hard time telling people in Maine they have got to pay $6 for a gallon of gas if China and India do nothing.

On the other hand, the question is: What is going to provoke them to do something? And I am sure that our doing nothing is not going to provoke them to do something. This is a global issue, and it has to be dealt with on a global basis.

But somebody has got to lead, and it seems to me, as you have pointed out, we are the wealthiest country in the world; we are in the best position to lead, but not be stupid. I think your analysis is very interesting.

There is another factor, though, and that is, the risk of catastrophic climate change. The scientists at the University of Maine that study this, we have a school, a division studying climate change, studying Greenland ice cores. The last time I was there, they used a word that scared me. The word was "abrupt." And apparently in history things like the Ice Ages did not start—I always thought it took thousands and thousands of years. In fact, it took decades. And if we have abrupt climate change that is triggered by this extraordinary rise in CO2 that does something like, for example, the melting of the Greenland ice cap and that changed the route of the Gulf Stream, your country would be uninhabitable along with Britain, Scotland, and all the rest of Scandinavia. That is what worries me, is the X factor.

And I guess, Mr. Montgomery, here is my question: Do have homeowners' insurance on that house at the Chesapeake?

Mr. MONTGOMERY. Yes, I do.

Senator KING. And what do you reckon the risk of your home burning down is? Once every how many years? A hundred years? Fifty years?

Mr. MONTGOMERY. My wife worries about it more because she actually had her home burn down around her when she was a little girl. But it is—I think that the insurance is actuarially worth it. It covers enough risk.

Senator KING. But it is a pretty remote risk, but you are paying $500 to $1,000 a year—and I do not know what your GDP is, but $1,000 is probably a measurable percentage of it—to ensure against a remote but yet enormously consequential risk. It seems to me that is the analysis that we have to go through here.

Dr. Lomborg, your thinking?

Mr. LOMBORG. You are absolutely right. The question and the crucial part of that analogy is you have to actually get your money back. That is what you do from the home insurance. But we are actually more likely—

Senator KING. But you never get it back if your home does not burn down.

Mr. LOMBORG. No, no, no. But you do get it back if it does burn down, and, unfortunately, the risk insurance—it is better seeing this as a risk reduction because there is nothing paying back. We are simply reducing the risk of, for instance, catastrophic climate change if we make more action. So we are reducing the risk, but we are not actually getting a premium. There is nothing, you know, paying back the Earth if it burns, if you will.

Senator KING. But I guess—we know that there are costs, but we also know that there are risks. And I guess the question is: Who—don't you sometimes make expenditures in the short term to avoid a drastic, unlikely but very dire consequences risk rather than hope that that does not happen? I mean, it seems to me that is the calculus. And, again, I come back to my failure. It is cost of action divided by cost of inaction. But you have got to multiply the cost of inaction by this X factor for catastrophic risk.

Mr. LOMBORG. Of course. And if you will allow me to trivialize the metaphor a little bit, my problem is that there is a real risk we will end up paying more than what the house is worth, but actually to get less than the house back if it burns.

Senator KING. And I think that is a very valid point, and what you are saying is—and I think you used this term— we have to be smart about this.

Mr. LOMBORG. Yes, yes.

Senator KING. We cannot just throw the kitchen sink at it. We have got to really think about what are the costs and the benefits.

Mr. LOMBORG. And, Senator, could I just briefly point out, I think the U.S. has one thing to really show the Chinese and everybody else, because you have actually invested over the last 30 years about $10 billion in fracking technology, and fracking technology—now, let us leave aside all the other issues that I am sure we can come up and talk about. It has dramatically reduced U.S. carbon emissions. And it is probably—we estimated in 2012 it reduced about 300 megatons of CO2. Remember, all the solar and wind in the entire world has cut 275 megatons. So you have actually cut more with fracking.

So, you know, the short-term solution over the next 10, 15 years and the only realistic way, if we could get China and Argentina and many other countries to frack, they would switch from coal to gas, and we would see a dramatic reduction in CO2.

Senator KING. I am so glad you said that because—let the record show that hydrofracking was invented using Federal subsidies and Federal loan guarantees, and it is, as you say, a dramatic benefit both for our economy and our environment. So thank you very much for your testimony, and I just want to end by saying I thought Senator Whitehouse made a very important point. We have got agreement here that climate change is real and that people have something to do with it. That is progress. Now we are arguing about how to fix it. I am all in on that discussion.

Thank you very much, all of you.

Chairman MURRAY. Thank you.

Senator Kaine?

Senator KAINE. Thank you, Madam Chairwoman, and to the witnesses, and I want to pick up with the same point. We so rarely have a hearing in this place where the majority and minority witnesses agree on an important threshold question, especially one that is as controversial on the floor of this body as this question is. But the five of you have basically agreed that climate change is real, that it is a legitimate problem that needs to be solved, that it is significantly manmade. I mean, it is just not that hard. It is just not that hard to say it. And I am so happy that the witnesses were willing to come and agree on that basic proposition, because we cannot even have a meaningful debate about that. People will not even use the phrase "climate change" on the floor of this body.

Now, questions remain: How serious? What to do about it? Over what period of time? But what you have just said is what my constituents believe. Virginians are science people. The person we most admire, the Virginian we most admire was the preeminent scientist of his day—Thomas Jefferson. We are pro-science people. And those who attempt to argue against the scientific consensus and pretend that mankind does not have anything to do with these climate issues, they do not get very far in my Commonwealth. And they should not get far here.

And so I am really refreshed to hear—I mean, when—I am just looking at Dr. Montgomery's testimony. When one of the minority witnesses says, page 2, "In the past few years I have taken a particular interest in the relative merits of mitigation and adaptation as responses to climate change risks, and in particular in the role of political and economic freedom in making it possible for poor countries to grow economically and at the same time to reduce their carbon intensity and become more resilient in adapting to climate change." You are working with poor countries to help them be less carbon intense. Good on you. To be more resilient to climate change, good on you. I hope we have these kind of witnesses, Madam Chairman, at every hearing we have.

So the question is: What do we do? What do we do?

Dr. Lomborg, I am going to start with you. I think the last bullet on your last slide was basically kind of "Make green cheap," right? Figure out—and I think you are a pro- innovation, pro-technology guy. And I understand from your answer to Senator King that maybe you are saying natural gas to do fuel switching is the short-term, next-20-year strategy, while we continue to plow investments into lower carbon—either low- or non-carbon energy alternatives. Is that essentially your pitch?

Mr. LOMBORG. Yes, the fundamental point is if we could make solar and wind so cheap everybody wanted them, you know, we would get China and India to do it in a day.

Senator KAINE. And is there any reason to doubt that solar and wind will follow other—the computer example, other kinds of technological examples? When they are new technologies battling against mature incumbent technologies, their per unit cost will be higher, but the more we deploy the investments and learn from them and then make refinements and adjustments, the gap in per unit cost drops. Is there any reason to doubt that the same thing would happen with wind and solar, that the costs of these energies, these low- and no-carbon energies, will continue to come down?

Mr. LOMBORG. There are two caveats to that argument. One is if you take the computer analogy, it is a question of when do you subsidize it. Remember, the computer—we subsidized the research and development for a very long time. We did not go out and say everybody in America should have a computer in 1960. Sure, it would have made it a lot cheaper, but it would probably have been phenomenally costly to do that, to produce all those computers. So we bought a few of them, and we put a lot of money into research and development.

The second part is to remember—

Senator KAINE. So but the notion of a subsidy to some degree, that was necessary, doing the subsidy the—

Mr. LOMBORG. Yes, but the subsidy was to the research.

Senator KAINE. To the research.

Mr. LOMBORG. But the point is to make them efficient so that—

Senator KAINE. So we should not be cutting research budgets if we are going to be going after.

Mr. LOMBORG. No. The second part is that there is a significant problem with solar and wind and other that they are intermitting.

Senator KAINE. Episodic.

Mr. LOMBORG. And so basically we need to have much more battery technology if solar and wind is going to cover a large proportion. Remember, right now—and this I think is some of the numbers that we do not generally recognize. The world gets 0.25 percent of its energy from wind. The rich world gets 0.7 percent of its energy from wind. Very, very low proportions. Even the International Energy—

Senator KAINE. But I think I heard a stat that about 35 percent of the power added to the grid in the United States since 2005 has been wind. So it was not an technology that was really used. It still as a proportion of the total is pretty small, but it is coming on quickly.

Mr. LOMBORG. It definitely is rising, but just to give you a sense of proportion, the International Energy Agency estimates that by 2035, which very optimistic assumptions, we will get like 3 or maybe even 4 percent of our energy from wind and solar.

Senator KAINE. I want to ask Dr. Montgomery a question. You mentioned the Chesapeake Bay, so I just cannot resist since I am a lover of the bay. So you are focusing on—we all have a consensus here, but what is the right way to do it, and you say adaptation rather than mitigation, or at least that may be the most cost-effective way. How would you restructure the Flood Insurance Program?

Mr. MONTGOMERY. I do not have a specific design for it, but I think that the first thing would be to make the insurance premiums actuarially fair; that is, the more we think climate change is going to increase the severity of storms, the higher the premiums get, so that people make—

Senator KAINE. Make everybody who lives in a floodplain, even though those floodplain maps are dramatically expanding, pay the full freight.

Mr. MONTGOMERY. Pay the full freight.

Senator KAINE. That would be your proposal.

Mr. MONTGOMERY. That would be—I mean, I am sure other things need to be done, but that would be the basic principle.

Senator KAINE. You talked about politically infeasible on some of the other things up there. I think making a whole lot of people, including, you know, poor people who live in places that were not floodplains when they bought the house, suddenly bear the full freight of flood insurance. That is as politically infeasible as a carbon tax. We have got a lot of tough choices coming up here.

Senator WHITEHOUSE. More so, say some of us.

Senator KAINE. All right. Thanks. Great testimony.

Thank you, Madam Chair.

Chairman MURRAY. Senator Coons.

Senator COONS. Thank you, Madam Chair. Thank you for the opportunity to have a robust and hopefully constructive conversation on this difficult issue, but one that really does have an impact on the long-term Federal budget, on State and county and local budgets, on family budgets, on our national security, and one that we really on the Budget Committee should be engaging in and taking seriously.

On the train down this morning from Delaware, I got a chance to talk to my Governor, Jack Markell, who is testifying at one of the EPA public hearings about the new Climate Action Plan today. He and I represent the lowest mean elevation State in America, so while Florida and Louisiana certainly have their exposures, we are one of the first to go as sea level rise becomes a reality. And Delaware has invested a great deal in actually mapping out and understanding what the impacts of climate change may well be to our State, and under some scenarios, rising sea levels will submerge more than 10 percent of our State by the end of this century. This is not hundreds of years away or—it is, frankly, within the lifetime of my children, and the areas that will be submerged are really significant because—since they are along our major rivers and at the center of our major cities, they are concentrated areas of major economic impact.

If I could, to Director Gomez, to what extent do you think it is important for the Federal Government to help States and localities model and predict and prepare for what are, I think, likely significant impacts on their economy, on their infrastructure? We can get to the issues of sort of global security and competition later. I used to be a county executive. Our Governor and I spent a lot of time hardening our State against incidents like Superstorm Sandy. Here on the Budget and Appropriations Committees, I have been very concerned about our coastline. What kind of role do you think the Federal Government ought to have in helping prepare for these impacts?

Mr. GOMEZ. Sure. Thank you for that question. So that is a very important thing to make sure that it happens. There are about $300 billion that are invested annually across the country on infrastructure. About 25 percent of that is Federal dollars. But it is very important for the Federal Government to provide technical assistance to those local and State decisionmakers that are making decisions about how to build that bridge, for example, or that seawall.

The Federal Government produces a lot of information. GAO currently has ongoing work looking at ways in which the Government can organize itself in terms of data that can be useful to these communities. So I would say—and that is also an area that we have in our high-risk designation, the need for good technical assistance, not only to provide it but to translate it to these officials who may not know exactly how to use the information or where the find it. But also important is for these officials, local and State officials, to start integrating and using the information in their planning processes so they can build resilience into their structures, whether it is maintaining them or building new structures.

Senator COONS. That is right. In my county government role, one of the challenges we faced was the future expense of health care and pension plans. One of the greatest challenges we face in our Federal budget is the future growth in entitlement costs. And as we have often debated around this hearing room, the sooner we begin to tackle long-term costs and the rate of growth in costs, the easier the difficult choices will be.

Isn't there a clear parallel here with climate change, the sooner that State and local government, the Federal Government gets serious about tackling this issue, the less burdensome and difficult the long-term consequences will be of those changes in direction?

Mr. GOMEZ. Again, in our high-risk designation, it is very much focused on limiting the Federal Government's fiscal exposure by better managing climate change risks. And so we identify a variety of areas, which you have all spoken about already, whether it is the Federal Government as the property owner of facilities, whether it is the Federal Government as the provider of property insurance or flood insurance, crop insurance, the Federal Government as the provider of disaster assistance which is not incorporated into the budget. So we are very focused on finding places and ways in which the Federal Government can limit these exposures.

Senator COONS. I am very struck, Ms. Goodman, by your testimony where you cite that the QDR, the Quadrennial Defense Review, has literally identified climate change as a threat multiplier and a catalyst for conflict. In my role as the Africa Subcommittee Chair on Foreign Relations, I have seen the steadily increasing challenges of growing famine, of changes in climate in a lot of different ways on the African continent.

Do you think this poses a long-term security risk to the United States if we do not deal with it responsibly now?

Ms. GOODMAN. Yes, Senator. Thank you for your question. Yes, we do. The Military Advisory Board believes that climate change is both a threat multiplier and a catalyst for conflict, particularly in Africa, a region already racked by poor governance, terrorist threats, and now increasingly natural resource strains from drought that have pitted herders against farmers and exacerbated conflict in a number of regions, from Sudan to Mali to other parts of Africa. Yes, it is a serious concern and one that needs to be addressed to face our own threats to our own country.

Senator COONS. Thank you. And the last question, if I might. In the exchange you had with Senator King, the metaphor I think you were working through Senator King was home insurance—I am sorry. It was with Dr. Montgomery, forgive me—how much home insurance do you pay for fire even though the risk of a fire burning your house down is right in—and the conversation and the back and forth was about risk mitigation.

I would suggest, Ms. Lubber, the constellation of companies that are involved in Ceres might give you better insight into this than I Have. That is really not the right metaphor. A slightly more complicated metaphor is the one that I think we ought to be looking at, because this is not just risk avoidance, it is also seizing an opportunity. Because in the same way that climate change poses real security threats to the United States and to our national security infrastructure, to our communities and our States and our physical infrastructure, it poses those same threats to our competitors globally. And in my view, the country that invests in the research and the development and the deployment of climate change adaptation and climate change mitigation technologies will dominate the global marketplace for everything, from transportation to infrastructure, power generation in the future.

And so if we invest, it is really more like investing and figuring out how to make the next generation fire truck that puts out the fire faster so that we do not just have passive insurance that we are investing in and we get no return unless there is a catastrophic event. But it is literally proactively investing in the technologies that will mitigate our losses and create new market opportunities for us globally.

Is that what the companies that have helped form Ceres see, is a market opportunity for us?

Ms. LUBBER. We are seeing it not only—

Chairman MURRAY. You have to turn your microphone on.

Ms. LUBBER. We are seeing that magnified every day. Let me give you a few examples.

In a recent report we did on clean energy, we are seeing it becoming the mainstream for U.S. corporations, some of the largest corporations; 60 percent of the Fortune 100 companies have goals for renewable energy and greenhouse gas reductions. Through the initiatives, 53 of 100 Fortune 100 companies said that through their own energy saving and investing in renewable energy, they have saved for themselves $1.1 billion annually, and their collective reduction in emissions decreased their annual CO2 emissions by the equivalent of retiring 15 coal-fired power plants.

Companies are seeing this is an opportunity to save money and to look at resources. When they invest in renewable energy, their employees love it. Their shareholders are starting to love it. Their consumers like it. Even the utility sector that makes up a third of the carbon emissions, we just released a study showing how major utility companies in every part of the country can both live with regulations and are starting to act even now to increase massive—massive increases in selling energy efficiency to their customers and renewable energy.

And think about it. It hedges our bets against erratic oil and gas markets. It is saving utility companies money as well as the largest companies. And it is being passed on to consumers in many instances.

It is no longer whether they should do it, from Microsoft to Dell to Time Warner. Companies are looking at reducing their carbon footprint and saving money and investing in renewable energy.

Senator COONS. Well, thank you. And in my own home State, DuPont, one of our longest established—

Ms. LUBBER. Major leader.

Senator COONS. —and major manufacturing and innovation company, they have a chief sustainability officer, a sustainability plan. This is not just something they do to sound good in the press or to satisfy environmental critics. This is a bottom-line, performance-enhancing business opportunity for them, and I am pleased to hear bipartisan enthusiasm for energy efficiency, an area where I really think the United States can competitively grow our market opportunities.

Thank you so much for your testimony.

Chairman MURRAY. Thank you very much.

I want to thank all of our colleagues and our witnesses. This has been a very important and interesting discussion today, and I especially want to thank all of our witnesses for coming here and joining us and giving your expertise as well.

As a reminder to everyone, additional statements and questions for the witnesses are due by 6:00 p.m. today, submitted to our chief clerk.

Thank you again to all of your for participating. With that, this hearing is closed.

[Whereupon, at 11:45 a.m., the Committee was adjourned.]

Questions for the Record

From Senator Sessions

To

Sherri Goodman

The Costs of Inaction: The Economic and Budgetary Consequences of Climate Change

July 29, 2014

Senate Budget Committee

Question # 1 :

According to a Yale Climate Connections study published in May 29, 2013, our country's share of the global carbon dioxide emissions is only 16 percent. Even with the lowered levels of carbon emissions in Russia, the European Union, and Japan, is it possible for the US to pursue a balanced budget that places our country on a sustainable debt path while significantly decreasing the level of global emissions given the extremely high levels of carbon dioxide emissions in countries such as China and India?

Answer:

The CNA Military Advisory Board's (MAB) latest report, *National Security and the Accelerating Risks of Climate Change,* focuses on the national security implications of climate change, and does not specifically assess the ability of U.S. to pursue a balanced budget. However, the MAB recognizes the importance of addressing and responding to the projected impacts of climate change in the near term to prevent far more significant, and likely more costly, impacts to reduce, adapt, and respond to climate change impacts in the future.

To the extent that protecting our national security is a significant driver of the federal discretionary budget, the MAB found that "To lower our national security risks, the United States should take a global leadership role in preparing for the projected impacts of climate change. This leadership role includes working with other nations, as well as with emerging nongovernmental and intergovernmental stakeholders—such as the Group of Seven (G-7), the World Trade Organization (WTO), private foundations, and so forth—to build resilience for the projected impacts of climate change. At the same time, the U.S. should lead global efforts to develop sustainable and more efficient energy solutions to help slow climate change."[1]

Question #2:

A Yale Climate Connections study published on July 2, 2013 reports that since 1990, China and India have increased their carbon dioxide emissions by 280 percent and 230 percent, respectively. These increases have dwarfed our country's recent emission reduction, 12 percent between 2009 and 2013, which has brought the US's carbon dioxide emissions to 1996 levels (an overall increase from 1990 of about six percent). How do you propose that we effectively reduce the consequences

[1] CNA Military Advisory Board, National Security and the Accelerating Risks of Climate Change (Alexandria, VA: CNA Corporation, 2014). P.5.

of climate change when any action we take will be more than offset by the emissions of other countries, namely China, India, and various developing economies?

Answer:

As noted in the response above, the number one finding of the CNA MAB's latest report focuses on the global leadership role the U.S. should play in this realm to address the serious threat of climate change both in the U.S. and abroad, including the bi-lateral and multilateral actions referenced.

The MAB report includes several specific recommendations on how to effectively reduce the consequences of climate change. These recommendations include:

1. **To lower our national security risks, the United States should take a global leadership role in preparing for the projected impacts of climate change.** This leadership role includes working with other nations, as well as with non-state organizations, to build resiliency for the projected impacts of climate change. At the same time, the U.S. should lead global efforts to develop sustainable and more efficient energy solutions to help slow climate change.

2. **Supported by national intelligence estimates, the U.S. military's Combatant Commanders (CCDR) should factor in the impacts of projected climate change across their full spectrum of planning and operations.** With partner nations, they should focus on building capacity and sustained resilience. Across their areas of responsibility, they should work with nations and non-state actors to lower risk in those areas where the impacts of climate change likely will serve as a catalyst for conflict.

3. **The United States should accelerate and consolidate its efforts to prepare for increased access and military operations in the Arctic.** DOD and other U.S. government agencies should build on and accelerate plans recently put forward in Arctic strategic planning documents. The Arctic is already becoming viable for commercial shipping and increased resource exploitation. The time to act is now. To expedite crisis response and requirements generation, the Arctic region should be assigned to one Combatant Command. To provide the United States with better standing in resolving future disputes in the Arctic, the U.S. should become a signatory to the UN Convention on the Law of the Sea (UNCLOS).

4. **Climate adaptation planning should consider the water-food-energy nexus to ensure comprehensive decision making.** Rapidly growing population and urbanization, combined with changes in weather patterns, will stress resource production and distribution, particularly water, food, and energy. These vital resources are linked, and adaptation planning must earnestly consider their interrelationships.

5. **The projected impacts of climate change should be integrated fully into the National Infrastructure Protection Plan and the Strategic National Risk Assessment.** As military leaders, we know that we cannot wait for certainty. The failure to include a range of probabilities because it is not precise is unacceptable. The Strategic National Risk Assessment must include projected impacts of climate change over the coming decades so that resilience needs and requirements associated with these projections can be better defined in the National Infrastructure Protection Plan.

6. **In addition to DOD's conducting comprehensive assessments of climate change on mission and operational resilience, the Department should develop, fund, and implement plans to adapt, including developing metrics for measuring climate impacts and resilience. The Department should place a greater emphasis on the projected impacts of climate change on both DOD facilities and associated community infrastructures.** This recommendation includes decisions to be made through any future processes, including base realignment and closure (BRAC), as well as expanding climate projections in planning and design factors for new bases, training facilities, or other infrastructure. In new or even existing bases, DOD should explore innovative solutions such as public-private partnerships to build climate change–resilient infrastructure, both on and off base. Climate change impacts should be considered in all vulnerability assessments, now and going forward.

Additionally, as indicated in the MAB's first report, *National Security and the Threat of Climate Change*, published in 2007, "The U.S. should commit to global partnerships that help less developed nations build the capacity and resiliency to better manage climate impacts. As President Bush noted in his State of the Union speech, 'Our work in the world is also based on a timeless truth: To whom much is given, much is required.' Climate forecasts indicate countries least able to adapt to the consequences of climate change are those that will be the most affected. The U.S. government should use its many instruments of national influence, including its regional commanders, to assist nations at risk build the capacity and resiliency to better cope with the effects of climate change. Doing so now can help avert humanitarian disasters later."[2]

Question #3:
There is an abundance of evidence suggesting that the number of severe weather incidences is not as great as you claim it is. What evidence do you have that supports this claim? How do you respond to the scientific evidence against your claim?

Answer:

The MAB relies on a range of scientific analyses in making assessments as to the risk of climate change. I have included a few examples and references to the sources of scientific information that the MAB used in developing its security threat assessments.

The 2014 National Climate Assessment predicts that in the U.S. there will be "increasingly frequent and intense extreme heat, which causes heat-related illnesses and deaths and, over time, worsens drought and wildfire risks, and intensifies air pollution; increasingly frequent extreme precipitation and associated flooding that can lead to injuries and increases in marine and freshwater-borne disease; and rising sea levels that intensify coastal flooding and storm surge."[3]

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[2] CNA Military Advisory Board, National Security and the Threat of Climate Change (Alexandria, VA: CNA Corporation, 2007). P.7.

[3] Jerry M. Melillo, Terese (T.C.) Richmond, and Gary W. Yohe, eds., Climate Change Impacts in the United States: The Third National Climate Assessment (Washington, DC: U.S. Global Change Research Program, 2014), p.221, accessed 6 May 2014 at http://ncadac.globalchange. gov/.

The National Climate Assessment was produced by more than 300 experts and was peer-reviewed by a National Academy of Sciences independent expert panel. This Assessment summarizes the impacts of climate change on the United States, now and in the future.

Additionally, in 2013, the International Panel on Climate Change (IPCC) found that, because of climate changes, "many extreme weather and climate events have been observed since about 1950. It is very likely that the number of cold days and nights has decreased and the number of warm days and nights has increased on the global scale. It is likely that the frequency of heat waves has increased in large parts of Europe, Asia and Australia. There are likely more land regions where the number of heavy precipitation events has increased than where it has decreased. The frequency or intensity of heavy precipitation events has likely increased in North America and Europe."[4]

As stated in the most recent MAB report, "We recognize that skepticism is important in the scientific process, especially in the continual refinement of theories, and that healthy debate in the area of climate change can serve to advance science, but falling short of 100 percent agreement is not a justifiable reason for inaction."[5] The spectrum of differing scientific views on climate and weather needs to be viewed through a prism of risk management. As the MAB further notes in its report, "a military leader's perspective of risk often differs from those of scientists, policymakers, or the media. Rather than assessing a range of estimates as proof of disagreement that can be used to justify inaction, military leaders view such evidence through the lens of varying degrees of risk the estimates could represent. As military leaders, we evaluate the probability and possible consequences of events in determining overall risk. Even for those outcomes or projected scenarios that have low probabilities of occurrence, if the consequence is high enough, the resulting risk demands action. Today, the risks posed by predicted climate change, in our view, represent even graver potential than they did seven years ago and require action today to reduce risk tomorrow."[6]

Question #4:
As stated in your testimony, "nine of the ten costliest storms to hit the United States have occurred in the past 10 years, including Hurricane Katrina and Superstorm Sandy." Where is this statistic from? The National Weather Service National Hurricane Center has hurricanes from 1972, 1989, and 1992 in its list of the top 10 costliest storms.

Answer:

This statistic is from multiple sources including but not limited to:

Table 3a of a National Oceanic and Atmospheric Administration (NOAA) National Weather Service, National Hurricane Center, Technical Memorandum (NOAA Technical Memorandum NWS NHC-6)

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[4] IPCC, 2013: Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. P. 3.

[5] CNA Military Advisory Board, National Security and the Accelerating Risks of Climate Change (Alexandria, VA: CNA Corporation, 2014). P.7.

[6] CNA Military Advisory Board, National Security and the Accelerating Risks of Climate Change (Alexandria, VA: CNA Corporation, 2014). P.9.

indicates that from 1900 – 2010 the top ten storms occurred within the past ten years, except for Hurricane Andrew in 1992, and Tropical Storm Allison in 2001.[7] After adding Hurricane Sandy in 2012, the top ten costliest hurricanes all occurred in the past decade. From Table 3a of NOAA Technical Memorandum NWS NHC-6, the top costliest cyclones from 1900 – 2010 (excluding Sandy in 2012) are:

1	Katrina	2005	3	$108,000,000,000
2	Ike	2008	2	29,520,000,000
3	Andrew	1992	5	26,500,000,000
4	Wilma	2005	3	21,007,000,000
5	Ivan	2004	3	18,820,000,000
6	Charley	2004	4	15,113,000,000
7	Rita	2005	3	12,037,000,000
8	Frances	2004	2	9,507,000,000
9	Allison	2001	TS*	9,000,000,000
10	Jeanne	2004	3	7,660,000,000

*Allison was a tropical storm

Munich ReInsurance (Munich Re.) essentially lists the same hurricanes, and adds Hurricanes Sandy and Irene. Munich Re. does not include Allison. Munich Re. does not find Hurricane Jeanne to be one of the most costly from an insurance perspective. Munich Re. has the top ten costliest as:[8]

1	Katrina	2005	$125 billion
2	Sandy	2012	$65 billion
3	Ike	2008	$38 billion
4	Andrew	1992	$26.5 billion
5	Ivan	2004	$23 billion
6	Wilma	2005	$22 billion
7	Charley	2004	$18 billion
8	Rita	2005	$16 billion
9	Frances	2004	$12 billion
10	Irene	2011	$8.5 billion

Finally, NOAA's Hurricane Research Division lists the same ten hurricanes as the costliest, albeit in a different order than Munich Re. NOAA holds the ten top costliest mainland United States tropical cyclones from 1900-2013 as follows:[9]

1	Katrina	2005	$108 billion
2	Sandy	2012	$71 billion
3	Ike	2008	$29.5 billion
4	Andrew	1992	$26.5 billion
5	Wilma	2005	$20.6 billion

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[7] Blake, Eric S, and Landsea, Christopher W. The Deadliest and Costliest and Most Intense United States Tropical Cyclones from 1851 to 2010 (and other frequently requested hurricane facts). National Weather Service, National Hurricane Center, Miami, Florida. August 2011. Retrieved from http://www.nhc.noaa.gov/pdf/nws-nhc-6.pdf

[8] Munich Reinsurance, North America most affected by increase in weather-related natural catastrophes, 17 October 2012. Retrieved from http://www.munichre.com/en/media-relations/publications/press-releases/2012/2012-10-17-press-release/index.html.

[9] NOAA, Hurricane Research Division. The thirty costliest mainland United States tropical cyclones 1900-2013, retrieved from http://www.aoml.noaa.gov/hrd/tcfaq/costliesttable.html.

6	Irene	2011	$15.5 billion
7	Charley	2004	$15 billion
8	Ivan	2004	$14.2 billion
9	Rita	2005	$10 billion
10	Frances	2004	$8.9 billion

Questions for the Record
from
Senator Ron Wyden
for
Ms. Mindy Lubber, Mr. Alfredo Gomez, Ms. Sherri Goodman, Mr. David Montgomery,
Mr. Bjorn Lomborg
"The Costs of Inaction: The Economic and Budgetary Consequences of Climate Change"
Committee on the Budget
United States Senate
July 29, 2014

Questions to all witnesses:

1) The topic of this hearing is extremely timely; one of the effects of climate change increased severity and extent of wildfires - is continuing to hit my home state of Oregon at this very minute. Right now in Oregon, 7 separate fires are burning a swath across our state, with nearly 450,000 acres on fire right now. There's a similar story being played out across the American West. Over the past 30 years the fire season has become 2.5 months longer, and both the number and severity of forest fires in the American West have increased several-fold. The prevailing science says climate change is a major factor.

The fires are hotter and more severe, so they are costing more to fight and recover from, at a time when budgets are strapped for cash. I have a bill with Sen. Crapo to treat the largest one percent of fires, which eat up 30% of the fire budget, like the disasters they are and to pay for them out of the disaster budget. Paying for these infernos out of the disaster budget will help free up funds for wildfire prevention, but as temperatures rise, fires will keep getting worse, ultimately costing the government more money to fight.

Researchers have shown that more acres will burn in the future as a result of warmer temperatures. Can any of you translate those projections into economic terms and discuss how costs will grow in the future to fight these fires? Do those costs include economic damages to communities that depend on these forests?

Answer:

In its most recent report, *National Security and the Accelerating Risk of Climate Change*, CNA's Military Advisory Board (MAB) assesses that there will be an increased call for National Guard and active duty to respond to the increasing risk of wildfires in the U.S. While the MAB did not make an economic assessment of the costs associated with these additional deployments, they did assess that the increased use of the National Guard and active forces to respond to domestic events, such as wildfires or extreme weather, would lower the overall of readiness of the force to respond to foreign contingencies or conflicts because select units will be used domestically and will be unavailable to deploy overseas. The MAB also assessed that the increasing risks of wildfires constrain training, especially the use of the full spectrum of live training weapons and ammunition. These restrictions on training lower force readiness and/or make training more costly by requiring additional measures to lower such wildfire threats. The MAB did not further assess the specific economic impacts of these training restrictions nor other more specific future economic impacts.

2) The National Climate Assessment highlights another key concern in the Pacific Northwest; water availability. Warmer temperatures arrive earlier in the year now, and that means that the snow melts sooner than it used to. The dams aren't big enough to hold on to all of the early runoff until Summer, so there is less water available in the Summer for both power generation and for irrigation.

It costs money to build spare power generation capacity to make up the difference from the lost hydropower, and it costs farmers money when there isn't enough water for them to grow their crops. To each of the witnesses, have these damages, including projected effects on power rates and impacts on farmers from reduced irrigation, been quantified?

Answer: This question is beyond the scope of the CNA MAB report.

3) A number of analysts have pegged the current clean energy economy as being about a trillion dollars a year, and project that it will continue to grow until it is a multi-trillion dollar sector annually. By not taking actions here in the U.S. to move to a low-carbon, clean energy economy, the U.S. would seem to be missing the opportunity to play a leading role in that economy. Investment in manufacturing tends to cluster near locations where the technologies are put in place, and without U.S. demand, that manufacturing will move elsewhere. Innovation tends to follow manufacturing as well, so if the U.S. allows all other countries to lead in the clean energy space, a huge opportunity for, economic growth may be missed.

To each of the witnesses: Do you agree that clean, low-carbon energy represents a global growth industry for the future that offers the opportunity for the U.S to grow its GDP?

Answer:

The latest CNA Military Advisory Board (MAB) Report, *National Security and the Accelerating Risk of Climate Change*, states that "the U.S. should lead global efforts to develop sustainable and more efficient energy solutions to help slow climate change."[1]

In addition, a 2010 CNA MAB report, *Powering America's Economy: Energy Innovation at the Crossroads of National Security Challenges,* found that: "The clean, [low-carbon] energy technology revolution presents great challenges and great opportunities. Significantly altering fossil fuel consumption in the United States will require new approaches to the nation's current methods of producing, delivering, and using energy. It will require developing alternative sources of energy and greatly increasing energy efficiency; it will require the long-term commitment of the United States government and American citizens. However, the necessity and benefits of the transition are compelling. Not only will overall national security improve, but so will the foundation upon which it rests: economic security. The sheer scale of the needed changes represents an enormous economic opportunity. Other countries (notably China, Spain, Germany, and the United Arab Emirates) have already recognized these economic benefits and are taking aggressive action to ensure the clean energy technology opportunity is not missed; the United States must seize the moment and lead."[2]

4) Which U.S. regions or states are likely to be most severely impacted economically by the impacts of climate change? Can any of you provide estimates of the level of these impacts in monetary terms? To what extent does the relative preparedness of U.S. regions reflect the level of risk facing them? What are the federal budget implications of the regional disparity in climate risk and preparedness?

Answer: This question is beyond the scope of the CNA MAB report.

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[1] CNA Military Advisory Board, National Security and the Threat of Climate Change (Alexandria, VA: CNA Corporation, 2007). P.7.

[2] CNA Military Advisory Board, Powering America's Economy: Energy Innovation at the Crossroads of National Security Challenges (Alexandria, VA: CNA Corporation, 2010). P.4.

Questions for the Record
From Senator Jeff Sessions

Question #1

In your testimony you advocate that the increases in electricity prices that result from the use of renewable energies as a way to slow global warming are not substantial. In 2008 however, President Obama stated that under his climate change plan "electricity rates would necessarily skyrocket." In states such as Colorado and California, electricity prices have risen extensively since the implementation of state renewable energy mandates. Would you say that the burden of these prices increases falls more on the lower and middle class or on the wealthy?

I am not familiar with the quote mentioned, but a review of Energy Information Administration data over the past decade indicate that residential electricity prices have been relatively flat, when adjusted for inflation – including in states like Colorado and California. Many states, like Colorado, have included price caps to ensure that prices can only rise modest amounts, such as 2 percent per year, and a recent National Renewable Energy Lab study estimates that state renewable electricity standards have only added about 1 percent to electricity costs across the country. And the price of renewable energy continues to decline at a rapid pace, making it more and more cost-competitive with fossil generation. Just as with other basic necessities, any price increases can fall more on lower and middle incomes, which is why it is critical to offer appropriate assistance to those lower incomes, such as targeted energy efficiency programs that enable customers to reduce energy usage and costs.

Question #2

In your testimony you quote a Ceres study that shows how "hydraulic fracturing is increasing competitive pressures for water in some of the country's most water-stressed and drought-ridden regions." Yet, as Mr. Lomborg pointed out, hydraulic fracturing lowers carbon dioxide production, which is helpful in mitigating the effects of climate change. What would you suggest be done to alleviate the competitive pressures for water while maintaining hydraulic fracturing's advantageous effect of lowering carbon dioxide production?

The health and abundance of local water resources is a deeply sensitive issue to local communities and economies that rely on these resources to continue to thrive into the future.

Shale gas and oil development, using hydraulic fracturing and horizontal drilling is a new model for extracting oil or gas which often involves industrial development and water use in the heart of communities with no or little history of energy development. There are a host of legitimate concerns around protecting water resources, but by focusing specifically on water use at this point, much can be done to mitigate these concerns:

1) *Water recycling rates can be increased through incentives and by mandating 100% recycling in regions experiencing prolonged drought or regional water resource depletion. In many regions water recycling is in the single digits, including in some arid regions of Texas.*[1] *In many cases, especially when there is more proactive or collaborative planning, higher regional recycling rates can actually make economic sense in terms of lower trucking and water acquisition costs and higher operational efficiencies.*[2,3] *As flowback water can be heavily contaminated, recycling this water must be done in a responsible manner to protect workers and the environment. However, even 100% recycling rates will never alleviate the need to add more water to frack new wells because often only a portion of water injected into a well comes back up.*
2) *Requiring 100% recycling has the added benefit of decreasing reliance on eliminating wastewater in deep well injection sites. Not only do these wastewater injection sites eliminate water for anyone else's use, but they also are often poorly controlled. They are seen as a potential source of groundwater contamination.*[4] *Several conclusive scientific studies have linked wastewater injection wells to an increase in earthquakes in many regions of the US*[5] [6] *raising further concerns about these sites.*
3) *The use of freshwater for hydraulic fracturing should be seen as the last resort after all other sources have been exhausted, such as unwanted wastewater streams, water produced from long-producing oil and gas wells, and seawater.*
4) *Shale energy developers should be required to disclose where their water is currently being sourced and from where they expect to source it in the coming years. Ceres found in its study that, although water use for hydraulic fracturing is often less than 2-3% of overall state water use, the local water demands for hydraulic fracturing can be even larger than the demand for water used by all other end users of water in a county. This intense localized demand for water can put an incredible strain on local communities, water managers, and other water users in a region. Greater disclosure would allow for more proactive water resource planning and protection.*
5) *Greater disclosure and management of groundwater use for hydraulic fracturing is of particular concern because in many regions the industry is exempt from reporting its water use, or there are few if any groundwater extraction controls.*

We would also point out that the degree to which hydraulic fracturing has positive benefits for the climate will depend significantly on how well the industry manages methane leakage. Methane is a highly potent greenhouse gas - at least 84 times more powerful than carbon dioxide over a 20-year time period.[7] *About 30 percent of the warming we will experience over the next*

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[1] JP Nicot, et al. Oil & Gas Water Use in Texas: Update to the 2011 Mining Water Use Report, Bureau of Economic Geology, The University of Texas at Austin, September 2012

[2] Pam Boschee, Produced and Flowback Water Recycling and Reuse, Economics, Limitations and Technology, Halliburton, http://www.halliburton.com/public/multichem/contents/Papers_and_Articles/web/Feb-2014-Oil-Gas-Facilities-Article.pdf

[3] Christopher Robart, "Water Management Economics in the Development and Production of Shale Resources," International Association for Energy
Economics, First Quarter 2012.

[4] US Government Accountability Office, Drinking Water: EPA Program to Protect Underground Sources for Injection of Fluids Associated with Oil and Gas Production Needs Improvement, GAO-14-555: Published: Jun 27, 2014. Publicly Released: Jul 28, 2014.http://www.gao.gov/products/GAO-14-555

[5] USGS and Oklahoma Geological Survey, "Earthquake Swarm Continues in Central Oklahoma," October 2, 2013.

[6] National Research Council. *Induced Seismicity Potential in Energy Technologies*. Washington, DC: The National Academies Press, 2013.

[7] IPCC, Climate Change 2013: The Physical Science Basis, Fifth Assessment Report, Chapter 8 (Table 8.A.1)

two decades as a result of this year's greenhouse gas emissions will come from methane. Oil and gas is the largest industrial source of methane emissions in the U.S., and recent studies have concluded that methane emissions from the U.S. natural gas supply chain are nearly double the official estimates.[8] *In short, carbon dioxide and methane emissions pose imminent risk to the climate and in turn to economic stability and investment opportunities – meaning that actions are urgently needed to reduce both pollutants. As market forces and the Clean Power Plan position natural gas as a low-greenhouse gas alternative to coal, it is all the more critical for regulation to address methane emissions so natural gas can live up to its climate potential. As a result, Ceres is strongly supportive of proposed efforts by EPA and BLM to take aggressive steps to address all major sources of methane emissions in the oil and gas industry.*

Question #3

Duplicate of question #1.

Question #4

According to a Yale Climate Connections study published in May 29, 2013, our country's share of the global carbon dioxide emissions is only 16 percent. Even with the lowered levels of carbon emissions in Russia, the European Union, and Japan, is it possible for the US to pursue a balanced budget that places our country on a sustainability debt path while significantly decreasing the level of global emissions given the extremely high levels of carbon dioxide emissions in countries such as China and India?

Continuing to ignore climate change's mounting toll will make it more difficult to pursue a balanced budget. Climate change impacts (i.e. more pronounced extreme weather) are already hitting American taxpayers hard, and draining government budgets. As stated in my testimony, extreme weather events in 2012 alone cost every American more than $300 apiece, or $110 billion altogether – most of which goes to pay for federal crop, flood, wildfire and disaster relief. Numerous studies[9] [10]*show that these costs will continue to spiral upwards the longer we delay reducing carbon emissions. The bipartisan Risky Business report*[11] *estimates that, in the next 15 years, coastal storms and hurricanes will cost $35 billion annually – and by 2050, between $66 billion and $106 billion worth of existing coastal property will be below sea level nationwide. These cost estimates are not based on the full suite of climate change's impacts and thus underestimate the true costs.*

While it is not clear what the question means by "sustainability debt path", it is worth noting that many U.S. companies, such as Ford, Walmart, Coca Cola, Caterpillar and Dow Chemical, embrace sustainability because it saves them money. In fact, research shows that a commitment to sustainability can boost a company's bottom line.[12]

8 Brandt, A. R., et al., "Methane Leaks from North American Natural Gas Systems," Science Magazine (February 2014)

9 Kemfert, C. "Global Climate Protection – Immediate Action Will Avert High Costs," German Institute for Economic Research (2005)

10 Dietz, S. and Stern N., Endogenous growth, convexity of damages and climate risk: how Nordhaus' framework supports deep cuts in carbon emissions" Grantham Research Institute on Climate Change and the Environment (June 2014)

11 Houser, T. et al. American Climate Prospectus: Economic Risks in the United States, Rhodium Group (June 2014)

12 Haanaes, K. "Making Sustainability Profitable," Harvard Business Review (March 2013).

Regarding the United States' ability to impact global carbon emissions, the best way for us to move other countries to reduce their emissions is to act ourselves. For more than a decade climate negotiators from many countries including China and India have cited America's inaction on climate change as a major reason why they were not curbing their own emissions. As the world's largest economy, America is expected to lead.

Once we take meaningful steps to reduce our emissions, nations like China and India will find it more difficult not to cut theirs. Even if these nations continue to resist curbing their own carbon emissions, the U.S. could impose a carbon tariff on their exports. The World Trade Organization would likely declare that carbon limits are effectively a tax on consumers,[13] which can be levied on imports as well as domestic production. Such a move would incentivize countries like China to limit their emissions. Moreover, China's economy is very dependent on access to advanced-country markets, and its leaders understand that refusing to cooperate on climate change would put its exports at risk. In fact, China has already begun experimenting with carbon cap-and-trade schemes in some of its provinces.

Question #5

A Yale Climate Connections study published on July 2, 2013 reports that since 1990, China and India have increased their carbon dioxide emissions by 280 percent and 230 percent respectively. These increases have dwarfed our country's recent emission reduction, 12 percent between 2009 and 2013, which has brought US's carbon dioxide emissions to 1996 levels (an overall increase from 1990 of about six percent). How do you propose that we effectively reduce the consequences of climate change when any action we take will be more than offset by the emissions of other countries, namely China, India and various developing economies?

See answer to Question #4

Question #6

There is an abundance of evidence suggesting that the number of severe weather increases in not as great as you claim it is. What evidence do you have to support this claim? How do you respond to the scientific evidence against your claim?

In response to the question about the increase in the number of severe weather events that can be (at least in part) attributed to climate change, one source to consult is the natural catastrophe figures that are regularly published by global reinsurer Munich Re. For the first half of 2014 (January-June), the total number of natural catastrophe events globally was 490, which

[13] Pauwelyn, J. "Carbon Leakage Measures and Border Tax Adjustments Under WTO Law" Graduate Institute of International and Development Studies (March 2012)

compares to a 10-year average (2004-2013) of 410 for the first six months of the year and a 30-year average of 315.[14] *Although these figures include non-weather related geophysical events (earthquake, tsunami, volcanic activity), the historical record shows that geophysical event counts have remained fairly steady year-over-year in the past 30 years. Therefore, purely in terms of counting the number of weather-related catastrophe events, one can discern a marked increase over both a 10-year and a 30-year timeframe.*

In terms of tangible severe weather increases in the U.S., however, the Third National Climate Assessment (NCA3) from the U.S. Global Change Research Program[15] *highlights some stark trends across the country. In* Section 2: Our Changing Climate, *NCA3 notes "Since 1991, the amount of rain falling in very heavy precipitation events has been significantly above average. This increase has been greatest in the Northeast, Midwest, and upper Great Plains – more than 30% above the 1901-1960 average... There has also been an increase in flooding events in the Midwest and Northeast where the largest increases in heavy rain amounts have occurred."*[16] *NCA3 quantifies the increase in the incidence of very high precipitation events across the continental U.S. from 1958-2012 – which are defined as the heaviest 1% of all daily events – as a 5% increase in the Southwest, 27% in the Southeast, and 71% in the Northeast region.*[17] *Moreover, as the NCA3 indicates, "extreme precipitation events are often associated with local flash floods, a leading cause of death due to weather events."*[18]

At the opposite end of the meteorological scale, however, NCA3 notes: "Tree ring data suggests that the drought over the last decade in the western U.S. represents the driest conditions in 800 years...In some areas, prolonged periods of record high temperatures associated with droughts contribute to dry conditions that are driving wildfires."[19] *Expanding on the propensity for future extreme drought conditions, the NCA3 indicates: "Higher temperatures lead to increased rates of evaporation, including more loss of moisture through plant leaves. Even in areas where precipitation does not decrease, these increases in surface evaporation and loss of water from plants lead to more rapid drying of soils if the effects of higher temperatures are not offset by other changes (such as in wind speed or humidity). As soil dries out, a larger proportion of the incoming heat from the sun goes into heating the soil and adjacent air rather than evaporating its moisture, resulting in hotter summers under drier climatic conditions."*[20]

NCA3 identifies that the sea level has risen at least eight inches since 1880, and that "Since 1992, the rate of global sea level rise measured by satellites has been roughly twice the rate observed over the last century, providing evidence of additional acceleration."[21] *Sea level rise could affect many U.S. residents, as "Nearly 5 million people in the U.S. live within 4 feet of the*

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[14] Munich Re NatCatSERVICE, *Natural Catastrophes in the First Half of 2014*: http://www.munichre.com/site/corporate/get/documents_E-1668391360/mr/assetpool.shared/Documents/0_Corporate%20Website/6_Media%20Relations/Press%20Releases/2014/Munich-Re-Natural-catastrophes-first-half-year-2014.pdf

[15] Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014: *Climate Change Impacts in the United States: The Third National Climate Assessment*. U.S. Global Change Research Program, 841 pp. doi:10.7930/J0Z31WJ2.

[16] Ibid. pp 36.

[17] Ibid. pp 37.

[18] Ibid. pp 40.

[19] Ibid. pp 38.

[20] Ibid. pp 40.

[21] Ibid. pp 44.

local high-tide level (also known as mean higher high water). In the next several decades, storm surges and high tides could combine with sea level rise and land subsidence to further increase flooding in many of these regions."[22] *Thus, severe weather events on the coasts, particularly hurricanes and thunderstorms, could result in increasingly damaging storm surges and flooding as a result of a higher sea level. A July 2014 report from CoreLogic, a global property information and analytics provider, identified more than 6.5 million U.S. homes at risk of hurricane storm surge damage, with a total reconstruction value of nearly $1.5 trillion,*[23] *so these risks are far from trivial.*

Thus, there is a range of severe weather-related risk factors that are affecting disparate regions of the country differently, and the science underpinning society's understanding of those risks and opportunities is continuously advancing.

[22] Ibid. pp 45.
[23] CoreLogic, *2014 Storm Surge Report*. Report available for download here: http://www.corelogic.com/about-us/news/2014-corelogic-storm-surge-analysis.aspx.

GAO U.S. GOVERNMENT ACCOUNTABILITY OFFICE

441 G St. N.W.
Washington, DC 20548

September 15, 2014

The Honorable Patty Murray
Chairman
Committee on the Budget
United States Senate

Attention: Kusai Merchant

Dear Madam Chairman:

Enclosed is our response to the questions you submitted for the record regarding our July 29, 2014, testimony entitled *Budget Issues: Opportunities to Reduce Federal Fiscal Exposures Through Greater Resilience to Climate Change and Extreme Weather* (GAO-14-504T). If you should have any questions, please contact me on 202-512-3841 or gomezj@gao.gov or my Assistant Director, Mike Hix, on 202-512-6497 or hixm@gao.gov.

Sincerely yours,

Alfredo Gomez

J. Alfredo Gomez
Director, Natural Resources and Environment

Enclosure

GAO U.S. GOVERNMENT ACCOUNTABILITY OFFICE

441 G St. N.W.
Washington, DC 20548

September 15, 2014

The Honorable Jeff Sessions
Ranking Member
Committee on the Budget
United States Senate

Attention: Kusai Merchant

Dear Mr. Ranking Member:

Enclosed is our response to the questions you submitted for the record regarding our July 29, 2014, testimony entitled *Budget Issues: Opportunities to Reduce Federal Fiscal Exposures Through Greater Resilience to Climate Change and Extreme Weather* (GAO-14-504T). If you should have any questions, please contact me on 202-512-3841 or gomezj@gao.gov or my Assistant Director, Mike Hix, on 202-512-6497 or hixm@gao.gov.

Sincerely yours,

Alfredo Gómez

J. Alfredo Gomez
Director, Natural Resources and Environment

Enclosure

RESPONSE TO QUESTIONS FOR THE RECORD
FOR ALFREDO GOMEZ
U.S. GOVERNMENT ACCOUNTABILITY OFFICE
SUBMITTED FROM CHAIRMAN MURRAY

HEARING ON
THE COSTS OF INACTION: THE ECONOMIC AND BUDGETARY CONSEQUENCES OF CLIMATE CHANGE
SENATE COMMITTEE ON THE BUDGET

July 29, 2014

Black Text = Questions for the Record

Text in Boxes = GAO's Response

Blue Text = Hyperlinks to Cited Reports

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1. From your testimony, it's clear that we need to incorporate climate adaptation strategies into all of the work we do here in Congress, whether it's to protect our nation's roads, bridges, and waterways or to ensure our military installations remain viable.

   The Washington State Department of Transportation—under a pilot program funded by the Federal Highway Administration—assessed its climate vulnerability and is incorporating this data into its planning, design, and construction of new or adaptation of old transportation infrastructure.

   It won't be cheap, but it will certainly be less expensive than having to respond after disaster strikes.

   But as carbon pollution levels continue to rise, the damage from climate change impacts will become more expensive, even as we make our infrastructure more resilient to climate impacts.

   - Would it be fair to say that reducing emissions will help avoid the most severe impacts of climate change, and therefore lessen the need for costly adaptation measures?

In February 2013, GAO added *Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks* to its list of high-risk areas. In this designation, GAO states that, according to National Research Council (NRC) and the United States Global Change Research Program (USGCRP), the nation can reduce its vulnerability by limiting the magnitude of climate change through actions to limit greenhouse gas emissions. GAO recognizes that (1) the federal government has a number of efforts underway to decrease domestic greenhouse gas emissions and (2) the success of greenhouse gas emissions reduction efforts depends in large part on cooperative international efforts. However, limiting the federal government's fiscal exposure to climate change risks will present a challenge no matter the outcome of domestic and international efforts to reduce emissions, in part because greenhouse gases already in the atmosphere will continue altering the climate system for many decades, according to NRC and USGCRP.

RESPONSE TO QUESTIONS FOR THE RECORD
FOR ALFREDO GOMEZ
U.S. GOVERNMENT ACCOUNTABILITY OFFICE
SUBMITTED FROM RANKING MEMBER SESSIONS

HEARING ON
THE COSTS OF INACTION: THE ECONOMIC AND BUDGETARY CONSEQUENCES OF CLIMATE CHANGE
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1. According to a Yale Climate Connections study published in May 29, 2013, our country's share of the global carbon dioxide emissions is only 16 percent. Even with the lowered levels of carbon emissions in Russia, the European Union, and Japan, is it possible for the US to pursue a balanced budget that places our country on a sustainable debt path while significantly decreasing the level of global emissions given the extremely high levels of carbon dioxide emissions in countries such as China and India?

GAO has not analyzed this type of scenario.

2. A Yale Climate Connections study published on July 2, 2013 reports that since 1990, China and India have increased their carbon dioxide emissions by 280 and 230 percent, respectively. These increases have dwarfed our country's recent emission reduction, 12 percent between 2009 and 2013, which has brought the US's carbon dioxide emissions to 1996 levels (an overall increase from 1990 of about six percent). How do you propose that we effectively reduce the consequences of climate change when any action we take will be more than offset by the emissions of other countries, namely China, India, and various developing economies?

In February 2013, GAO added *Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks* to its list of high-risk areas. In this document GAO states that, according to National Research Council (NRC) and the United States Global Change Research Program (USGCRP), the nation can reduce its vulnerability by limiting the magnitude of climate change through actions to limit greenhouse gas emissions. GAO recognizes that (1) the federal government has a number of efforts underway to decrease domestic greenhouse gas emissions and (2) the success of greenhouse gas emissions reduction efforts depends in large part on cooperative international efforts. However, limiting the federal government's fiscal exposure to climate change risks will present a challenge no matter the outcome of domestic and international efforts to reduce emissions, in part because greenhouse gases already in the atmosphere will continue altering the climate system for many decades, according to NRC and USGCRP.

3. There is an abundance of evidence suggesting that the number of severe weather incidences is not as great as you claim it is. What evidence do you have that supports this claim? How do you respond to the scientific evidence against your claim?

For information on climate change and severe weather, GAO relies on assessments from the National Academies and the United States Global Change Research Program (USGCRP), a 13 agency coordinating body. See, for example, a February 2014 report by the U.S. National Academy of Sciences titled *Climate Change: Evidence and Causes* and USGCRP's May 2014 *National Climate Assessment*.

GAO U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

September 15, 2014

The Honorable Ron Wyden
Committee on the Budget
United States Senate

Attention: Kusai Merchant

Dear Mr. Wyden:

Enclosed is our response to the questions you submitted for the record regarding our July 29, 2014, testimony entitled *Budget Issues: Opportunities to Reduce Federal Fiscal Exposures Through Greater Resilience to Climate Change and Extreme Weather* (GAO-14-504T). If you should have any questions, please contact me on 202-512-3841 or gomezj@gao.gov or my Assistant Director, Mike Hix, on 202-512-6497 or hixm@gao.gov.

Sincerely yours,

Alfredo Gomez

J. Alfredo Gomez
Director, Natural Resources and Environment

Enclosure

RESPONSE TO QUESTIONS FOR THE RECORD
FOR ALFREDO GOMEZ
U.S. GOVERNMENT ACCOUNTABILITY OFFICE
SUBMITTED FROM SENATOR WYDEN

HEARING ON
THE COSTS OF INACTION: THE ECONOMIC AND BUDGETARY CONSEQUENCES OF CLIMATE CHANGE
SENATE COMMITTEE ON THE BUDGET

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1. The topic of this hearing is extremely timely; one of the effects of climate change—increased severity and extent of wildfires—is continuing to hit my home state of Oregon at this very minute. Right now in Oregon, 7 separate fires are burning a swath across our state, with nearly 450,000 acres on fire right now. There's a similar story being played out across the American West. Over the past 30 years the fire season has become 2.5 months longer, and both the number and severity of forest fires in the American West have increased several-fold. The prevailing science says climate change is a major factor.

   The fires are hotter and more severe, so they are costing more to fight and recover from, at a time when budgets are strapped for cash. I have a bill with Sen. Crapo to treat the largest one percent of fires, which eat up 30% of the fire budget, like the disasters they are and to pay for them out of the disaster budget. Paying for these infernos out of the disaster budget will help free up funds for wildfire prevention, but as temperatures rise, fires will keep getting worse, ultimately costing the government more money to fight.

   Researchers have shown that more acres will burn in the future as a result of warmer temperatures. Can any of you translate those projections into economic terms and discuss how costs will grow in the future to fight these fires? Do these costs include economic damages to communities that depend on these forests?

GAO has not projected the effects of climate change on wildland fire costs, but has reported on observed changes in these costs over time. As reported on GAO's wildland fire management key issue website and in a 2014 Congressional Research Service Report titled *Wildfire Management: Federal Funding and Related Statistics*, appropriations for the federal government's wildland fire management activities have tripled, averaging over $3 billion annually in recent years, up from about $1 billion in fiscal year 1999.

2. The National Climate Assessment highlights another key concern in the Pacific Northwest; water availability. Warmer temperatures arrive earlier in the year now, and that means that the snow melts sooner than it used to. The dams aren't big enough to hold on to all of the early runoff until Summer, so there is less water available in the Summer for both power generation and for irrigation.

   It costs money to build spare power generation capacity to make up the difference from the lost hydropower, and it costs farmers money when there isn't enough water for them to grow their crops. To each of the witnesses, have these damages, including projected effects on power rates and impacts on farmers from reduced irrigation, been quantified?

GAO has not quantified the projected effects of climate change on power rates or the impacts on farmers from reduced irrigation. However, GAO has reported on federal efforts to make water infrastructure more resilient in November 2013. This report, titled *Climate Change: Federal Efforts Under Way to Assess Water Infrastructure Vulnerabilities and Address Adaptation Challenges* shows the efforts of the U.S. Army Corps of Engineers and Department of the Interior's Bureau of Reclamation to study the impacts of climate change on federally owned and operated canals, dams, and reservoirs—key elements of water supply and irrigation systems in the West—and adapt this infrastructure to observed and projected changes.

3. A number of analysts have pegged the current clean energy economy as being about a trillion dollars a year, and project that it will continue to grow until it is a multi-trillion dollar sector annually. By not taking actions here in the U.S. to move to a low-carbon, clean energy economy, the U.S. would seem to be missing the opportunity to play a leading role in that economy. Investment in manufacturing tends to cluster near locations where the technologies are put in place, and without U.S. demand, that manufacturing will move elsewhere. Innovation tends to follow manufacturing as well, so if the U.S. allows other countries to lead in the clean energy space, a huge opportunity for economic growth may be missed.

   To each of the witnesses: Do you agree that clean, low-carbon energy represents a global growth industry for the future that offers the opportunity for the U.S. to grow its GDP?

GAO has not analyzed the GDP impact of low-carbon energy technologies.

4. Which U.S. regions or states are likely to be most severely impacted economically by the impacts of climate change? Can any of you provide estimates of the level of these impacts in monetary terms? To what extent does the relative preparedness of U.S. regions reflect the level of risk facing them? What are the federal budget implications of the regional disparity in climate risk and preparedness?

GAO has not analyzed observed and projected regional changes in the climate or any resulting economic impacts. GAO relies on assessments from the National Academies and the United States Global Change Research Program (USGCRP) for information on climate change. USGCRP's May 2014 National Climate Assessment has detailed information on climate change impacts by region.

Dear Senator Wyden.

Thanks for your questions. As you may know, I'm right now heavily involved in helping the UN post-2015 process to find the smartest priorities (see www.post2015consensus.com) publishing thousands of peer reviewed pages over the next four months. Unfortunately, I have little to contribute for most of your questions, and hope that some of my fellow presenters have more modeling knowledge of your specific questions.

1) **The topic of this hearing is extremely timely; one of the effects of climate change – increased severity and extent of wildfires – is continuing to hit my home state of Oregon at this very minute. Right now in Oregon, 7 separate fires are burning a swath across our state, with nearly 450,000 acres on fire right now. There's a similar story being played out across the American West. Over the past 30 years the fire season has become 2.5 months longer, and both the number and severity of forest fires in the American West have increased several-fold. The prevailing science says climate change is a major factor.**

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Unfortunately, I do not know of any good fire-fighting models. However, I would caution the direct link between global warming and fire in the American West, since more or less fire depends more on more or less precipitation (DOI: 10.1111/geb.12065) while most of the temperature changes in the American West are probably not yet caused by global warming (www.pnas.org/cgi/doi/10.1073/pnas.1318371111).

The National Climate Assessment highlights another key concern in the Pacific Northwest; water availability. Warmer temperatures arrive earlier in the year now, and that means that the snow melts sooner than it used to. The dams aren't big enough to hold on to all of the early runoff until Summer, so there is less water available in the Summer for both power generation and for irrigation.

It costs money to build spare power generation capacity to make up the difference from the lost hydropower, and it costs farmers money when there isn't enough water for them to grow their crops. To each of the witnesses, have these damages, including projected effects on power rates and impacts on farmers from reduced irrigation, been quantified?

I do not know of such estimates of damages.

A number of analysts have pegged the current clean energy economy as being about a trillion dollars a year, and project that it will continue to grow until it is a multi-trillion dollar sector annually. By not taking actions here in the U.S. to move to a low-carbon, clean energy economy, the U.S. would seem to be missing the opportunity to play a leading role in that economy. Investment in manufacturing tends to cluster near locations where the technologies are put in place, and without U.S. demand, that manufacturing will move elsewhere. Innovation tends to follow manufacturing as well, so if the U.S. allows all other countries to lead in the clean energy space, a huge opportunity for economic growth may be missed.

To each of the witnesses: Do you agree that clean, low-carbon energy represents a global growth industry for the future that offers the opportunity for the U.S to grow its GDP?

I am sorry to disagree with your argument. Remember, while the IEA estimate that the world will invest $6.2 trillion in renewables 2013-2035 in its green scenario, it will also require $4.7 trillion in subsidies. As renewables also produce less valuable electricity (non-dispatchable) and as raising the funding for subsidies require further distortions throughout the economy, it is very likely the net effect will be negative. As I pointed out in my presentation, it is very likely that any realistic climate policy will have a net cost, even when taking into considerations the benefits of lower climate damages and renewable manufacturing, as you comment in your question.

Which U.S. regions or states are likely to be most severely impacted economically by the impacts of climate change? Can any of you provide estimates of the level of these impacts in monetary terms? To what extent does the relative preparedness of U.S. regions reflect the level of risk facing them? What are the federal budget implications of the regional disparity in climate risk and preparedness?

I do not know overarching climate costs models specified on state level.

Responses from W. David Montgomery, Ph.D. to questions for the record from Senator Ron Wyden following Senate Budget Committee hearing on July 29, 2014 on "The Costs of Inaction."

Question 1: Forest fires

Answer to Question 1: I disagree with the premise of the Senator's question, that "The prevailing science is a major factor" in the growth and severity of forest fires. Weather unquestionably plays a role in forest fires, but the IPCC Fifth Assessment Report itself places "low confidence" in any connection between climate change and current events such as forest fires or storms. As in the case of flooding, the increase in economic damage from forest fires is mostly attributable to the increase in building and development in areas subject to fire hazards. Moreover, even modelling of changes in future rainfall patterns assumed in the models to be caused by climate change does not show a uniform increase of hazards. Some regions will experience more rainfall, some will experience less so that like other risks of climate change, there is little basis for accurate predictions of effects of climate change on wildfires or on wildfire risks. There is a substantial body of public finance literature, on the other hand, that points to the moral hazard created by expenditures of public funds for fire suppression, insurance and disaster relief. These policies insulate property owners from fire risks and lead to more development in hazard areas than is economically justified. More rational development would, on this reasoning, be a more cost-effective response increased hazards than additional capability for firefighting and would, like other adaptive changes, lessen whatever risks climate change poses in this area.

Question 2: Water availability

Answer to Question 2: The government failure of providing subsidized water to farmers in California makes the value in use of water in agriculture already far less than its opportunity cost for power generation or municipal uses. The effects of lower summer water availability on power costs and the net cost of water supply could be greatly reduced by instituting an effective market for water in which farmers face the same price for water as other users, and would thus be motivated to conserve water if the operate in regions subject to these stresses. Such a market would also lead to more cost-effective adaptation to climate change by shifting agricultural production to regions where agriculture benefits from climate change and away from regions where agriculture is harmed. Studies that I have read of U.S. agriculture with climate change indicates that with such adaptation there is likely to be little or no adverse impact on U.S. agriculture from climate change, and a strong possibility of net benefits.

Question 3: Clean energy economy

Answer to Question 3: Despite decades of subsidies for clean energy, none of the outcomes for economic growth in the Senator's question have been observed. Germany and Denmark gave large subsidies for wind and solar energy and found themselves importing most of the equipment from China and other Asian countries. The same has been true in the U.S. The experience of Solyndra and electric car manufacturers who failed even with Federal loan guarantees also shows the failure of clean energy policies to create global growth industries.

Instead, the growth in jobs and economic activity in the U.S. over the past decade has largely come in the oil and gas industry, where private investment in developing and deploying technologies for horizontal drilling and multistage fracturing has led to higher production, potential for improving the US trade picture by means of exports, and dramatically lower costs for consumers and manufacturing industries, in particular chemicals and allied products. Thus we already have a global growth industry, and we did not achieve it through subsidies to exotic forms of energy. What is needed to let the U.S. oil and gas sector achieve its full potential as a global growth industry is to remove all controls on exports, so that it can have the same opportunities for growth and expanded markets that the Senator believes we are missing for "clean energy."

Question 4: Regional economic impacts of climate change

Answer to Question 4: The state of modelling of the effects of climate change on human populations and economic activity in wealthy countries does not permit reliable forecasts of impacts at the state or regional level. Even in terms of broad variables like rainfall, the models differ substantially, and connecting these broad effects to specific economic harm at such a level is beyond their capabilities. Nor do I believe there is an objective assessment of the relative preparedness of different regions in light of the risks they face that is not tainted by efforts to attract public funds or promote hysteria about the minimal current damage from climate change. In a similar vein, public choice theory suggests that regions that now attract the largest Federal subsidies in the form of flood insurance, disaster and reconstruction relief, and below-market costs of water would be the least well prepared, whereas regions that are obtaining Federal construction funds for flood control and other structures may be over-investing in protection.