THE CHANGING NATURE OF THE ECONOMY: THE CRITICAL ROLES OF EDUCATION AND INNOVATION IN CREATING JOBS & OPPORTUNITY IN A KNOWLEDGE ECONOMY

HEARING

BEFORE THE

COMMITTEE ON EDUCATION AND THE WORKFORCE U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

March 11, 2004

Serial No. 108-47

Printed for the use of the Committee on Education and the Workforce

Available via the World Wide Web: http://www.access.gpo.gov/congress/house
or
Committee address: http://edworkforce.house.gov

U.S. GOVERNMENT PRINTING OFFICE

92-479 PDF WASHINGTON : 2004

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2250 Mail: Stop SSOP, Washington, DC 20402–0001

C O N T E N T S

THE CHANGING NATURE OF THE ECONOMY: THE CRITICAL ROLES OF EDUCATION AND INNOVATION IN CREATING JOBS & OPPORTUNITY IN A KNOWLEDGE ECONOMY

Thursday, March 11, 2004
U.S. House of Representatives
Committee on Education and the Workforce
Washington, DC

The Committee met, pursuant to notice, at 10:01 a.m., in room 2175, Rayburn House Office Building, Hon. John Boehner (Chairman of the Committee) presiding.

Present: Representatives Boehner, Petri, McKeon, Castle, Ehlers, DeMint, Isakson, Biggert, Platts, Tiberi, Keller, Osborne, Wilson, Cole, Kline, Musgrave, Blackburn, Gingrey, Burns, Miller, Kildee, Owens, Payne, Andrews, Woolsey, McCarthy, Tierney, Kind, Kucinich, Wu, Holt, S. Davis, McCollum, Grijalva, Majette, Van Hollen, Ryan, and Bishop.

Staff present: George Canty, Counselor to the Chairman; Kevin Frank, Professional Staff Member; Ed Gilroy, Director of Workforce Policy; Donald McIntosh, Staff Assistant; Greg Maurer, Coalitions Director for Workforce Policy; Stephanie Milburn, Professional Staff Member; Jim Paretti, Professional Staff Member; Alanna Porter, Executive Assistant; Molly Salmi, Deputy Director of Workforce Policy; Deborah L. Samantar, Committee Clerk/Intern Coordinator; Dave Schnittger, Communications Director; Kevin Smith, Senior Communications Counselor; Jo-Marie St. Martin, General Counsel; Linda Stevens, Chief Clerk/Assistant to the General Counsel; Loren Sweatt, Professional Staff Member; Ellynne Bannon, Minority Legislative Associate/Education; Jody Calemine, Minority Counsel, Employer-Employee Relations; Tylease Fitzgerald, Minority Staff Assistant; Margo Hennigan, Minority Legislative Assistant/Labor, Cheryl Johnson, Minority Counsel; Tom Kiley, Minority Press Secretary; John Lawrence, Minority Staff Director; Alex Nock, Minority Legislative Associate/Education; Peter Rutledge, Minority Senior Legislative Associate/Labor; Lynda Theil, Minority Legislative Associate/Education; Michele Varnhagen, Minority Labor Counsel/Coordinator; and Mark Zuckerman, Minority General Counsel.

Chairman BOEHNER. The Full Committee for Education and the Workforce will come to order.

We are meeting today to hear testimony on "The Changing Nature of Our Economy: The Critical Roles of Education and Innovation in Creating Jobs and Opportunity in a Knowledge Economy." Under the Committee rules, opening statements are limited to the Chairman and Ranking Member. And so with that, I'd ask unanimous consent for the Members who have written statements and other extraneous material referenced during the hearing today to be submitted for the official record. Without objection, so ordered.

STATEMENT OF HON. JOHN A. BOEHNER, CHAIRMAN, COMMITTEE ON EDUCATION AND THE WORKFORCE

I want to thank all of you for coming today, and a special thanks to our distinguished witnesses for being here. As we look back, 1999 was a good year for our economy. It grew that year at a healthy 4.5 percent clip. Unemployment was relatively low, and the major stock market indices were fairly close to where they are now.

In comparison, we think of 2002 as being a tough year for our economy, driven in part by the terrorist attacks on New York and the Pentagon. Economic growth slipped. The stock market was lower, and unemployment was higher. We were in a recession. And yet in 1999, according to the nonpartisan Bureau of Labor Statistics, almost 33 million jobs in America were lost.

In 2002, about 32 million jobs were lost. That's right. In the good year of 1999, we lost almost a million jobs more than the bad year of 2002. The difference lies in the engine of real economic growth and worker prosperity: Job creation. What made 1999 a good year for workers and 2002 a challenging year wasn't the number of jobs lost; it was the number of other jobs that were created.

In 1999, our economy created approximately 35.6 million new jobs, about 2.7 million more than were lost, and about 5 million jobs more than were created in 2002. The difference between the good year of 1999 and the challenging year of 2002 wasn't the number of jobs lost; it was the number and quality of the new jobs the economy created.

The lesson from that, I think, is pretty clear. We have a dynamic economy. Job loss is not a new phenomenon, and we can't rest until every American has the chance for a good quality job. Any time a worker loses his or her job, there's real pain and loss. But Americans are resilient, and when we get knocked down, we dust ourselves off, get back up and look for new opportunities better than the old ones. I believe that's where our emphasis needs to be—figuring out how to help the economy create new and better jobs and opportunities for American workers.

To do that, we need to understand what drives growth in today's economy. As many of you know, before I came to Congress, I built my own business. That wasn't so long ago, but I believe that the economy has changed substantially since then. The Internet's impact has been enormous and undeniable. Knowledge, education, and innovation play a far greater role in today's dynamic and changing economy than in previous generations. And I believe they are key factors in America's ability to generate sustained job growth and create promising new job opportunities that provide higher wages and raised standards of living for workers. The individual skills, imagination and commitment of workers are increasingly critical not just to their individual employers, but to our entire economy.

All of this underscores one vital growth engine: Education. With an increasingly mobile workforce, it's absolutely critical for workers to have the education and skills necessary to adapt to new opportunities and move into new, higher wage jobs. And only with educational excellence at all levels, from K-12 all the way through to retirement, will we be able to continue generating the ideas that create high wage, high opportunity products and industries in the future.

In fact, we have a chart that highlights some important numbers from last week's Labor Department jobs report. The chart highlights the fact that the more education that workers receive, the lower their rates of unemployment and the better chance they'll have of getting a good job. As you can see, those who have had the least—have a college degree, have unemployment rates of lower than 3 percent.

We're here today to learn more about what drives job growth and opportunity in today's economy so that we can best give our constituents what they expect and deserve, solutions that will allow our economy to continue creating better opportunities for American workers and their families.

I support what the President and the Congress have thus far achieved, and I'm confident that because of those policies, we've turned the corner on the recession that began in 2000. But we need to think long term as well, and I believe that we need to ask ourselves this question: Given what we know and what we will learn about what drives job growth and opportunity in today's economy, what can we do to put our economy on the strongest possible footing?

This is an election year. We all know in election years there's a temptation on both sides to point fingers instead of solving problems. And with due respect to all of my colleagues, I know my constituents are tired of a lot of finger-pointing. What they want is sound policy that will help them improve their lives and their families' lives. And it might take some doing on both sides, but I hope we can keep them in mind despite our election year pressures.

And with that, I look forward to hearing from our distinguished guests today. I now yield to my colleague and friend from California, Mr. Miller.

[The prepared statement of Chairman Boehner follows:]

Statement of Hon. John A. Boehner, Chairman, Committee on Education and the Workforce

Thank you all for coming and a special thanks to our distinguished witnesses for being here. As we look back, 1999 was a good year for our economy. It grew that year at a healthy 4.5 percent clip, unemployment was relatively low, and the major stock market indices were fairly close to where they are now.

In comparison, we think of 2002 as being a tough year for our economy. Driven in part by the terrorist attacks on New York and the Pentagon, economic growth slipped, the stock market was lower, and unemployment was higher. We were in a recession.

And yet in 1999, according to the bipartisan Bureau of Labor Statistics, almost 33 million jobs were lost. In 2002, about 32 million jobs were lost. That's right–in the good year of 1999 we lost almost a million jobs more than in the bad year of 2002. The difference lies in the engine of real economic growth and worker prosperity, job creation.

What made 1999 a good year for workers and 2002 a challenging year wasn't the number of jobs lost–it was the number of other jobs that were created. In 1999 our economy created approximately 35.6 million new jobs, about 2.7 million more than were lost and 5 million jobs more than were created in 2002. The difference between the good year of 1999 and the challenging year of 2002 wasn't the number of jobs lost–it was the number and quality of the new jobs the economy created.

The lesson from that is clear. We have a dynamic economy. Job loss is not a new phenomenon. And we cannot rest until every American has a good job. Any time a worker loses his or her job, there is real pain and loss.

But Americans are resilient; when we get knocked down, we dust ourselves off, get back up, and look for new opportunities better than the old ones. I believe that's where our emphasis needs to be: figuring out how to help the economy create new and better jobs and opportunities for America's workers.

To do that, we need to understand what drives growth in today's economy. As many of you know, before I came to Congress I built my own business. That wasn't so long ago, but I believe that the economy has changed substantially since then. The Internet's impact has been enormous and undeniable. Knowledge, education, and innovation play a far greater role in today's dynamic and changing economy than in previous generations, and I believe they are key factors in America's ability to generate sustained job growth and create promising new job opportunities that provide higher wages and raise standards of living for workers. The individual skills, imagination, and commitment of workers are increasingly critical not just to their individual employers, but to our entire economy.

All of this underscores one vital growth engine—education. With an increasingly mobile workforce, it is absolutely critical for workers to have the education and skills necessary to adapt to new opportunities and move into higher-wage jobs. And only with educational excellence at all levels, from K–12 up to retirement, will we able to continue generating the ideas that create high-wage, high-opportunity products and industries in the future.

In fact, we have a chart that highlights some important numbers from last week's Labor Department's jobs report. The chart highlights the fact that the more education that workers receive, the lower their rates of unemployment and the better chance they'll have a good job. As you can see, those who have at least a college degree have unemployment rates of lower than three percent.

We're here today to learn more about what drives job growth and opportunity in today's economy, so that we can best give our constituents what they expect and deserve–solutions that will allow our economy to continue creating better opportunities for American workers and their families. I support what the President and the Congress have thus far achieved, and I'm confident that because of those policies we've turned the corner on the recession that began in 2000. But we need to think long-term as well. I believe we need to ask ourselves this question: given what we know and will learn about what drives job growth and opportunity in today's economy, what can we do to put our economy on the strongest possible footing?

This is an election year, and we all know in election years there's a temptation on both sides to point fingers instead of solving problems. With due respect to all my colleagues, I know my constituents are tired of finger-pointing. They want sound policy that will help them improve their lives and their families' lives. It might take some doing on both sides, but I hope we can keep them in mind despite election year pressures. With that, I look forward to our hearing from our distinguished guests today.

STATEMENT OF HON. GEORGE MILLER, RANKING MEMBER, COMMITTEE ON EDUCATION AND THE WORKFORCE

Mr. MILLER. Thank you, Mr. Chairman, and thank you for convening this hearing. Chairman Greenspan, thank you for being here. I've waited a long time to hear this testimony on the importance of education and innovation in our economy. We have heard this from many for many years. Just recently I was reading a long interview by John Chambers of CISCO about the importance he felt that education would be to future job growth. Carli Forino from Hewlett-Packard was back testifying in the Senate a couple of weeks ago with the same message. Bill Hambreck was making this call a number of years ago in the previous administration.

And I think we all understand that as we look in the globalized world, the need to have a better educated, a better trained workforce is absolutely paramount to our competitive position. But I also think that we have to clearly express concern about what is happening immediately today in our economy with 8 million Americans out of work, with 2 million of those workers unemployed almost 6 months or longer, with the exhaustion of the unemployment benefits, and with no help from Washington on the way. If the question of my colleague, Mr. Boehner, is whether or not people would prefer to live in 1999 as today, I think the question is a resounding yes. They would rather be in 1999, whether they were in the tech industry or they were working in America, because we were in fact creating a significant number of new jobs in the late '90's.

And yet at this point we see that some 2.3 million jobs have disappeared on this administration's watch. If you take out the public sector job creation, you're talking about 3 million jobs that have been lost, and we all know the devastating loss to manufacturing.

And I think it's important that we understand, if we want to back to 1999, as that was vibrant, we can go back some 70 years to find an administration that was unable to create jobs during its tenure in the White House. As the chart to the right show, Eisenhower created jobs, Roosevelt created jobs, Kennedy and Johnson, Nixon and Ford and Carter created jobs, Reagan and Bush Sr. created jobs, but this administration has been unable to do so. Maybe it's more complicated than we all think, because the Secretary of Treasury says he's absolutely mystified by the lack of the jobs. Maybe we need a new Treasury secretary.

But the fact of the matter is, the fact of the matter is that America's working people and families today are hurting. And the fact of the matter is, what we have seen is the decline in wages during this economic recovery. We've seen a jobless recovery now for some 31, 32 months. There was speculation this morning on the financial stations of whether or not this economic recovery has run its course. I hope it hasn't, because we need the jobs to show up in the future.

But what stuns me most of all is the lack of urgency about this problem in this administration, and I would say in the Republican Congress. The fact of the matter is, when you see hundreds of thousands of people exhausting their benefits, and we don't think about helping those families who are crashing to the ground, who are losing their homes, who are losing their families, actually, because of the economic stress in that situation. And yet we vote in the Congress, in the House and the Senate, to extend those benefits, but we can't get a real bill to the floor to extend those benefits. The President says he will sign it if it comes to his desk, but he doesn't demand that it comes to his desk.

Where is his sense of urgency about these families that are in so much trouble? Where is his sense of urgency when he fails to fully fund vocational education? I know he's creating a new fund to help the community colleges. We haven't seen the program. We haven't seen the money. We just know it was cut out of vocational education to create that program.

We see the Manufacturing Extension Partnership, a program that has provided thousands of small firms and medium-sized firms with critical technical assistance and business support systems. That's going to be slashed by 65 percent. These are the means by which we help small businesses generate the new jobs. These are the means by which we help families stabilize themselves until they can find that new job. And the fact of the matter is, many of them are so discouraged that they have left the workforce.

That's America today. That's America today where 6 months after the President tells us that he's going to appoint a manufacturing czar on Labor Day. He was going to create a new job, a manufacturing czar. It now turns out that that potential manufacturing czar is creating new jobs in China, not in the United States. He's creating a new factory and 165 new jobs in China. I don't think that that's the response that the American people deserve. The American people are quite rightly concerned about this effort.

I would also say that if we are going to make this investment in education, and I look forward to your remarks, that investment must be sustained, it must be real, and it must be comprehensive. Because when you read the economic journals on Asia, you will see that what is different now than when we started this process of some job transfers, when Motorola went early in the '80's, is what you now see is the building of institutions in China and India, seeking standards of excellence in their universities. The degrees are better now than they were before. The talents of those young people getting those degrees and technical training in engineering, in biotech, are vastly superior to what they were just a few years ago.

That parallel infrastructure ought to suggest to America that simply resting on our laurels on education in this country will not be good enough. It's very similar to when we all have said now see essentially a parallel manufacturing structure that technically is very good, major investment, state-of-the-art facilities that we thought we had the corner on for so long. And I think we've got to pay attention to that effort that is going on and understand what that signal is to those of us in Congress, to the American people of the kind of investment in applied research, the kind of investment in basic research, the kind of investment in education, whether it's K through 16 or it's lifelong learning, the continuous training and investment that must be made on behalf of these individuals.

But what I don't see is I don't see any of that reflected in the budgets of this administration, and I don't see any of that reflected in a sense of urgency that if we are going to leap to the new technologies, if we are going to go to the next generation of manufacturing, that we're preparing an educated workforce to take part in that activity.

And my concern is, is the remark made by one of the leaders in Silicon Valley, which said "today Silicon Valley is where you start a company. You grow it in China." That's a very, very serious problem if in fact that's more than just an offhand remark.

But we do see that, in fact, taking place in so many of our industries where people were led to believe they would have the good jobs; the bad jobs would be outsourced. The dirty, the heavy, the dangerous jobs would go to Third World economies. That has changed rather dramatically, and I suspect that we're only at the beginning of that process, because so many of the technological changes that facilitate that have yet to be—have had their run yet in terms of the kinds of benefits that they can provide to companies in terms of managing worldwide manufacturing, worldwide sales and marketing and the financial transactions.

So there's a lot on our plate, Mr. Chairman, and I hope that your remarks will address the idea that this must be a sustained national commitment for a long time into the future if in fact we are going to be able to participate in that globalized economy on behalf of America's workers and their families.

Thank you.

Chairman BOEHNER. It's now my pleasure to introduce the Chairman of the Board of Governors of the Federal Reserve System, the Honorable Alan Greenspan.

Dr. Greenspan is the Chairman of the Board of Governors of the Federal Reserve System. He's held the Chairmanship since 1987, and most recently resumed the office in June 2000 for his fourth 4-year term. He's been nominated as Chairman by President Reagan, President Bush, President Clinton, and has been confirmed by overwhelmingly broad bipartisan majorities.

Chairman Greenspan has served as a member of President Reagan's Economic Policy Advisory Board, a member of Time Magazine's Board of Economists, Senior Adviser to the Brookings Panel on Economic Activity, a consultant to the Congressional Budget Office, a Chairman of the Conference of Business Economists, President and Fellow of the National Association of Business Economists, a director of the National Economics Club, and Chairman of the Federal Open Market Committee.

And on a personal note, we worked very closely together on the movement and the first House passage of financial services modernization in the summer of 1998. Without his help, we'd still be debating financial services modernization.

So with that, Mr. Chairman, we'd love to hear your testimony.

STATEMENT OF HON. ALAN GREENSPAN, CHAIRMAN, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

Mr. GREENSPAN. Thank you very much, Mr. Chairman, Mr. Miller, and Members of the Committee. The United States economy has long been characterized by a strong tradition of entrepreneurial spirit among our businesspeople, a high level of skill among our workers, and an openness by firms and workers alike to intense competition within and beyond our borders.

Those attributes have given us a standard of living unparalleled for so large a population, and one that has risen steadily over the history of our nation. But with that bounty has also come the inevitable stresses and anxieties that accompany economic advance. One concern that has persisted for some time is the fear that we are irreversibly losing manufacturing jobs because of businesses' efforts to extract rapid gains and production efficiencies and to cut labor costs by tapping the lower wage economies of Asia and Latin America.

More recently, similar concerns have arisen about the possibility that an increasing number of our better paying white collar jobs will be lost to outsourcing, especially to India and China. Many of these jobs are in the service sector, and they were previously perceived as secure and largely free from the international competition long faced in the manufacturing sector. There is a palpable unease that businesses and jobs are being drained from the United States with potential adverse long-run implications for employment and the standard of living of the average American.

Job insecurity is understandably significant when nearly 2 million members of our workforce have been unemployed for more than 6 months. The issue is both important and sensitive, dealing as it does with the longer term wealth of our nation and with the immediate welfare of so many individuals and communities.

In the debate that has ensued, a large gulf is often perceived between the arguments of economists who almost always point to the considerable benefits offered over the long term by exposure to free and open trade, and the obvious stress felt by those caught on the downside of turbulence created by that exposure. It is crucial that this gulf be bridged.

As history clearly shows, our economy is best served by full and vigorous engagement in the global economy. Consequently, we need to increase our efforts to ensure that as many of our citizens as possible have the opportunity to capture the benefits that flow from that engagement. For reasons that I shall elucidate shortly, one critical element in creating that opportunity is it provide rigorous education and ongoing training to all members of our society.

This proposal is not novel. It is in fact the strategy that we have followed successfully for most of the past century, and a strategy that we now should embrace with renewed commitment.

Over the long sweep of American generations and waves of economic change, we simply have not experienced a net drain of jobs to advancing technology or to other nations. Since the end of World War II, for example, the unemployment rate in the United States has averaged less than 6 percent with no apparent trend. And as recently as 2000, it dipped below 4 percent. Moreover, incomes trended higher whether we had a trade deficit or a trade surplus, and whether international outsourcing was large or small.

Clearly, fundamental economic forces have apparently been at work. Research on wealth creation in both emerging and developing nations strongly suggests that it is the knowledge and the skill of our population, interacting under our rule of law, that determine our real incomes, irrespective of the specific jobs in which these incomes are earned, and irrespective of the proportion of domestic consumption met by imports.

These upward trends in the standard of living, however, mask the stress that significant parts of our workforce endure. Joseph Schumpeter, the renowned Harvard professor, called the process of progress “creative destruction,” the continuous scrapping of old technologies to make way for the new. Standards of living rise because the cashflows of industries employing older, increasingly obsolescent technologies are marshaled along with new savings to finance the production of capital assets that almost always embody cutting edge technologies. Workers migrate with the capital. This is the process by which wealth is created incremental step by incremental step.

The process of creative destruction has been accompanied by an ever growing conceptualization of economic output. Ideas rather than materials or physical brawn have been by far the greatest contributors during the past half century to our average annual increase of 3.25 percent in real gross domestic product. Technological advance is continually altering the shape, nature and complexity of our economic processes.

To effectively manage this ever increasing complexity, our labor force has had to become more and more technically oriented. Years of schooling, a rough proxy for skills, averaged 9.25 years in 1950. A half century later, schooling averaged more than 12 years. At the risk of some oversimplification, if the skill composition of a workforce meshed fully with the needs of our increasingly complex capital stock, wage-skill differentials would be stable and percentage changes in wage rates would be the same for all job grades.

This was largely the case through the first quarter century after World War II. But for the past 20 years, the real incomes of skilled, especially highly skilled workers, have risen more than the average of all workers, whereas real wage increases for lesser skilled workers have been below average, indeed virtually nonexistent.

This difference in wage trends suggests that at least in relative terms, we have developed a shortage of highly skilled workers and a surplus of lesser skilled workers. Although in recent years the proportion of our labor force made up of those with at least some college education has continued to grow. We appear nonetheless to be graduating too few skilled workers to address the apparent imbalance between the supply of such workers and the burgeoning demand for them.

More broadly, in considering the issue of expanding our skilled workforce, some have a gnawing sense that our problems may be more than temporary, and that the roots of the problem may extend back through our education system. Many of our students languish at too low a level of skill, and the result is an apparent excess of supply relative to a declining demand.

Our population today is also adjusting to an ever faster turnover of jobs. We are growing more aware that in the current intensely competitive economy, the pace of job creation and destruction implies the average worklife will span many jobs and even more than one profession. I do not doubt that the vast majority of us would prefer to work in a less stressful, less competitive environment. Yet in our roles as consumers, we seem to relentlessly seek the low product prices and high quality that are prominent features of our current frenetically competitive economic structure. Retailers who do not choose their suppliers, foreign or domestic, with price and quality uppermost in mind, risk losing their customers to retailers who do.

In response to these strains and the dislocations they cause, a new round of protectionist steps is being proposed. These alleged cures would make matters worse rather than better. They would do little to create jobs, and if foreigners were to retaliate, we would surely lose jobs. Besides enhancing education, we need to further open markets here and abroad to allow our workers to compete effectively in the global marketplace.

We do have a choice. We can erect walls to foreign trade and even discourage job displacing innovation. The pace of competition would surely slow, and tensions might appear to ease, but only for a short while. Our standard of living would soon begin to stagnate and perhaps even decline as a consequence. Time and again through our history, we have discovered that attempting merely to preserve the comfortable features of the present, rather than reaching for new levels of prosperity, is a sure path to stagnation.

In closing, Mr. Chairman, I have emphasized the importance of redressing the apparent imbalances between the supply and demand for labor across the spectrum of skills. Those imbalances have the potential to hamper the adjustment flexibility of our economy overall. But these growing imbalances are also aggravating the inequality of incomes in this country. Historically, we have placed much greater emphasis on the need to provide equality of opportunity than on equality of outcomes. But equal opportunity requires equal access to knowledge. We cannot expect everyone to be equally skilled. But we need to pursue equal access to knowledge to ensure that our economic system works at maximum efficiency and is perceived as just in its distribution rewards.

Thank you very much. I should very much like that my full remarks be included for the record, Mr. Chairman.

[The prepared statement of Mr. Greenspan follows:]

Statement of Hon. Alan Greenspan, Chairman, Board of Governors of the Federal Reserve System, Washington, DC

The United States economy has long been characterized by a strong tradition of entrepreneurial spirit among our business people, a high level of skill among our workers, and an openness by firms and workers alike to intense competition within and beyond our borders. Those attributes have given us a standard of living unparalleled for so large a population—and one that has risen steadily over the history of our nation.

But with that bounty have also come the inevitable stresses and anxieties that accompany economic advance. One concern that has persisted for some time is the fear that we are irreversibly losing manufacturing jobs because of businesses' efforts to extract rapid gains in production efficiencies and to cut labor costs by tapping the lower-wage economies of Asia and Latin America.

More recently, similar concerns have arisen about the possibility that an increasing number of our better-paying white-collar jobs will be lost to outsourcing, especially to India and China. Many of these jobs are in the service sector, and they were previously perceived as secure and largely free from the international competition long faced in the manufacturing sector. There is a palpable unease that businesses and jobs are being drained from the United States, with potentially adverse long-run implications for employment and the standard of living of the average American. Job insecurity is understandably significant when nearly two million members of our workforce have been unemployed for more than six months.

The issue is both important and sensitive, dealing as it does with the longer-term wealth of our nation and with the immediate welfare of so many individuals and communities. In the debate that has ensued, a large gulf is often perceived between the arguments of economists, who almost always point to the considerable benefits offered over the long term by exposure to free and open trade, and the obvious stress felt by those caught on the downside of turbulence created by that exposure. It is crucial that this gulf be bridged.

As history clearly shows, our economy is best served by full and vigorous engagement in the global economy. Consequently, we need to increase our efforts to ensure that as many of our citizens as possible have the opportunity to capture the benefits that flow from that engagement. For reasons that I shall elucidate shortly, one critical element in creating that opportunity is the provision of rigorous education and ongoing training to all members of our society. This proposal is not novel; it is, in fact, the strategy that we have followed successfully for most of the past century and a strategy that we now should embrace with renewed commitment.

Over the long sweep of American generations and waves of economic change, we simply have not experienced a net drain of jobs to advancing technology or to other nations. Since the end of World War II, for example, the unemployment rate in the United States has averaged less than 6 percent with no apparent trend; and as recently as 2000, it dipped below 4 percent.

Moreover, real earnings of the average worker have continued to rise. Over the past century, per capita real income has risen at an average rate of more than 2 percent per year, declining notably only during the Great Depression of the 1930s and immediately following World War II. Incomes trended higher whether we had a trade deficit or a trade surplus and whether international outsourcing was large or small. More fundamental economic forces have apparently been at work. Research on wealth creation in both emerging and developed nations strongly suggests that it is the knowledge and the skill of our population interacting under our rule of law that determine our real incomes, irrespective of the specific jobs in which these incomes are earned and irrespective of the proportion of domestic consumption met by imports.

These upward trends in the standard of living, however, mask the stress that significant parts of our workforce endure. Joseph Schumpeter, the renowned Harvard professor, called the process of progress “creative destruction,” the continuous scrapping of old technologies to make way for the new. Standards of living rise because the cash flows of industries employing older, increasingly obsolescent, technologies are marshaled, along with new savings, to finance the production of capital assets that almost always embody cutting-edge technologies. Workers migrate with the capital. This is the process by which wealth is created, incremental step by incremental step.

The process of creative destruction has been accompanied by an ever-growing conceptualization of economic output. Ideas rather than materials or physical brawn have been by far the greatest contributors during the past half-century to our average annual increase of 3–1/4 percent in real gross domestic product.

Technological advance is continually altering the shape, nature, and complexity of our economic processes. To effectively manage this ever-increasing complexity, our labor force has had to become more and more technically oriented. Years of schooling, a rough proxy for skills, averaged nine and one-quarter years in 1950. A half-century later, schooling averaged more than twelve years.

At the risk of some oversimplification, if the skill composition of our workforce meshed fully with the needs of our increasingly complex capital stock, wage-skill differentials would be stable, and percentage changes in wage rates would be the same for all job grades. This was largely the case through the 1960s when the addition of skilled college graduates to the labor force, in part the result of schooling financed by the GI Bill, was sufficient to hold wage increases among the highly skilled to average gains. Real wages of the lesser skilled also rose significantly, in part as a result of effective high-school educations and the many skills learned during the war. In the 1970s, the supply of skilled workers received another boost from the rapid expansion of our nation’s community colleges. In short, technical proficiencies across all job grade levels appeared to rise about in line with the needs of our, even then, complex stock of capital.

But for the past twenty years the real incomes of skilled, especially highly skilled, workers have risen more than the average of all workers, whereas real wage rate increases for lesser-skilled workers have been below average, indeed virtually nonexistent. This difference in wage trends suggests that, at least in relative terms, we have developed a shortage of highly skilled workers and a surplus of lesser-skilled workers.

Although in recent years the proportion of our labor force made up of those with at least some college education has continued to grow, we appear, nonetheless, to be graduating too few skilled workers to address the apparent imbalance between the supply of such workers and the burgeoning demand for them. Perhaps the accelerated pace of high-tech equipment installations associated with the large increases in productivity growth in recent years is generating unachievable demands for skilled graduates over the short run. If the apparent acceleration in the demand for skilled workers to staff our high-tech capital stock is temporary, as many presume, the pressure on our schools would ease as would the upward pressure on high-skilled wages.

More broadly, in considering the issue of expanding our skilled workforce, some have a gnawing sense that our problems may be more than temporary and that the roots of the problem may extend back through our education system. Many of our students languish at too low a level of skill, and the result is an apparent excess of supply relative to a declining demand. These changing balances are most evident in the failure of real wages at the lower end of our income distribution to rise during the past quarter-century.

The hypothesis that we should be able to improve upon the knowledge that our students acquire as they move from kindergarten to twelfth grade gains some support from international comparisons. A study conducted in 1995 revealed that, although our fourth-grade students were above average in both math and science, by the time they reached their last year of high school they had fallen well below the international average.[1] Accordingly, we apparently have quite a distance to go before we catch up.

Early last century, technological advance required workers with a higher level of cognitive skills—for instance the ability to read manuals, to interpret blueprints, or to understand formulas. Youth were pulled from rural areas, where opportunities were limited, into more-productive occupations in business and an advancing manufacturing sector. Our educational system responded: In the 1920s and 1930s, high-school enrollment in this country expanded rapidly. It became the job of these institutions to prepare students for work life. In the context of the demands of the economy at that time, a high-school diploma represented the training needed to be successful in most aspects of American enterprise. The economic returns for having a high-school diploma rose and, as a result, high-school enrollment rates climbed.

By the time that the United States entered World War II, the median level of education for a seventeen-year-old was a high-school diploma—an accomplishment that set us apart from other countries. I cannot dismiss the notion that we can learn something from that period and perhaps from other countries. Still, I realize that the world was different from today in many ways. Societal changes have been numerous and profound, and our schools are being asked to do a great deal more than they have in the past. We need to be forward-looking in order to adapt our educational system to the evolving needs of the economy and the realities of our changing society.

One area in which educational investments appear to have paid off is our community colleges. These two-year institutions are playing a similar role in preparing our students for work life as did our early twentieth-century high schools in that less technically oriented era. But to an even greater extent, our population today is adjusting to an ever-faster turnover of jobs. We are also growing more aware that in the current intensely competitive economy, the pace of job creation and destruction implies that the average work life will span many jobs and even more than one profession.

The desire of workers to learn skills that build on their previous work experiences or to acquire new skills is apparent. Currently almost one in three of the enrollees in community colleges and almost one of two part-time enrollees at four-year undergraduate schools are aged thirty or older, statistics that suggest that these individuals have had previous job experience. The increase in these enrollments over the past thirty years attests to the success of these institutions in imparting both general and practical job-related training. A rising proportion of the population is also taking advantage of work-related instruction.

More broadly, our system of higher education bears an important responsibility for ensuring that our workforce is prepared for the demands of economic change. America's reputation as the world's leader in higher education is grounded in the ability of these versatile institutions to serve the practical needs of the economy by teaching and training and, more significantly, by unleashing the creative thinking that moves our economy forward.

* * *

I do not doubt that the vast majority of us would prefer to work in a less stressful, less competitive environment. Yet, in our roles as consumers, we seem to relentlessly seek the low product prices and high quality that are prominent features of our current frenetically competitive economic structure. Retailers who do not choose their suppliers, foreign or domestic, with price and quality uppermost in mind, risk losing their customers to retailers who do. Retailers are afforded little leeway in product sourcing. If consumers are stern taskmasters of their marketplace, business purchasers of capital equipment and production materials inputs have taken the competitive paradigm a step further and applied it on a global scale.

---

[1] The Third International Math and Science Study is a project of the International Study Center, Lynch School of Education, Boston College. A complete set of TIMSS publications is available on the center's web site, http://timss.bc.edu/timss1995i/TIMSSPublications.html.

Those who have lost jobs as a consequence of this process, I know, are not readily consoled by the fact that job insecurity concerns are not new. But keeping the current period in context is instructive. Jobs in the United States were perceived as migrating to low-wage Japan in the 1950s and 1960s, to low-wage Mexico in the 1990s, and most recently to low-wage China. Japan, of course, is no longer characterized by a low-wage workforce, and many in Mexico are now complaining of job losses to low-wage China.

In response to these strains and the dislocations they cause, a new round of protectionist steps is being proposed. These alleged cures would make matters worse rather than better. They would do little to create jobs; and if foreigners were to retaliate, we would surely lose jobs. Besides enhancing education, we need to further open markets here and abroad to allow our workers to compete effectively in the global marketplace.

* * *

As our economy exhibits increasing signals of recovery, job loss continues to diminish. But new job creation is lagging badly—the ironic consequence of accelerated gains in productivity. In all likelihood, employment will begin to increase more quickly before long as output continues to expand. We have reason to be confident that new jobs will displace old ones as they always have, but America's job-turnover process will never be without pain for those caught on the downside of creative destruction.

We do have a choice. We can erect walls to foreign trade and even discourage job-displacing innovation. The pace of competition would surely slow, and tensions might appear to ease. But only for a short while. Our standard of living would soon begin to stagnate and perhaps even decline as a consequence. Time and again through our history, we have discovered that attempting merely to preserve the comfortable features of the present, rather than reaching for new levels of prosperity, is a sure path to stagnation.

In closing, I have emphasized the importance of redressing the apparent imbalances between the supply and demand for labor across the spectrum of skills. Those imbalances have the potential to hamper the adjustment flexibility of our economy overall. But these growing imbalances are also aggravating the inequality of incomes in this country.

Historically, we have placed much greater emphasis on the need to provide equality of opportunity than on equality of outcomes. But equal opportunity requires equal access to knowledge. We cannot expect everyone to be equally skilled. But we need to pursue equal access to knowledge to ensure that our economic system works at maximum efficiency and is perceived as just in its distribution of rewards.

Chairman BOEHNER. We will include all of your remarks, and, Chairman Greenspan, we appreciate your coming before our Committee today.

You clearly believe that we need to strengthen the educational system in this country to ensure that workers can capitalize on today's and tomorrow's opportunities, whether it's K-12 education to higher education, worker training, lifelong learning. And worker training and retraining programs offer short-term solutions for some of our fellow citizens, but could you talk specifically about the importance of kindergarten through 12th grade education, our expectations as a nation for our students and the need for high standards?

Mr. GREENSPAN. Mr. Chairman, I think that we find in the various different studies, as I'm sure you are aware, that our forth grade students are above average internationally in both math and science. And somewhere beyond that, something happens which brings them by 12th grade apparently to fairly significantly below the average.

Fortunately, we have world class colleges and universities generally, and the students which do manage to work their way through the primary and secondary education system into college tend to do reasonably well in this country and indeed are a major force in the staffing of our very complex technological capital stock and economic structure.

But we clearly are not doing enough in the way of moving students through at a faster level of skill accretion, because as I point out in my prepared remarks, it clearly is reflected in these very dramatic changes in the so-called college/high school skill spreads, which have opened up quite materially, and in the obvious arithmetical implication of a significant concentration of income in this country. And I've always argued that it is very important for a democratic society to have full opportunity and fuller capability of people to move up throughout the whole structure of the society, and that means that we must enhance the capability of our primary and secondary education.

Chairman BOEHNER. Mr. Chairman, there seem to be two trends in the world that I'd like to ask you to comment on. On one hand, there are many economically developed nations which are seeing their economic position erode and are responding by trying to stop that erosion. France, for example, tried to reduce unemployment by reducing the maximum number of hours a worker could work, and unemployment in France is over 10 percent. Germany tries to protect the wages of workers with generous unemployment insurance, and the result is that only very highly skilled workers can find work. Japan tried to protect industries, and that government—trying to protect them was very important to them, and as a result, entrepreneurs couldn't get the funds or skilled workers they needed, and Japan has shown practically no growth over the last decade.

Now the other trend is coming from trading partners like Australia and developing nations like India and China. They seem to embrace capitalism, innovation, and education. And it may not be absolute, but the trend seems to be unmistakable. And by and large, these countries are doing better and seem to be building a better future for their citizens. So which way is best for our country? Are we better off trying to defend what we've got, or build for the future?

Mr. GREENSPAN. Well, Mr. Chairman, I think that while you correctly describe the more recent history of Europe, the very current history of Europe is changing, and it's changing in the direction to which you are suggesting we ought to be moving.

The work week in France, which was expected to have some considerable difficulty in maintaining a flexible labor market, is being recognized as such, and I think that there are actions being taken with respect to labor market reform in France which goes in the direction in which you were pointing. Obviously similar such events are occurring in Germany and is a major problem in that country to enhance the flexibility of their labor markets.

There was a great debate implicitly, oh, through a goodly part of the post-World War II period, about the nature of the flexibility of labor markets. We, as you know, have taken the position that they should be quite flexible, and indeed we very specifically have created a system in which it is relatively easy for an employer to discharge an employee. That of course is not the case in a number of other countries in the world.

There was an interesting question as to whether or not that would create more unemployment in the United States or less. We did not know. Except what we found is that in the event the unemployment rate went down, and the reason it went down is that because employers, perceiving that in the event they make a mistake in hiring somebody, can remedy that mistake readily, easily, and therefore were far more willing to hire people, take the risk of hiring people. And what we saw is a fairly significant expansion in employment, as Mr. Miller pointed out earlier, throughout the '90's when this issue became paramount.

I do believe that as far as the economic evaluation of what type of labor market one should want, I think there is an increasing awareness that flexibility, more of our type, is the way to go. And I do believe that we will see that Europe and Japan will be moving in that direction within the next years—over the next years.

Chairman BOEHNER. Mr. Miller.

Mr. MILLER. Thank you. Mr. Chairman, thank you for your testimony. In my opening remarks I obviously recounted the number of Americans that are out of work, the number, some 2 million, that have been unemployed 6 months or longer, and the number of people who apparently have stopped looking for work, have dropped out of the labor force. And I would just like to ask you whether you support or you don't support a temporary extension of unemployment benefits to these families that apparently cannot find work. It's not that they're not looking.

Mr. GREENSPAN. Mr. Miller, I think our unemployment insurance system is very well structured, and I think that it's worked in the way that I think we wanted it to work. And remember, the crucial issue here is that we do not wish to encourage people who can find a job not to do so. Therefore, we have limited the amount of unemployment insurance.

However, when unemployment is created through no fault of the workers' actions, then I think it is clearly to our advantage to find ways of creating support in our system. And as a consequence, in times like this, I have supported the issue of extension of unemployment insurance. And while I am fairly well convinced that employment is about to pick up or to be more explicit, new hires are going to be picking up reasonably quickly if this economic growth rate continues, I think that considering the possibility of extending unemployment insurance is not a bad idea.

Mr. MILLER. Thank you. The issue of outsourcing for a moment. We're not going to settle it here today. But when we first started this discussion when we were dealing with the China Free Trade Act in relation to China's entry into the WTO, obviously there were many, many American corporations and American brands that wanted to establish themselves in China. And early, Proctor & Gamble went early, Motorola went early, Ford went early. And the idea was that they could sell a billion Chinese cell phones or pagers. In the early days, they just made pagers. They didn't make cell phones. Or they could sell them personal care products, and that was the market.

When you look at it today over the last couple of years, what you really see now is world class manufacturers of Japan, Taiwan, the United States, who are moving to establish platforms for this improving market in China, but also clearly for export, which I think is a change of intent in many instances from what people were thinking in the '80's and the '90's. And so people who lead their sector of the economy in terms of efficiencies and product and quality have now made a decision that they have got to go there to have an edge to export to the United States or to the rest of the world.

And you used argue in economic recoveries who was first in and who was last out, or first in and last out, whether it was housing or construction or that sort of thing. In the service economy, it appears that if you start selling more Dell computers or more Apple computers, maybe the first out of the recovery would be the people who then have to service those computers, the call centers that we now see that so many manufacturers rely on for the service of their products to their customers.

And what we see now is that those jobs that probably in an economic recovery may well have been created in rural America where call centers were located in so many regions of the country, it now appears as that demand is picking up that many of those jobs in fact are being closed down, as the Wall Street Journal talked about what took place in a call center in the south, and USA Today was recounting another closure of a call center in the southwest. And those jobs that would have, at this point in the economic recovery would have happened in the United States, appear to have happened there.

And I just wonder, what's the impact of that and how deep into the recovery do we expect that to go? Does that happen to, if you have manufacturers who are increasing their capability in China to export, can we expect the job creation that you would have seen in that level—at that stage of manufacturing in the United States being transferred offshore?

That's part of the economic cycle I think, and I'm not a big one of saying you can just erect a barrier and say you can't do that. But I'm just asking, what are our expectations in terms of why this has been such a long jobless recovery compared to others? That's a long question, but I know there's a short answer there.

Mr. GREENSPAN. I don't know how to give a short answer.

[Laughter.]

Mr. MILLER. That's what I heard. I don't know. This is the first time I've asked you a question. But I can tell you, when you raise your hand, those cameras go off. It's incredible.

[Laughter.]

Mr. GREENSPAN. Congressman, I think what you're describing is a process which has been going on for a very long period of time. It's what we call globalization. Globalization basically is the gradual obliteration of national boundaries so far as economic exchange occurs. And in this country we saw it in the latter part of the 19th century as we moved across state borders, first even county borders. And it's a continuous, irreversible process. And what we are largely beginning to see in the most recent period is the consequences of that as technology enables people and ideas to move at a very much more rapid pace.

And so what we are indeed seeing is exactly what you explained, which is a process of trade among nations increasing fairly dramatically. I mean, for example, just on imports and exports, the ratio of trade to world GDP has been growing inexorably, which means effectively that there's ever increasing exchange between countries. And I think that is now becoming even more sophisticated getting into certain service areas such as international outsourcing, which we hadn't seen before, especially by satellite obviously.

This is a normal process in which the division of labor inexorably expands, which creates ever rising standards of living everywhere. It is not a zero sum game. And from all of the evidence that I can perceive, we in the United States have been the greatest beneficiaries of this process.

And as a consequence, I think it's important for us to recognize that what is causing our economic prosperity despite all of this globalization and churning, despite the fact that we have a very turbulent, highly competitive, indeed I call it frenetic is the best way to capture it, which causes great turmoil amongst businesses and amongst people who are working in businesses, the net result has been a very significant increase in standards of living.

I don't think we have a choice to go back. In other words, you cannot turn ideas around. We cannot forget that silicon is an incredibly important mineral far beyond what we used to think it was 50 years ago. And I think, as best I can judge, what makes us special in the United States, why even though our educational system is falling short of clearly some of East Asian educational systems, is we have a political system with a Bill of Rights, and rights which are not really existent or enforced anywhere else in the world. I often say that the reason for the prosperity in the United States is largely our Constitution and our Founding Fathers who had the great insights to understand the importance of individual rights, property rights, and an extension of that, the law of contracts.

People want to invest in the United States because they know their rights are protected. There's a great deal of concern about investing in China, even Japan, at least—because we're not clear on what their laws are or any other place.

I would therefore say that if we can maintain a fairly strong educational system which enables our people to staff this ever more complex, very difficult structure, I think we will continue to maintain ever rising standards of living at unemployment rates which are low and hopefully lower as this technology improves.

I think that what we are finding is a number of the laws in foreign countries which impede our movement and impede theirs are beginning to come down, and I think in many respects, they look to our legal structure as a model to work with, and I think that's to everybody's benefit.

Chairman BOEHNER. Mr. Petri.

Mr. PETRI. Thank you. Chairman Greenspan, I know we ought to be concern about deficit spending, and it's a serious problem, but I tend to think that some spending is simply spending and other spending is investment. For the sake of our economy and all the good things that come from having a strong economy, we need to invest in education and also in highways and infrastructure necessary to get supplies to factories, goods to market and workers to their jobs.

We obviously need to fight waste, fraud and abuse everywhere, but some kinds of spending are pro-growth rather than a drag on the economy even when we do have deficits. I'd like to hear your comments on that.

Mr. GREENSPAN. Well, what specifically would you like me to comment on first? That's a pretty broad subject.

Mr. PETRI. Well, it obviously is a broad subject. What I'm curious to know is whether we should cut back on education and infrastructure investment in order to improve the deficit numbers, or whether we should go ahead and invest prudently but maintain and even increase investment in infrastructure and education in order to get a return from it for the economy which will help us reduce the deficit long term.

Mr. GREENSPAN. We have basically, in my judgment, overcommitted in this country for the longer term. In other words, as I've said elsewhere, I believe that we have made commitments which I think we're going to have considerable difficulty actually delivering on. And it's essentially a problem which happens to us periodically, and we have many such claims on limited resources of which education is one, and it is a critical one.

I think we are fortunate in certain respects in that the private sector is picking up a very considerable part of the educational system, the re-education system. I mean, for example, there's been a major increase in what we call corporate universities, where there's a very substantial amount of learning that's going on within businesses. And the community colleges are rising at a fairly rapid rate. Remember, of course, that the vast majority of education spending in this country is state and local, and that a limited part, I believe less than 10 percent, is Federal.

I do think that we have to find ways of employing our resources as best we can but there is no question that a crucial element in any budgetary policy is the aggregate GDP of the United States, or put another way, the revenue base from which all other expenditures essentially are financed. If education is a critical issue in creating economic growth, as I hope I tried to demonstrate in my prepared remarks, then clearly that is a major economic policy question. And while I'm not going to presume that I have great insights in how you allocate very large numbers of very important programs to a limited budget, I would say that I think education in one sense is probably more important than infrastructure if I were to have to choose between the two. I trust that that does not occur.

But this is an increasingly idea-related economy, and there is less physical things involved in the value added that we are involved with. So I would put education at the top.

Mr. PETRI. Are there any techniques to maximize productive investment, rather than just throwing money? I mean, we were arguing here in the education area that we were measuring our commitment to education by how much money we were spending rather than by the results of that spending, and we're trying to switch that some. But is there anything that you'd like to highlight in that area to try to—in the private sector, you look at return on investment. We need to figure out some way of figuring out whether we're investing wisely or just throwing money at problems.

Mr. GREENSPAN. I agree that measuring the input, which is putting the money in, is not a necessarily accurate measure of the output. I don't know enough about how to test various different outcomes in the education system. I do know that it is important that we do that, because we are falling behind by any measure in our secondary schools. And I should think that we can rest on our legal infrastructure for just so much to create our ability to stay in the forefront of technology. But I can't see how we can move forward in this economy without having the right people run this very complex economy, which is getting ever more complex every year, which means that our student body has got to get ever more skilled every year. In other words, it's not a question of bringing the skills up to a specific level. We have to increase them every year or we will fall behind.

Chairman BOEHNER. The Chair recognizes the gentleman from New Jersey, Mr. Andrews.

Mr. ANDREWS. Thank you, Mr. Chairman. Good morning, Mr. Chairman, and we thank you for your testimony. This morning you have given us two, I think, clearly accurate statements, and you've given us a difficult reconciliation problem. A minute ago, you said that we've over-committed to longer-term obligations, and there are many claims on limited resources. I think you're absolutely right, that we are in grave fiscal distress for the long term in the country. You've then said that one of the—the highest priorities to sustain economic growth is increasing the skills of our workforce on a continuous basis, which I think is commendable, and admirable, and I agree with you.

I'd like your counsel on reconciling the conflict. Conflict flows from this point. Although you are correct that there is a lot of private-sector investment in higher education—the corporate universities, online learning and so forth—it's also correct that students have to pay tuition, whether they're a laid-off auto worker or a person looking to get a promotion in her job, students ultimately have to pay the tuition. And the cost of this tuition is high and rising. Rising faster than the rate of inflation.

Federal financial aid, therefore, is indispensable to the problem of getting more people more access to higher education. Let me ask for your advice with this set of facts. If we were to double the Pell Grant program over the next 5 years, it would cost us on a 5-year basis between $65 billion and $70 billion. Above and beyond the money we're spending on Pell Grants right now.

And if we were to expand the eligibility for, or use some other combination costs about $70 billion. The tax cut that is already law from 2006 to 2011, with respect to the top 1 percent of taxpayers in the country, will deprive the Treasury of $665 billion of revenue.

So one of the policy choices that we would have would be to reduce the tax cut for the top 1 percent by about 10 percent. That is to say that we'd give the top 1 percent 90 percent of the tax cut that they're getting, and take away about 10 percent. That would finance a doubling of Pell Grants over the next 5 years. I would ask for your counsel on whether you think that's a good idea. If you think that it's not a good idea, that we should leave the tax cuts fully in place and not double the Pell Program, or if there's a third option that I'm missing. And if there is a third option, if you could identify it for us.

Mr. GREENSPAN. You're merely putting options out there of which there can be 50 others very similarly phrased. I am, as I've stated previously, supportive of keeping the tax base as low as we can keep it, on the grounds that we need a very vibrant economy in the future to create a revenue base, which a great number of these particular outlays—from which these outlays can be met. I am concerned that if we start to try to raise tax rates to solve what is a very difficult problem with respect to what's in the budgets, we raise to an ever increasing extent a problem that the tax rates will become increasingly less productive of revenue. And indeed, that's one of the reasons why I argued, and have been arguing recently, that before we try to fill in the fairly large hole that is going to exist out past 2010 from revenues, that we look to what can be done—

Mr. ANDREWS. Mr. Chairman, if I may. Do you think that a change as marginal as the one I've suggested would have that much of a deleterious effect on revenue? I'm suggesting that we leave in place 100 percent of the tax cuts for the top 99 percent, and 90 percent of the tax cuts for the top 1 percent, in order to finance a doubling of the Pell Grant program. Do you think it would have that kind of huge impact on economic growth?

Mr. GREENSPAN. Well, the reason it's difficult for me to answer is that if you take the particular proposal on Pell Grants, and then add 20 others, you all of a sudden find out that in each individual case, it's de minimis. When you add them all up, it becomes a bigger issue.

Mr. ANDREWS. But you just said education was at the top of the list, so if you limit it to that, would you favor that?

Mr. GREENSPAN. I personally would consider that as important. But—

Mr. ANDREWS. Welcome to the club. We appreciate that.

Mr. GREENSPAN. —this is an issue which the Congress has got to judge. I mean, I don't have a vote, you do. And—

Mr. ANDREWS. You have a pretty important vote, too, though, I think.

Mr. GREENSPAN. All I'm suggesting is—and I've argued this, and I think it's important—is, prior to even discussing such an issue, we ought to get Pay-go back in and discretionary caps, because I—

Mr. ANDREWS. Amen. Amen. I hope the Republican budget resolution does that. My understanding is that the draft resolution does not that's being considered by the Budget Committee today.

Mr. GREENSPAN. I think that—I've argued since September of 2000, when it looked as though they were not going to renew Pay-go, that not renewing it was a bad mistake. I still believe that, and I do not know how one can grapple with the problem that you're showing in microcosm, without having a structure which enables choices to be made in a—

Mr. ANDREWS. Mr. Chairman, we'd like to take you down the hall to the Budget Committee and have you give them that advice before they vote on the budget resolution today. Thank you very much.

Mr. McKEON. Chairman Greenspan, thank you for being here today, and thank you for your testimony. As you notice, everybody's listening very carefully to the things you have to say. I reviewed a study this morning that showed how important the American people see education as a life-long basis of our economic stability. But skyrocketing tuition rates are making it harder and harder for middle and lower income students to pursue the dream of a higher education. This is clearly a problem that Congress must address in some fashion this year, as we re-authorize the Higher Education Act.

Some believe the answer is increasing mandatory Federal spending on student aid programs by billions of dollars. Some feel that we're at about the correct level right now, but that we should make college costs and quality more transparent to give higher education consumers—the parents, the students—more information so that they can make better decisions in the higher education market place.

In nearly every other sector of the economy, the more transparency and useful information consumers get, the better decisions they make, and the more effective market forces are in improving quality. Do you think transparency and market forces could have the same effect on higher education institutions?

Mr. GREENSPAN. That's an interesting question, Congressman. Frankly, I haven't given it terribly much thought, but I must say I'm inclined to find your argument somewhat persuasive.

Mr. McKEON. Let me ask one other question. And that is, you testified recently in the House Budget Committee. I believe you made the comment that variable rates have been good for the American consumers. Probably with regard to home purchases, and the things that—the way the interest rates have gone down the last few years. One of the things we're considering in the re-authorization of the Higher Education Act is variable rates in re-payment of student loans. Would that, do you feel, also be of benefit to the students?

Mr. GREENSPAN. Well, Congressman, I think that the notion that I was in favor of adjustable-rate mortgages rather than the 30-year mortgage was the result of my speaking imprecisely. And actually, it was a speech. It wasn't at a Committee hearing. So, I think that adjustable-rate mortgages were a valuable addition, but the 30-year mortgage has been a crucially important issue in this country, which has enhanced home building.

To what extent do you have choice within student loans, or any other form of loan, I think is important. In other words, if there was a demand for a certain type of tradeoff between maturity interest rate and the payment schedule, I'd let the market determine what basically is the right type of structure for that.

Mr. McKEON. Clearly, the ability of our educational system to educate significant numbers of scientists and engineers, which you've addressed, will be critical to our overall ability not just to compete in today's high-tech economy, but to be innovative and create the industries of tomorrow. But our institutions are falling behind in this regard. A 2002 survey found that U.S. higher educational institutions only graduated one-sixth the number of graduates with science and engineering degrees as those in Asia. And even though we're about to see an overwhelming increase in college-age students, our traditional higher educational institutions are not prepared to handle these increased enrollments.

Given the nature of the problem, how important is it that we use other means and other educational innovations, such as distance learning and reducing the restrictions on for-profit institutions, to provide these students the education that they'll need to compete in the knowledge-driven economy of the future?

Mr. GREENSPAN. Congressman, I think that it's important that we flatten out the currently still gradually rising spread between college and advanced degree workers, if I may put it in those terms, and those with only a high school diploma. The only way to do that is to increase the supply, and any means that we have to increase the supply of highly skilled workers is to our advantage on two fronts. One, it obviously enables our economy to function far more efficiently. But it also brings down those premiums, which as I mentioned in my prepared remarks, are a significant factor in the concentration of income in this country.

So, I think that anything that we can do that either moves the skill levels from fourth grade through high school at a more effective pace, or find other ways to augment our learning ability through community colleges, through corporate universities, or even, as you say, Internet learning—anything that we can do to enhance the skill level of the American work force is crucial to our long-term development and the stability of our society.

Mr. MCKEON. Thank you very much. Mr. Kucinich.

Mr. KUCINICH. Thank you very much, Mr. Chairman. Mr. Chairman, any discussion of workers in a new economy should include a systems approach. And as Mr. Boehner's question to Chairman Greenspan and his response regarding moving students into the system clearly demonstrate, I'm going to focus my questions here on those who pass from the new economy work force to retirement.

Now, Chairman Greenspan, you testified before the Budget Committee that Congress should consider raising the age of retirement for full Social Security benefits. In 1982, you chaired the commission that also recommended raising the age of retirement. Congress did as you suggested back then, so there is reason for concern that Congress might be persuaded to listen to you now.

You recently justified raising the age of retirement from 67 to something higher by citing a rise in life expectancy. You proposed that there ought to be an adjustment, and this is a quote, "So that this ratio," and you were talking about life expectancy to the number of years the typical worker will receive Social Security, "stabilizes." But I would suggest this is not as fair as it would seem. Though the average life expectancy is indeed rising, the age at which American workers choose retirement is not rising.

As you surely know, about half of all people reaching 62 retire the month of, or month after their 62nd birthday. Nearly two thirds are retired by their 63rd birthday. They pay a price for retiring at 62. When people take early retirement, their monthly benefits are decreased to take account of the longer period of retirement over which they will receive benefits.

For example, for people who retire at age 62, their full retirement benefit age is 67, and their monthly benefits will be reduced by 30 percent. So the super majority of American workers choose to retire early, even though it means a reduction in their monthly benefits. Now, why do people do it? Well, the reasons are probably that people's bodies are worn out. Their backs and their joints and their muscles. They're not able to keep working, though advances in medical technology could keep them alive longer.

The key point, Mr. Greenspan, is that life expectancy does not reflect work life expectancy. In America today, the real retirement age is 62. Therefore, the real meaning of raising Social Security full retirement age is that it increases the magnitude of the reduction in Social Security benefits most Americans can expect to receive when they retire. Now, you now propose raising their Social Security retirement age further. Raising the retirement age to 70 will decrease the monthly benefits of a super majority of retirees by 40 percent.

I find nothing in the record to suggest that concern has been shown about the predictable effect of removing full benefits further and further away from a population that is not working longer, no matter that they're living longer. And the predictable effects, if I could say—our senior citizens are not going to be able to pay their mortgages or taxes on their house, or to pay rent, or to pay medical expenses, or pay food bills, clothing bills. And such a plan is cruel.

Now, Chairman Greenspan, what do you say to the majority of Americans who retire when they're 62 years of age, whose monthly Social Security benefit will be further reduced if Congress is persuaded to raise again the full retirement age, as you suggest? Do you say to them "You should be working, not claiming retirement?" Do you say "Since you choose to retire, you have voluntarily accepted lower income, and therefore should accept that you will have to make due with less? Split your pills even further, forego meals, or any of the other essentials of modern living?"

Do you say "You should have saved more when you were working, even though real wages have been stagnant, so people are borrowing, not saving, and the quarterly consumer debt is at a record high?" Do you say "Increasing the income of the wealthiest by making permanent the President's tax cuts is somehow better for the common good, including the majority of Americans who retire at 62, they're maintaining the monthly Social Security benefits of those majority retirees?" Or do you say "You know, it's not my concern?"

Now, here's the question. The new economy. There are pressures for early retirement. Now, are pressures for early retirement going to be increasing because skills are needed, and decreasing in the aging population, or are pressures for later retirement, let's say at age 70, going to be increasing because skills are increasing in an aging population?

Mr. GREENSPAN. Congressman, ideally, we should have solved the Social Security problem back in 1983, in the sense that at that particular time, the projections seemed to create sufficient revenues and a balance of benefits which would maintain the system in balance in perpetuity. It's fairly clear, more recently, that that's not going to be the case, and it's even more of the case by far, indeed, that we have difficulties with respect to Medicare.

The point that I was making a week or so ago was that we do not have enough in the way of real resources to meet the promises that we have already made. In other words, we will not, with regrettably a high degree of probability, not be able to fully meet the commitments that we have made to the next generation, the Baby Boomers, who are retiring. And it's my judgment that if indeed that is realistically the case, we have to construct a pattern in which the benefits that we do promise, we do, in fact, deliver, and not have these people all retire in very large numbers and find out that they were betrayed by government.

Mr. KUCINICH. Mr. Chairman, I just have one question, though, and that is that—are your statements based on your discussions with the Social Security Trustees, or have you ever asked for the actual actuaries' assessment, or analysis, to be released? Because what I understand is that your statements are based on an analysis offered by the trustees apart from the actuaries.

Mr. GREENSPAN. No, I would say that I'm merely repeating with respect—let me just phrase it from what I was saying to the nature of your question. The pointed issue is that we've got to make choices. And all of the choices, regrettably, are negative. We don't have the resources. And—

Mr. KUCINICH. Was the $87 billion in tax cuts a negative choice?

Mr. GREENSPAN. Let me just finish quickly.

The CHAIRMAN. The gentleman's time has expired.

Mr. GREENSPAN. The problem that I'm raising, with respect to the issue of tying the age of eligibility to longevity is an issue which has been discussed at great length by Social Security actuaries, technicians, economists, analysts. It's one of the many items that are on the agenda to bring the system back into balance. None of them are any good in that respect. They're all negative. That's one of the great difficulties that what this sort of problem is. I'm not saying I prefer it. I prefer otherwise. But we have to make some choices.

Mr. KUCINICH. Thank you, Mr. Chairman.

Chairman BOEHNER. The Chair recognizes the gentleman from South Carolina, Mr. DeMint.

Mr. DEMINT. Thank you, Mr. Chairman. Mr. Chairman, thank you for focusing the Nation on the competitiveness of our work force today. And as you have discussed, we have a very intense national debate going on at this time about our jobs, how to keep the ones we have, how to create the jobs of the future. The two sides seem to be giving us two choices. One is, do we hide from international competition with more trade barriers, or do we focus on how to make American businesses more competitive?

There are lots of issues, many of which you've discussed. Our tax code, our energy costs, our lawsuits, our health insurance, our regulations, that make it more difficult to do business in this country. But today, we're focusing on how to create a more skilled and competitive work force. And I frankly believe, waiting to post-secondary levels is waiting too late. We're losing too many kids, and we're not preparing them for the jobs of the future.

But my two-part question to you, Mr. Chairman—is trade the greatest threat to our jobs, or is it our education system? And in that context, do you believe we need to go beyond supporting education with our talk and our money to fundamentally changing our primary and secondary education system by teaching academics in the context of skills and careers?

Mr. GREENSPAN. I don't know the answer to that, Congressman. I think it's the crucial question for our education system. And while I've been exposed to a lot of people who are professionals in this area, I've never sensed a satisfactory solution to the type of problems that we see. And I trust that we'll continue to focus on this question, and find ways to enhance our capacity to develop the skills that are so crucial to this system.

Mr. DEMINT. Just back to the trade question, because those choices are being presented to us. Do we restrict trade and international competition, or you seem to be saying that the answer is not doing it that way, but to make us more competitive as a nation. I mean, is that the way I hear you?

Mr. GREENSPAN. What has made the American economy great is that we allow ourselves to be exposed to more competition than virtually anyone else in the world. And as a consequence of that, we have honed our skills to the point to raise our level of technology. And in that context, raised our standard of living, which would not have occurred if we were not exposed to globalization. As I indicated earlier, globalization is a very disruptive process. But at the end of the day, it creates major advances in standards of living, and all of the things that occur as a consequence of that.

So I am fearful that we will start to find competition too frenetic, and try to rein it in in some form or another. Indeed, we do try to do that. I think that's a mistake. We've got to find ways to reach forward, to recognize that the more competition we are exposed to, the more difficult it is for us. But at the end result, it forces us to go to a higher level of production, technology and advancement, which I think has been what has made this country great in all respects. And I think if we were to back away on the trade side, I think we would find much of the extraordinary gains that we have made in the post World War II period would start to fade.

Mr. DEMINT. I agree, and thank you, Mr. Chairman.

Chairman BOEHNER. The Chair recognizes the gentleman from New Jersey, Mr. Payne.

Mr. PAYNE. Thank you very much. Thank you, Mr. Greenspan for the opportunity that I have had to be on the Committee that you came before, and I think that your interest in education is very paramount. I'd just like to mention a few things that's going on right now. We hear that tax breaks are still on the table, and people want to make some of them permanent. We've heard the administration preach that it's your money, you can do better with it. Why should the government take it? And all that's good, and it sounds great, and I was the average person, yeah, why should I give my government all of this money?

However, in 2003, we had a military budget of about $360 billion. In March we had a $67 billion emergency. Again in October, another $87 billion emergency. About a $154 billion emergency on top of $360 billion basic budget. This year, the military budget is $420 billion without Afghanistan and Iraq included in it. We don't know what Iran and North Korea has in the back. So, this preaching about it's your money, keep it, government can't do—you could do more with it than we can, I think is really irresponsible, especially since, at the rate of last year's appropriations, we've spent almost $10 billion weekly on military and military-related activities. I think it's irresponsible to tell the American people you should keep it in your pocket.

Secondly, and I think we should have a strong defense, don't get me wrong. However, if we keep preaching that, and it'll all go to military spending, then there would be no discretionary funding. We're down to 4 percent now. The second question is, because of the deficits in the states, we're seeing state colleges, which are funded primarily through states and low tuition, having an explosion in their tuitions. Therefore, lower income kids who normally go to state colleges are certainly going to be hurt and make it unable to go to these schools in some instances.

And when we talk about education, Jonathan Kozar, who is an education person, talked about the digital divide, about two Americas. And when we talk about education, we're going to have to talk more about just teaching in the classroom, but how do we get computers to people, how do you have an environment that you can study in, how do you have adequate houses? So this education piece is a big, big piece.

So my question is, in times of national emergency, we've always had shared sacrifice. World War II rationing, etc. Food rationing, oil rationing, and so forth. If we continue to have these tax cuts while we are at war—the President said we're at war on terror—that is not shared sacrifice, because a privileged group is going to get the tax breaks.

And so, I wonder what is your opinion in light of our war that we're on at present—Bush says we are—on terror, and the increasing that we're going to have to spend. It's a half a trillion dollars last year, and it'll be a half a trillion dollars this year. Over $10 billion a week on military expenditures.

Secondly, the other quick question is, in "The Price of Loyalty" by Paul O'Neil, he said that he believed that 9/11 only had a small impact on the economy, and that the economy fully recovered thereafter. And I just wonder what is your assessment on that statement?

Mr. GREENSPAN. Well, it is certainly the case that the American economy proved extraordinarily resilient to the events surrounding 9/11. Indeed, to the events subsequent to that period. We had a very shallow recession. Indeed, that's one of the reasons why the recovery started so late. Because it had barely gone down very much. On the issue of how one distributes resources is at the core of a democratic society. And what I'm arguing strenuously for, is to get a budget process in place which facilitates the choices to be made by the Congress on issues, Mr. Payne, of exactly those that you raised.

There are differences. I mean, I happen to be concerned about the necessity of maintaining a tax structure which will enhance economic expansion, enhance the revenue base. But there are other opinions which could readily be important, and perhaps carry the day. But what I do think is important is to have a structure which enables that debate to go on in a manner in which a resolution is feasible, rather than people talking at cross purposes.

And that's why I thought Pay-go and the discretionary caps that we put in in the early 1990's facilitated those debates in a way which I frankly was quite surprised. And I think we need to go back to that, and until we put on the table all of the various claims on national revenues, against the actual revenues available, I think it's going to be an issue of all of us talking at cross purposes. And it is important to resolve the question that you are raising. And there is a difference in this country on that.

Chairman BOEHNER. The Chair recognizes the gentleman from Delaware, Chairman of the Education Reform Subcommittee, Mr. Castle.

Mr. CASTLE. Thank you, Mr. Chairman. Chairman Greenspan, I would like to focus on the connection between education, particularly K-12, and perhaps No Child Left Behind, although I realize you're not necessarily an expert on that. But you're an expert on a lot of things you're not supposed to an expert on, so who knows? You probably know more about it than most of us. And the economy today. My sense is that the economy, as you've suggested in your testimony and so often before another Committee—I'm on the Financial Services Committee—and otherwise publicly, that the economy has changed dramatically. And as you've indicated, it's probably going to change even more dramatically here in the next few years.

Education does not appear to have made the same changes. In my judgment, there's a direct corollary there. You need to up your education to meet what you have to do in the work place. And I'm not sure that we have really successfully done that here in America. You've cited before, and again today repeated, that we seem to do fairly well early on, and then there seems to be a drop-off at some point, perhaps from fourth grade on, in education in America. We in this Committee passed No Child Left Behind a couple of years ago, and that's out there now.

As I'm sure, undoubtedly, you have read, it's being questioned by some. Others say it's under-funded. Nobody really questions, I think, the goals of ultimately educating better. One aspect of that is that we divide these kids into groups and sub groups, including minority groups, English as a second language, children with disabilities, and in an effort go get them all up so the schools are no longer under review. A lot of educators are critical of that. They feel that the schools are put under too much scrutiny, we're teaching to the tests, these kids can't make it, or whatever it may be.

But within all those stories, I keep seeing that silver lining, which is the teachers and the educators are talking about what they're doing in order to get their kids ready, and so they can be able to eventually pass the tests and be able to do better. Which to me leads to greater economic productivity if we are able to do this.

Are we on the right track with respect to what we have done? I'm not asking you to opine necessarily on No Child Left Behind, but the whole concept of taking some dramatic gear shifting in terms of our educational system? Not in a way that would be punitive to anybody, but in a way that hopefully would be rewarding to the students, and giving them the opportunity to be able to compete in our economy. Do we need something of that nature, or can we just continue to go as we're going in an educational point of view?

Mr. GREENSPAN. Well, if you believe the statistics on educational excellence in this country versus those of other countries—and there is, I might add, some question about whether there are biases from one country to the other in the data. But the changes are so dramatic for the United States. Our fourth graders seem to be doing reasonably well. So it can't be that there's something inferior in the base that we're dealing with. It's already demonstrated to be effective.

So we do something which is not the same as a number of other countries. Most other countries seem to bring their skill levels of the younger educated people in the primary and secondary schools up at a faster pace than we do. Now, I don't know what they do to do that. I will say this, however, that in spite of the problems that we have, we still manage to make very effective use of the work force that we have, or we would not be experiencing the productivity gains that we currently have.

So there are other things involved other than education per se. And as I pointed out, the major issues are the rule of law under which we function. But obviously, we can't go on in a situation in which for our highest skilled jobs, the wage rates continue to rise much faster than the average.

Mr. PAYNE. But if I could just follow up quickly, because my time's going to run out. You at the end of your testimony talked about equal opportunity requires equal access to knowledge. And my sense is, in terms of that equal opportunity, that we need to do more to help those who perhaps need greater help. English as a Second Language, perhaps the Hispanic American population, the African American population, etc.

Not necessarily get them to the skill levels that are going to create the new jobs, but to be able to fill those jobs, it's very important. I think that we have a rising tide, here. Would you agree with that? I mean, I worry about our population and some of the unemployment questions which are here. But I worry about their skill levels to be able to get in there if we don't educate properly.

Mr. GREENSPAN. Well, I've not been able to fathom exactly what the causes of a lot of these particular problems are, but I do know that we not only need to raise the skills, but we have to increase them year in and year out. In other words, it's not a static standard that we're running against, because the conceptual composition of our GDP is continuing to increase, requiring ever higher skills to run the system.

So, I can't address your question directly, as I frankly don't—I'm more puzzled by the question. I've got the same problem that you seem to express. I don't know what the answer is. But I know what the answer has to be. And what it has to be is something that maintains a degree of expansion in skills which is as fast as the change in the conceptual content of our output.

Mr. PAYNE. Thank you.

Chairman BOEHNER. The Chair recognizes the gentle lady from Minnesota, Ms. McCollum.

Ms. MCCOLLUM. Thank you, Mr. Chair. We live in a global economy, and it's clear that the American higher education system is also part of this global economy. For example, we have tens of thousands of students from China and India being educated in American universities, and these students speak fluent English. They understand our culture, they graduate frequently—with advanced degrees, I might add—and they are immediately prepared to compete against the American worker at the highest levels in our country, or in theirs.

Yet our country does not possess a similar highly educated population that possesses both the technical skills, as well as the language and the cultural skills to compete in the world's largest emerging markets. China, India, or the Arab world. From a national security perspective, we've seen these challenges presented in our intelligence and in our defense communities in having Americans with technical skills, but lacking the language and the cultural skills to allow them to function effectively, even in Arabic-speaking countries.

Mr. Chairman, I know how important it is for this generation and the next generation of highly skilled Americans to also be able to speak Chinese, Spanish, or Arabic, while possessing the cultural skills to compete in this global market place. Or is the American-centered, mono-language work force going to be sufficient enough for our future? And I have another question.

I serve on the International Relations Committee, and human rights in China has recently been discussed. As you so well pointed out, foreign entities invest in the United States because we have a set of laws that protects their property rights. We know we have jobs moving to China in part because of cheap labor. But along with property rights in the United States, we have workers' rights.

Should we be asking for protections for workers' rights in the countries in which U.S. corporations are now taking our jobs? Does not this job gap in protecting workers' rights have a negative impact on the workers here in the United States? Thank you, Mr. Chair.

Mr. GREENSPAN. Congresswoman, first of all, on the—let me answer the last question first, if I may. Individual cultures create certain rights for people within a society, and it very clearly is the case that the higher the standard of living, the more rights exist in a society. I mean, for example, in those countries with—who are struggling on the edge of maintaining standards of living, we find that child labor is rampant. We find that types of labor standards are virtually non-existent, and they would argue that they can't afford them. In other words, they will starve if they don't have them.

I think the issue gets down to our putting standards out should be an issue not of economics, but of ethics and morality. In other words, we shouldn't be dealing with people who produce good with slave labor, or the equivalent. But, if we're substituting what we perceive to be a moral purpose, as really a change in name for what truly is protectionism, that we ought to avoid. And I think that I fully support what is a very—we are an ethical people, and I think we ought to essentially try to spread that around the world, but not use ethics as a guise for protectionism, which I fear, in too many instances, is really what it's all about. On the issue of multiple languages, it would clearly be the case—it would clearly be to our advantage if we had far greater language skills in this country.

I mean, you take a small little country like Switzerland. There's more multiple languages—which everyone speaks, and speaks exceptionally well—than anyplace in the United States. We have been parochial, and for most of our history, we have been remarkably self sufficient.

And what has happened is, that because of our extraordinary economic strength and military strength, English has become a major international language. So, the pressure for us to learn second languages has been much less than others. But at you point out, we're now seeing the consequences of that. There is a significant down side. I wouldn't call it economic, but it is a national security question. And I wish we had the capabilities that we don't have, and I fear that we are seeing certain consequences which we'd prefer are otherwise.

If we had far greater skills—far broader skills in languages—I think, other things equal, we'd be more effective. But, while it's important, there are other things which I think clearly are more important to this society.

Chairman BOEHNER. The Chair recognizes the gentleman from Oklahoma, Mr. Cole.

Mr. COLE. Thank you very much, Mr. Chairman. And Mr. Chairman, it's an enormous pleasure to have you here, to, frankly, educate us a little bit, and then hopefully through us, the American public.

Let me ask you, if I may. In the short time I've been here, I've seen very few public purposes for which we spend money that are not good public purposes. We may not spend the money as efficiently as we should, we may have some—certainly some waste, fraud and abuse, but the reality is, it's a good thing to defend the country, it's a good thing to educate your people, it's a good thing to fund some sort of social safety net so people have a decent living standard. We get very few bad public purposes. Most of our choices are difficult choices, because the purposes are good.

Is there some sort of standard that you would have as to the proportion of national income that should go for public purposes as opposed to private investment and private consumption, that's commensurate with good economic growth and sound policy?

Mr. GREENSPAN. Congressman, this is an issue which economists have been debating for a very long period of time. And the reason that the debate has become so vigorous is, it's very difficult to prove any particular level of income going to public purposes is optimum. And the reason is that, while one can make the theoretical case, and I would, that the more that you get to public purposes, the lower the standard of living. Because at the end of the day, central planning is the ultimate public purpose allocation. Central planning has been an utter disaster as an economic policy. As the Soviet Union demonstrated, indeed, when the Berlin Wall came down, the massive changes around the world away from that, were dramatic. So, at the extreme, we know that there is an upper limit. We also observe that there are certain countries—relatively smaller countries—which have managed to have very high proportions of their national income going to public purposes, and still maintain fairly high standards of living.

Others have not been able to do that. My own impression is that it's always best to try to get that number as low as you possibly can, because I do think history does, in large measure, support that maximum economic growth will come from maximum private participation—private competition, which is the real issue. But, there are always exceptions to this, and as a consequence, saying that a specific number is correct is very difficult to support.

Mr. COLE. I appreciate the broad perspective. Let me ask you this, just as a follow-up. I agree very much with the point that you've made, that we have over-promised, over-committed in a variety of ways. We'll have the debate in Congress over which ways and how much. But looking forward from where we're at now, if we have to, as we do, come to grips with this, would you come down in favor of adjusting the obligations and commitments, as difficult as that is, downward in some cases, or at least in some sort of different fashion, or changing the tax rates, and taking a larger proportion of the total income of the country and directing them toward sustaining the public purposes as we've defined them so far?

Mr. GREENSPAN. Well, Congressman, as I've testified elsewhere, the evidence, even though we can't get optimum rates of where we put taxation is if you continuously raise the tax rate, at some point you run into very significant diminishing returns and you will find that solving a problem of shortage of resources by increasing taxes at the end of the day has high risks associated with it, and so I argue that we ought to first focus on the excess of commitment over available long-term resources by seeing what we can do on the expenditure side first, before we revert to looking at using resources through increased taxation.

I don't deny that the size of the gap on what we have committed largely to retirees in the baby boom generation is quite significant and that it is unlikely to be fully closed from the spending side, because the commitments are so large, but I do think that if we start by first raising taxes and then starting to look to what we have to do on the expenditure side, I think it is going at it in the wrong direction.

Chairman BOEHNER. The Chair recognizes the gentleman from Ohio, my colleague, Mr. Ryan.

Mr. RYAN. Thank you, Mr. Chairman. Mr. Chairman, it's a pleasure to be here before you.

A couple of questions I'd like to ask.

One, first I represent a district in northeast Ohio which has just been devastated by the manufacturing issue that we have and part of the problem I think we are facing is that these people, they seem to be trapped into a cycle that they just can't get out of.

One of the issues that Ms. McCollum discussed is the labor standards in these agreements. Would you be willing to support in the CAFTA we are going to start debating labor standards?

Mr. GREENSPAN. Congressman, as I indicated to your colleague, labor standards truly based on American ethics is something we ought to adhere to but if it is actually protectionism disguised it is a mistake.

Mr. RYAN. If we did it on moral grounds, because as you talked about in your statement, which I thought was very eloquent, the strength of our system is what undergirds our economic system is justice and contract law.

I think it is equally as important for social justice issues too, especially in an era where we have most countries looking negatively on our country. So these social justice moral reasons, if we did it in that context, would you be willing to support it?

Mr. GREENSPAN. Well, I think that you can't impose American standards on other people. One of the things that we insist upon is that we are free and sovereign and I would presume our foreign policy presupposes that those with whom we deal are also free and sovereign.

To tell other countries that they must change their labor laws or change their health laws or whatever merely because we think it is better I think is clearly inappropriate.

If, however, we are dealing with the importation of goods for example made by slave labor, that to me is egregious and clearly something that we should not be doing, indeed the private sector should not be doing and it really shouldn't require a Federal statute to prevent that.

But in listening to most of the discussions on this issue, I have come to the conclusion, I hope incorrectly, that too much of it is an endeavor to put up barriers to imports into this country, which I think would be to our disadvantage.

Mr. RYAN. Can you explain to me, how is it different for us as we are negotiating these trade agreements to say to another country we don't want to impose our labor standards but aren't we, when we deal with intellectual property, aren't we asking them to play on their playing field?

Mr. GREENSPAN. No, we are in that regard talking about the issue of property rights, and with respect to the question of property rights, we are essentially saying to certain countries that some of your citizens are involved in theft, theft of our property, and with respect to those kinds of rights, say the law of contracts, those are the types of principles which we do engage in with respect to trade and should.

But to require that there be a change in the way societies are organized with whom we trade I do think is inappropriate.

Mr. RYAN. So there should be a different standard for property rights versus what we would consider human rights?

Mr. GREENSPAN. No, because we are not trading human rights. We are trading property. I mean if we were—I hope we trade in human rights. But remember, goods and services are property and therefore property rights are the relevant consideration.

Human rights are issues which I think very crucially come up when we are dealing with whether we recognize certain countries or not diplomatically, but remember, trade is an economic issue and trade refers to physical goods and services and trade cannot exist without laws of contract and without property rights.

Therefore, they are the appropriate mechanisms which we negotiate for. When we are dealing in other areas, for example, as I said, whether we recognize a certain country or deal with them, then human rights are a very critical and indeed for us to deal with countries without recognizing that they don't meet the standards that we have in this country I think that in dealing with them we must recognize that and deal accordingly.

Chairman BOEHNER. The Chair recognizes the gentlelady from Colorado, Ms. Musgrave.

Mrs. MUSGRAVE. Thank you, Chairman Boehner.

Chairman Greenspan, in your testimony you alluded to job loss to low wage China, and you talked about protectionism coming into play as a solution. As I listened to that testimony, you also talked about other nations retaliating for that, in effect a simple solution to a very complex problem.

Could you elaborate on what other nations would do in response and what the long-term effects would be of that?

Mr. GREENSPAN. Congresswoman, I think we have the very sad experience of the 1930's to give us the most vivid example of what happens when you begin to start a protectionist spiral.

We, as you are aware, introduced a fairly significant protectionist legislation in the late 1920's, and as the recession turned into a depression trade began to collapse as people pulled in their borders, created huge barriers to trade, and indeed exacerbated to the whole contraction of that period.

During the post-World War II period, based on the experience of the 1930's, the United States in the lead started with the Kennedy round, the early 1960's, and developed a major unraveling of trade barriers which had developed. As I indicated earlier, this has been a major factor in the advance in standards of living of all of the trading partners of ours and others.

We have run periodically into problems with respect to retaliation and fortunately we fended them off. We are currently now, as you know, involved in this export tax problem with Europe, and we have been involved in many occasions on difficulty in maintaining open trade, but by and large we have done remarkably well and what I am fearful of is that we will reverse that, in part because the trade negotiations over the years have largely made the major cuts that are immediately feasible in the sense we have picked the low-hanging trade agreement fruit and now we are getting into tougher and tougher areas of negotiation.

But I think it is crucially important for us to move forward because all the evidence that economists have been able to adduce strongly suggests that it's been a major factor in world economic growth and especially the growth of the United States.

Mrs. MUSGRAVE. Thank you, Mr. Chairman.

Chairman BOEHNER. The Chair recognizes the gentleman from Massachusetts, Mr. Tierney.

The Chair would announce that in cooperation with the Chairman, the Chairman needs to leave at noon, and so it looks like we have got time for another member on each side.

Mr. TIERNEY. I thank the Chairman. I thank you, Mr. Chairman, for your testimony here today.

I am going to ask some questions. I feel compelled to make somewhat of a statement.

I am glad to hear you say that it is appropriate for us to determine when we are recognizing a country whether or not they meet our ethical standards and things of that nature, but I think also it is entirely appropriate for us when we negotiate with a country in a direct bilateral manner or an international forum whether or not they are going to recognize human rights and whether or not they are in fact going to recognize international law and norms with respect to labor or sovereignty in particular with respect to our sovereignty when we are dealing with regulations.

I think that there has been some discussion back and forth here today with this being somewhat of a false choice between protectionism vs. innovation and I don't think that is the case here. I think many of us are talking about making sure that we move forward, but we move forward in fair trade.

Nobody wants to set up walls and barriers but everybody wants to move forward in an innovative way that creates some fairness and has a fair trade aspect to it.

Let me ask a question. While the United States is being exposed to competition on a regular basis and we are seeing quite a bit of dislocation, should we do something to ease the transition for those that are displaced?

I think you already gave us your opinion on the unemployment insurance extension and I appreciate that, but with respect to investing in education and training, you mentioned in your testimony the effect that the GI bill had. I would think that you might agree or tell me whether or not you agree that that type of an investment or concentration by us now in an effort of that magnitude, would that not be a fair thing to do for the people that are displaced as well as a good thing economically for the country moving forward on a competitive basis?

Mr. GREENSPAN. Well, Congressman, I do think that the issue of the transition is critical, and indeed the ideal transition really is one that takes the person who is laid off, irrespective of the cause, and delimits the timeframe in which that person is out of work.

What all my experience suggests is that it is education which basically enables a person to take certain skills that they had from their previous job and generalize what they know, especially given the education they have, to actually know how to function in a new job or even a new profession, and the timeframe—you want to narrow that as much as we can.

So education here is crucial.

Mr. TIERNEY. So that's a yes? You think that sort of a concentration would be a positive thing for us to do?

Mr. GREENSPAN. Yes. Now the problem that we have with, for example the G.I. Bill or the like is that we have talked this morning about enumerable things, all of which were positive to be done in our society, and it is hard to know whether the particular resources that would be involved, for example in the new G.I. Bill are better used for other things. I don't know the answer to that.

Mr. TIERNEY. I appreciate that, but we were talking about education and I just wanted to talk about the focus and the concentration, not necessarily a specific G.I. Bill, but the focus on education with that kind of intensity was what I was getting at.

Let me ask you this also. In health care for people who are displaced I would think that you might think that was important and we would do something to help their transition period with health care, but also the positive effect it would have on our employers' competitiveness if in this country we could resolve the universal health care issue, and get that so that we could move forward on that.

Would that be a fair statement?

Mr. GREENSPAN. I think the health care problem is a very critical one, in large part because of our ability to forecast what the expansion and the cost of health care is going to be, not only in Medicare but with respect to issues of impact on various companies, impact on the society as a whole is really very tenuous.

I think we have very little judgment as to where Medicare outlays are going to be in the years ahead.

The problem that we have with respect to medical costs as it was reflected in labor costs and business costs is an issue that goes back, as you all know, to World War II when we essentially had wage controls and we did not have controls on benefits and we created a third party payment system which is what we are living with today.

I don't know a simple answer to this problem.

Mr. TIERNEY. Last, we do know the long length of time that people have been unemployed and that is why I talk about the need to do things in healthcare as well as education and the unemployment insurance. But as respects jobs that are being replaced, the lost jobs were paying about $44,500 annually on average and the jobs that seem to be replacing those are said to by paying about $35,000 or 21 percent less on an annual basis than the ones we have lost.

Thirty states have fewer jobs than when the recession began. In Massachusetts I know that wages for jobs are—replacing jobs lost are about 41 percent less on that. So I have some concern.

When I looked at your testimony and listened to it again today you talked about the seemingly relentless pursuit of low product prices and high quality, features of the current, frenetically competitive economic structure. A sort of broad remark. I don't see people standing outside of Wal-Mart demanding in large number that they drive those places down at the expense of low paid employees with very little benefits, working part time and being shut in overnight so they can't even get out if they have a medical emergency.

I think it is more in line with shareholders, or at least the perception shareholders demanding more and more in their dividend returns. For those people that are left in that type of jobs, don't you think that it would help our economy as well as them if we had some policy in place that would ensure that those people were paid a decent amount of money and that they had decent benefits so that they in fact could become customers, and wouldn't that sort of trump the idea that if we are going to have to get products from overseas, as you said, but at least with respect to the jobs that are at home, shouldn't we be setting policies to protect them, make them meaningful and put certain protections in place?

Mr. GREENSPAN. Well, if you start to subsidize the levels of wages in particular areas I don't know where you stop. I mean I don't know what point you say you want to subsidize this company but not this company.

Mr. TIERNEY. Excuse me a second. I don't think I mentioned anything about subsidization. I thought there will policies that would stop them from driving to the bottom, the policies that might disincline companies to start paying less and less and less and part-time instead of full-time.

Mr. GREENSPAN. If you stop an individual company from doing it, other companies will do it, but what we will find—

Mr. TIERNEY. That's why I talked policy. We're talking about an individual company. I just used that for an example.

Mr. GREENSPAN. I think you will find that it is an extraordinarily difficult thing to do and indeed, frenetic as the competition is, remember, we as consumers are insisting upon high quality product at a low price.

Unless that changes, you are going to get people who are going to supply that, and if you don't get it supplied by American companies then we are going to get it supplied by other companies, companies outside the country.

I don't think there is actually a practical solution to the issue you are raising. I think it won't work.

Mr. TIERNEY. Mr. Chairman, I don't know how you are going to get people to set up a retail operation—

Chairman BOEHNER. The gentleman's time has expired.

Mr. TIERNEY. I thought I might get the courtesy of just following up on—

Chairman BOEHNER. I think I have given you the courtesy on three questions.

Mr. TIERNEY. Thank you, Mr. Chairman for your cooperation.

Chairman BOEHNER. Thank you. The Chair recognizes the gentleman from Michigan, Mr. Ehlers.

Mr. EHLERS. Thank you, Mr. Chairman. And Mr. Chairman, pleased to see you here. I think the last time you were here was when I invited you several years ago to talk about math and science education. It'll be no surprise to my colleagues or to you that I bring this up again. But following on the question that was just asked about the lower wage workers, it seems to me that the jobs of the future are going to require better training, because we're going to have the better jobs. We'll continue to ship the lower jobs, or the poorer jobs overseas.

And I just want to get your comments on that. It seems to me that one of the most important things we can do is to reform our K-12 educational system so that students have a basic understanding of the concepts of mathematics and science, so that they can more easily be trained for these higher-level jobs. Does this seem a reasonable approach to you, and do you have any other comments on that?

Mr. GREENSPAN. Well, there are always entry-level jobs in any economy. And entry-level jobs, by their nature, are low paying, require very marginal skills, and they're not meant to be permanent in the sense it's a long-term profession. And the purpose of education is to enable people to move from entry-level jobs up through the ladder as quickly as they can. And there's no alternative to teaching people. And I think one of the great advances in this country has been the extent to which we've created so-called corporate universities, and a whole level of internal company training, which goes on almost everywhere. More so than ever before. And how we do it, probably, is less important than that we do it.

I think we can do it far better than we are doing it in this country. But at least the pressures for us to recognize that we have to escalate the skills of our people are there, and I think that most companies, especially those in the areas at the cutting edges of technology, find that they have to do a very significant amount of training themselves to bring the people up to the level of technical skills that are required to actually staff the complex infrastructure that we have.

Mr. EHLERS. Now, it seems to me there are two aspects to it. One is the corporate university, or the company training programs. And I understand they spend about $26 billion a year at that, training for specific jobs. What I'm interested in is, what is our responsibility as a nation to provide the preliminary training, so that people are easily re-trained for these higher-level jobs?

Mr. GREENSPAN. Well, in your previous occupation, you were quite familiar with the nature of these problems, in that knowledge has to start off with abstract principles. You need basically to learn concepts—how to think in the abstract, before you can apply it to a specific application. And what we presumably are teaching in our secondary—primary and secondary schools are the basic tools by which younger people learn—learn to learn, I might say. That's why arithmetic, geometry, calculus, and hopefully differential equations and beyond are skills which people pick up in the abstract, and then can employ them in particular applications.

Our school systems should be judged on the basis by which they produce a generic learning that enables people to be in several professions, or jobs, through their life work. And if you get training which is too narrow in the beginning, without the abstract capabilities that one learns, or should learn, in primary and secondary schools, your future is limited. And I think it's so critical that we teach people how to learn.

Mr. EHLERS. Thank you very much, Mr. Chairman. I totally agree, and I yield back the balance of my time.

Chairman BOEHNER. Mr. Chairman, we want to thank you very much for taking several hours of your time to come in and to share with us your ideas about the knowledge economy, and for those Members that didn't have an opportunity to ask questions, if you and your staff would be willing to answer those questions, I'd very much appreciate them.

Mr. GREENSPAN. Thank you very much.

Chairman BOEHNER. Hit them long and straight. It was nice to see you.

I think we're going to proceed, and invite our next panel to come forward. The schedule on the floor is a bit uncertain. I think the best thing that the Committee could do would be just forge ahead.

It's my pleasure to welcome our second panel today, and I appreciate the second panel's willingness to be patient and cooperative. Our first witness in the second panel is John Castellani. Mr. Castellani, I'm sorry, is President of Business Roundtable, an association of Chief Executive Officers of leading U.S. corporation. Business Roundtable boasts a combined work force of more than 10 million employees in the United States, and $3.7 trillion in annual revenues. And Business Roundtable members are considered at the forefront of public policy, advocating for policies that foster a vigorous and dynamic global economy.

The second witness is Dr. Jared Bernstein. He's the senior economist at the Economic Policy Institute here in Washington. His areas of research include income and wage inequality, technology's impact on wages and employment, low wage labor markets and poverty, minimum wage analysis, and international comparisons. Glad that you're with us.

And our last witness is Mr. Robert Grady, Managing Director of the Technology and Business Services Industries for The Carlyle Group. Mr. Grady also serves as a member of the board of directors of the National Venture Capital Association, and is a lecturer in management at the Stanford Graduate School of Business. And finally, he's a member of the Advisory Committee on Trade and Policy Negotiations, to which he was appointed by President Bush.

With that, Mr. Castellani, you may begin.

STATEMENT OF JOHN J. CASTELLANI, PRESIDENT, BUSINESS ROUNDTABLE, WASHINGTON, DC

Mr. CASTELLANI. Thank you, Chairman Boehner, and Ranking Member Miller, and all the Members of the Committee. I am pleased to see the Chairman again. He honored us recently at our session on the No Child Left Behind Act, and we appreciate your leadership and that of Congressman Miller and this Committee on this vitally needed education reform, as well as the leadership of the bipartisan majority in Congress that passed the law, and continued to support its goals.

I am pleased to address the critical roles of education and innovation in our economy. American companies are already the world leaders in innovation in business. Their innovations produce opportunities to develop new markets for U.S. goods, services, and technologies around the world, which, in turn, helps our economy to grow and create jobs here at home. One of the keys to innovation is knowledge that empowers companies and workers to re-make themselves, so that they can meet new customer demands in the worldwide economy.

But if our workers are to have the knowledge that they'll need to continue to fuel innovation, we must improve the way we educate our young people and train our current work force. Fist, we must recognize that our worker training system is outdated. It was developed to help a static labor market adjust to cyclical business changes. But today, in fact, we have a dynamic labor market that must adjust to structural economic changes.

Across the Federal Government, there are a myriad of work force education and training programs, and streamlining these programs and making information more accessible to workers will, in our opinion, go a long way to improving their effectiveness. The Administration has proposed—their proposed community college initiative also holds promise for building partnerships between community colleges and employees with high-demand job sectors.

This kind of partnership has been the model, and has been the model in the past, and is the model for needed flexibility and response in a training system designed for the 21st Century. As for our system of K-12 education, millions of children receive an education that simply does not prepare them for success in college, or the work world. And that is why the CEOs at the Business Roundtable are a strong supporter of the No Child Left Behind Act.

The recent report of the American Diploma Project offers convincing proof that we must stay the course on the implementation of the Act. The report stated that the American high school diploma "often serves as little more than a certificate of attendance." The project found that 53 percent of college students must take at least one remedial English or math class. And it also found that more than 60 percent of employers surveyed rated graduate's skills in grammar, spelling, writing, and basic math as only fair or poor. No Child Left Behind will help us meet these challenges. It establishes a goal of proficiency in reading and math for all students, and gives the schools the help they need to get the job done.

There's no doubt that the goals of No Child Left Behind are difficult to achieve. But there is also no doubt that we must achieve them if we want to continue to have a growing economy and job opportunities. We believe that if we give America a school system that teaches all children to be proficient in reading and math, and prepared for college and the work place, and public policies that encourage growth and innovation, the success of our economy will be assured.

In the last century, most jobs in the American economy required only unskilled or semi-skilled labor. Today, the good jobs, professional or skilled jobs, and they represent 62 percent of all jobs in the years to come. Our economy is now, and in the future will be even more so, a knowledge-based economy. Now, recognizing this, U.S. companies invest more than $70 billion a year in job training. And let me give you a few examples of how Business Roundtable companies are investing in education and innovation.

Texas Instruments has announced its intention to build a $3 billion, 300 millimeter semi-conductor manufacturing facility in Richardson, Texas. TI looked at sites in the U.S. and abroad, and what clinched the deal for that site in Texas was how the state leaders worked with the company to create an economic development plan centered on research and development. Under the plan, the University of Texas at Dallas will receive up to $300 million to enhance its engineering and research programs to become a center for the basic research in North Texas.

United Technologies is also a company that wants to have the best-educated work force, as their Chairman and CEO George David says, "on the planet." Under its employee scholar program, United Technologies pays 100 percent of the costs for its employees to go back to school. And those who complete their degrees can receive an award in UTC stock of $5,000 to $10,000.

And last fall, the University of Memphis opened the FedEx Institute—a public-private collaboration to advance world-class interdisciplinary research, and introduce a new generation of highly skilled graduates to the work force. FedEx donated $5 million, and the Institute has forged relationships with many other companies and institutions, and it's becoming a real force in the Mid-South economy.

Now, these companies and many others have a positive vision on how education and innovation can help keep America competitive.

And unfortunately, there is a competing vision that's called isolationism. And it is difficult to imagine how the U.S. can become more prosperous by erecting barriers, or isolating itself from the worldwide economy. The Business Roundtable members believe that the right path to U.S. prosperity is to expand investment, promote trade, boost economic growth worldwide, and improve education and training.

And to achieve these goals, the Roundtable supports an active policy agenda in key areas. First, we believe that Federal and state tax policies should emphasize incentives to make the U.S. more attractive for investments and research so U.S. industries can continue to innovate and be world leaders. Second, the U.S. needs to negotiate and force commercially meaningful trade agreements, to open foreign markets that remain closed to us, or that give an advantage to our foreign competitors.

Third, we must spur other countries to adopt growth-oriented policies, and do their part to develop the worldwide economy. Fourth, education and training programs must include greater assistance to help unemployed workers, or employed workers, to upgrade their skills, and help those who lose their jobs due to domestic competition, foreign competition, new technology, or increasing productivity, to train for new jobs.

And finally, we must raise student achievement and interest in math, science, and engineering. If we do not, the talent pipeline for U.S. research and innovation is in jeopardy. The business community is committed to working with the government at every level, and with the American people, to seize the opportunities that the worldwide economy offers to keep our nation prosperous and strong. Thank you, Mr. Chairman.

[The prepared statement of Mr. Castellani follows:]

Statement of John J. Castellani, President, Business Roundtable, Washington, DC

Thank you, Chairman Boehner, Ranking Member Miller, and all the members of the committee for giving me the opportunity to testify today.

I want to begin by congratulating this committee for drawing attention to the critical roles of education and innovation in creating jobs and opportunity for all Americans. America is already the world leader in innovation in business. Our companies and workers are constantly evolving to meet new challenges. Their innovations produce opportunities to develop new markets for U.S. goods, services, and technology around the world, which in turn helps our economy to grow and create jobs here at home.

One of the keys to innovation is knowledge—knowledge that generates ideas and empowers companies and workers to remake themselves so that they can continue to lead and meet new customer demands in the worldwide economy. This means that America must have the strongest possible focus on the education and training of our current workers and our future workers who are now in our nation's schools.

America has the best, most productive workers in the world and many of the best public schools in the world. Our colleges and universities are the envy of other nations. But there is great concern that our systems of education and training are in need of serious repair. We must make these repairs if our workers are going to continue to have the knowledge they will need to fuel innovation.

First, we must recognize that our training system for workers was developed for an economy that no longer exists. It was intended to help a static labor market adjust to cyclical business changes. But for today and the foreseeable future, we have a dynamic labor market that must adjust to structural economic changes.

Across the federal government, there are more than 120 workforce education and training programs. Streamlining these programs and making information more accessible to workers will go a long way toward improving their effectiveness. The Administration's proposed Community College Initiative holds promise for building partnerships between community colleges and employers in high demand job sectors. This partnership is the kind of model needed in a flexible and responsive training system designed for the 21st century.

As for our system of K–12 education, millions of children continue to receive an education that simply does not prepare them for success in college or the work world. That is why the Business Roundtable is a strong supporter of the No Child Left Behind Act. It gives us the best chance to equip our young people with the knowledge they will need to succeed in a knowledge-based economy.

Why America needs No Child Left Behind

The recent report of the American Diploma Project offers convincing proof that we must stay the course on implementation of No Child Left Behind. Three distinguished education groups—Achieve, Inc., the Education Trust, and the Thomas B. Fordham Foundation—worked together to produce the report, which says, "For too many graduates, the American high school diploma signifies only a broken promise. While students and their parents may still believe that the diploma reflects adequate preparation for the intellectual demands of college or work, employers and postsecondary institutions know that it often serves as little more than a certificate of attendance."

The Project found that 53 percent of college students must take at least one remedial English or math class, with the percentage much higher for poor and minority students. It also found that most employers say high school graduates lack basic skills. More than 60 percent of employers surveyed rated graduates' skills in grammar, spelling, writing, and basic math as only "fair" or "poor." Another study estimated that the cost of remedial training in reading, writing, and math to a single state's employers was about $40 million a year.

No Child Left Behind will help us meet these challenges. It establishes a goal of proficiency in reading and math for all students, and gives schools the help they need to get the job done. It is improving teacher quality, giving parents more of the tools they need to help their children learn, and closing the achievement gaps that have held poor and minority students back.

There is no doubt that the goals of No Child Left Behind are difficult to achieve—but there is also no doubt that we must achieve them if we want to continue to have the best economy in the world. I will make this statement: Give America a school system that teaches all children to be proficient in reading and math and prepared for college and the workplace, and the future success of our economy will be assured.

America must have knowledgeable workers for a knowledge-based economy

The American Diploma Project demonstrates that America's students lack knowledge and skills at a time when the workplace requires a higher level of knowledge and skills than ever before. In the 20th century, most jobs in our country required unskilled or semi-skilled labor, and our nation could survive with high school dropout rates of 50, 60, 70 percent or more. But today the good jobs in our economy are professional or skilled jobs, requiring at least a high school diploma that represents real learning—not just attendance—and a significant additional amount of postsecondary education.

Perhaps a better way of saying it is this: In the 20th century, our economy was based on brawn, while in the 21st century it is based on brains. That is why a Business Roundtable report issued last year was so troubling. It showed that the true high school dropout rate in our country is about 25–30 percent—nearly three times higher than the 11 percent reported by the federal government.

Even the most entry-level jobs today require literacy and some proficiency in math. A good example is an apprentice training to become a machine operator at Eastman Chemical Company in Tennessee, a member company of the Business Roundtable. The apprentice must be able to solve multistep problems such as computing the concentration and density of a solution given the weight of each component—a task requiring solid mathematical skills.

The apprentices who must demonstrate these skills have learned an important lesson—our economy is knowledge-based. In the years ahead, high-wage professional and skilled jobs will constitute 62 percent of all jobs. Low-paid or low-skilled jobs will account for only 38 percent of jobs. Already, the most vulnerable workers are those with only a high school education or less. The average U.S. worker today with only a high school education makes the same real wage that the average worker made 25 years ago. But workers who are more educated are earning, on average, a wage premium of 77 percent more than a match group with fewer skills.

Companies are committed to education and training

Recognizing the need to help educate, train, and prepare workers for lifelong learning, U.S. companies invest more than $70 billion in job training, and the Conference Board has reported that 205 large U.S. corporations contributed $1.3 billion to education in 2002. Let me give you a few examples of how Business Roundtable companies are investing in education in order to remain innovative and competitive.

Texas Instruments (TI) has announced its intention to build a $3-billion, 300-millimeter semiconductor manufacturing facility in Richardson, TX, that will produce the world's most advanced semiconductors. TI looked at sites in the U.S. and abroad. What clinched the deal for Texas was how state leaders worked with TI to create an economic development plan centered on R&D. Under the plan, the University of Texas at Dallas will receive up to $300 million from the state and other sources to enhance its engineering and research programs. TI sees UT Dallas as a center that can help address the increasing need for basic research in North Texas and nurture a community of research excellence that can benefit the entire region. This is an example of a leading American company partnering with a leading institution of higher learning, and it reminds us of the importance of our four-year colleges in improving learning and supporting innovation in our economy. Community colleges play a crucial role as well, serving as worker-training centers in hundreds of communities across our nation.

United Technologies (UTC) is a company with an ambitious goal. Chairman and CEO George David has said, "Our goal is to have the best educated workforce on the planet." UTC believes that while no one can guarantee a job forever, it can ensure a future for all of its employees and the best way to do that is by giving them an education they can use for a lifetime. Under its Employee Scholar Program, one of the most comprehensive employer-sponsored education programs in world, UTC pays 100 percent of the costs for employees, both in the United States and internationally, who go back to school. That includes registration, tuition, fees and books—and all of it is paid up front. Employees can enroll in classes and obtain a degree in any field, whether or not it is job-related. Students can receive up to half of their classroom time as paid time off for studying—a maximum of three hours per week. UTC further rewards its employee scholars when they graduate. U.S.-based employees who complete a bachelor's or graduate degree are awarded $10,000 in UTC stock and those who receive an associate's degree are awarded $5,000 worth of stock.

Finally, let me tell you the story about the FedEx Institute of Technology. Last fall, the University of Memphis in Tennessee opened the Institute, which is a unique public-private collaboration designed to advance world-class interdisciplinary research and introduce a new generation of highly skilled graduates to the workforce. FedEx Corp. donated $5 million toward the new facilities. The company has more than 219,000 employees globally and expects the alliance will help develop a highly skilled recruitment pool. The Institute will house 10 research centers focusing on an array of studies ranging from medical breakthroughs in cancer and alcoholism to artificial intelligence and RFID (radio frequency identification) tags. The FedEx alliance helped the Institute to forge relationships with other high-profile companies, including AT&T, AutoZone, Avaya, BellSouth, Cisco Systems, Computer Associates, Dell, EDS, Landmark Graphics, Methodist Healthcare, Morgan Keegan & Company, Steelcase, and Time Warner, and with institutions such as the St. Jude's Children's Research Hospital, Oak Ridge National Laboratory, the Technology Resource Foundation, and the U.S. Department of Defense.

And those stories are just a few of the many important programs that Business Roundtable companies are undertaking to demonstrate their commitment to America's leadership in the worldwide economy. American companies make these investments because they understand that education and innovation are part of the same package. It will do us no good to have American businesses compete successfully in the worldwide marketplace and create good jobs here at home if there are no workers to fill them. And it will do us no good to have our schools and universities produce highly educated graduates if companies aren't creating jobs for those graduates to take. Jobs with no people, or people with no jobs will get us nowhere. Education and innovation will get us where we want to go.

That is one vision for how jobs and opportunity can be created in our country. There is another vision in our country, and it's called isolationism. Some say that economic isolation is the best way to protect American industries and workers. But it is difficult to imagine how the U. S. can become more prosperous by erecting barriers and isolating itself from a growing worldwide economy.

A pro-growth agenda

The Business Roundtable believes the right path to greater U.S. prosperity is to expand investment, promote trade, boost economic growth worldwide, and improve education and training. To achieve these goals, the Roundtable supports an active policy agenda that focuses on these key areas:

- Federal and state tax policies should emphasize incentives to make the U.S. more attractive for new investments and to undertake research so that U.S. industries can continue to innovate and be world leaders.
- The U.S. needs to negotiate and enforce commercially meaningful trade agreements to open foreign markets that remain closed to U.S. companies and workers or that give an advantage to our foreign competitors.
- We must spur other countries to adopt growth-oriented policies and do their part to develop the worldwide economy.
- Education and training programs must include greater assistance to help unemployed workers move to new jobs. The Business Roundtable recognizes that participation in the dynamic worldwide economy will lead to benefits for the overall U.S. economy, but will not always benefit every worker or business. Government and business, working together, must provide effective assistance to those who lose their jobs because of domestic competition, foreign competition, new technology, or increasing productivity.
- We must raise student achievement and interest in math, science, and engineering—the fields that will drive future innovation. New initiatives to attract talented young people to math and science teaching careers are especially needed. Without such emphasis, the talent pipeline for U.S. research and innovation is in jeopardy.

Our choice: Innovation or Isolation

When it comes to securing economic growth and good jobs for America's workers, America has a choice. I call it "Isolation or Innovation." The Business Roundtable does not favor isolation, and our research shows that the American people do not support it either.

We commissioned Voter Consumer Research to conduct a poll of Americans between January 7–11. There were 1,049 respondents for a margin of error of +/- 3 percent, and we found that the American people truly want to "work with the world" to strengthen the U.S. economy and the economies of all nations. The survey found that:

- 92 percent of Americans agree that isolating America from the world is not the answer to our economic problems, and that we should help American companies to compete in the world economy so that they can create new jobs and build economic strength in the U. S.
- 94 percent agree that American companies will create long-term growth and new American jobs if they can meet their customers' needs around the world.
- 73 percent favor encouraging American companies to re-make themselves so they can stay ahead of the curve, succeed in a worldwide economy, and create new jobs in the U.S., as opposed to only 24 percent who favor increasing government regulation on American companies that would make it more difficult for them to cut jobs in the U.S. and open up facilities in other countries.

The business community is committed to working with government at every level and with the American people to seize the great opportunities that the worldwide economy offers to keep our nation prosperous and strong. Thank you very much.

Chairman BOEHNER. Thank you, and Dr. Bernstein.

STATEMENT OF DR. JARED BERNSTEIN, SENIOR ECONOMIST, ECONOMIC POLICY INSTITUTE, WASHINGTON, DC

Dr. BERNSTEIN. I'd like to thank the Chairman for the opportunity to be here today in front of this Committee on this critical topic. Few would question the importance of maintaining and promoting a highly skilled labor force. It doesn't take expert testimony to remind us of the importance of education, not solely in terms of prosperity and international competition, but also because of the enumerable benefits to society, families, and individuals when each of us has the opportunity to realize our potential.

These assertions are so widely agreed upon by economists and policymakers, that there's little need to present corroborating evidence. Instead, my spoken testimony will focus on two critical questions. Is there any evidence that the lack of skill is responsible for our current employment problems? Can the unusually weak jobs recovery that we're experiencing be explained by the lack of skill or education in the American work force?

And second, while improving skills of our work force is always a good idea, is education the best policy solution for Congress to offer to the recent challenge posed by the so-called off-shoring of service-sector white-collar jobs?

The answer to the first question I posed is an unequivocal no. The weak jobs performance of the last few years is wholly a demand-side phenomenon. The problem is not the lack of skilled workers, it's the lack of jobs. There's no education or training-based solution that will help that problem, because it's a jobs deficit, not a skills deficit that's hurting the current labor market situation.

Now, the second question about off-shoring is more difficult to answer, given that there's much that remains unknown about the magnitude of this phenomenon. However, the fact that advances in computing and telecommunication have created new and far less costly access to the large supply—large global supply of skilled, relatively cheap labor, means that our skilled work force now faces a level of competition from abroad that has heretofore largely befallen our blue-collar work force.

What differentiates foreign workers from their domestic counterparts in this discussion is somewhat less a skills gap than a huge and gaping wage differential. By off-shoring skilled and semiskilled white-collar jobs, U.S. firms are sending a clear market signal that these off-shored workers are worth the investment made by American firms. Note that throughout this recent period, when these concerns have surface, firms in affected industries, such as information technology, financial services, have been able to maintain historically high rates of productivity and profitability, even while their domestic hiring has stalled or contracted.

Thus, while the extent of the phenomenon is unknown, it's highly likely to increase further, as will the intended anxiety it generates among domestic workers in affected sectors. The policy question is, can such workers, in our labor market, upgrade their skill sets to re-justify the large wage differentials that they currently enjoy? And the answer depends on how high the skill bar gets raised by off-shoring. But if, for example, our radiologists, our architects, our computer scientists are in need of skill upgrades, this may be setting the bar unrealistically high, and such workers could easily see their living standards decline.

Now, one central question for this analysis is whether the lack of skilled or highly educated workers is what's holding back the current job growth. And evidence for this claim comes from a set of indicators which profile the conditions of labor market facing college-educated graduates. My question is, does the evidence support a claim made by an executive in a recent "New York Times" report, for example, that the motivation behind the current wave of white-collar off-shoring was not solely lower cost, but also the lack of available, capable American workers.

Now, a good proxy for the extent of labor-market demand for any particular group is the share of that population employed. And I have a figure that I think is—there's a figure in my written—there it is. That figure shows the trend in the employment rates of college graduates over 25, and particularly of college graduates of age 25 to 35. In both cases, you can see the employment rates have fallen steeply over the past few years at the end of those series up there. And more so than in any other period in the figure, dating back to 1979.

Now, declines in employment rates can occur if older workers are retiring or leaving the labor market. But we certainly wouldn't expect this to be the case for younger college graduates, who have every reason to stay in the market, tapping their newly acquired skills. But as this figure shows, college graduates age 25 to 35 have employment rates that have tumbled far further than any other group of college graduates.

The next figure, figure three, actually, turns to the real hourly wages of young college graduates—those 25 to 35. After rising sharply through the mid-1980, the wages were flat over the next decade. The persistently weak labor market over the past few years has taken the momentum out of this series, reversed its course, and it has actually contracted over the past couple of years. These folks have been losing ground in real terms.

Now, while the magnitude of the off-shoring trend is immobile at this point, the anecdotes suggest that the trend has accelerated. A rare academic study of the issue shows that between 2000 and 2002, job loss was greater in occupations vulnerable to out-sourcing than in other sectors of our economy.

A more tractable question is to what extent the education and training is a viable solution for the off-shoring phenomenon. It's notable that this same solution was offered to manufacturing workers displaced by the increase in global trade, that has led to a very significant diminution in their job opportunities. Throughout the 1990's, these workers were told to train for expanding industries, such as IT, that were thought to be less exposed to global competition. But the fact that these service jobs can increasingly be outsourced provides a whole new set of challenges for the work force and the economy.

I'm trying to move to my summary, here. This supply shock of putting our skilled workers in direct competition with a large and growing skilled work force overseas threatens to significantly depress the earnings of skilled workers here who enjoy a very substantial wage advantage. Now, the education solution, then, amounts to an effort to increase our skills even further, to engage in ever-higher value-added work that can support existing wage differentials, even in a global market place, with far more skilled workers available than were ever before.

Now, the plausibility of this endeavor depends how high the bar is raised. Again, if we're going head-to-head regarding competition, radiology, software design and financial analysis, we are raising the education requirements bar to a level previously not contemplated in this debate.

Let me conclude by saying that my comments should by no means be taken to imply that our education system is problem-free, or that every student is given the opportunity to realize his or her potential. In fact, it's in this very area of the distribution of educational access and quality that clear and very serious problems exist. But this is quite a different conclusion than one which implicated the system as a whole is failing to meet the demands of work now and in the future.

I have a set of policy solutions that I would be happy to talk about during the course of our discussion, but let me just stress, in closing, that these are not on the supply or skill side. I think the evidence that I have discussed and showed suggest that we have a demand-side problem, and that's what we need to address. Thank you very much.

[The prepared statement of Dr. Bernstein follows:]

Statement of Dr. Jared Bernstein, Senior Economist, Economic Policy Institute, Washington, DC

Few would question the importance of maintaining and promoting a highly skilled labor force. It does not take expert testimony to remind us of the importance of education, not solely in terms of prosperity and international competition, but also because of the innumerable and immeasurable benefits to society, families, and individuals when each of us has the opportunity to realize our potential.

Congress has long appreciated the critical role of education in our society. One needs look no further than the formation of this very committee as a symbol of our determination to promote the critical goal of creating and promoting the most effective public policies to advance the role of education in our society and workforce.

These assertions are so widely agreed upon by economists and policy makers that there is little need to present corroborating evidence. Suffice it to say that the evidence overwhelmingly supports the contention that all else equal, a more highly educated workforce is far more productive than the alternative. Such a workforce is also far more likely to generate the productive innovations that have helped build our economy to its world-class stature.

Instead, this testimony will focus on three critical questions.

- Is there any evidence that the lack of skill is responsible for our current employment problems? Can the unusually weak jobs recovery be explained by the lack of skill or education of the American workforce?
- Is education the best policy solution for Congress to offer to the recent challenge posed by the so-called "offshoring" of service sector, white-collar jobs?
- Is there evidence of a longer-term skills mismatch? Should our primary strategy for ensuring that our economy follows a strong and equitable path be that of enhancing educational opportunities?

The answer to the first question is an unequivocal "no"—the weak jobs performance of the last few years is wholly a demand-side phenomenon. The problem is not the lack of skilled workers; it's the lack of jobs.

The second question is more difficult to answer, given that there is much that remains unknown about the magnitude of the offshoring phenomenon. However, the fact that advances in computing and telecommunication have created far less costly access to the large global supply of skilled, relatively cheap labor means that our skilled workforce now faces a level of competition from abroad that has heretofore largely befallen our blue-collar workforce.

Anecdotal reports reveal a pay gap between skilled workers in this country relative to those in offshoring targets in the neighborhood of 8 to 1. For example, the Bureau of Labor Statistics reports that a programmer in Silicon Valley, an area particularly vulnerable to the offshoring of tech jobs, earns about $78,000 annually, including benefits. According to PayScale, a compensation information firm, the comparable job in India pays around $8,000.[1] Other reports show pay gaps of a similar, or even large, magnitude.[2]

---

[1] These figures were report in the San Francisco Chronicle, March 7, pg. A1: "Offshoring's Giant Target: The Bay Area."

[2] For example, articles in the Financial Times from August 19, 2003, report on an Indian financial analysis firm called Office Tiger. The report shows an 8/1 ($96, 000/$12,000) pay differential between American and Indian financial analysts. Another comparison, also from the Financial Times, reveals a that US architects are paid about 10 times that of those in Vietnam.

What differentiates foreign workers from their domestic counterparts is thus less a skills gap than a huge wage differential. By offshoring skilled and semi-skilled white collar jobs, US firms are sending a clear market signal that these offshore workers are worth the investment made by American firms. Note that throughout this recent period when offshoring concerns have surfaced, firms in affected industries, such as information technology and financial services, have been able to maintain historically high rates of productivity and profitability even while domestic hiring has stalled or fallen. Thus, while the extent of the phenomenon is unknown, it is highly likely to increase further, as will the attendant anxiety it generates among domestic workers in affected sectors.

The policy question is: can such workers upgrade their skill sets to re-justify the large wage differentials that they currently enjoy? The answer depends on how high the "skill bar" gets raised by offshoring. If, for example, our radiologists, architects, and computer scientists are in need of skill upgrades, the bar may be set unrealistically high, and such workers could easily see their living standards decline.

The answer to the third question—is there a skill mismatch between the jobs we're creating and the labor force coming out of our schools—is also difficult to pin down. The conventional wisdom, such as that expressed by Federal Reserve Chairman Alan Greenspan in a recent speech, is that this is the case.[3] But a closer look suggests that the case is not nearly so airtight.

Historically, our education system has generally provided an adequate supply of skilled workers to meet employers skill demands, and lately, the supply of skill, along with its productive capacity, has accelerated. In fact, the knowledge of our skilled workforce in tandem with capital investment and technological innovation appear to have given rise to a new golden era of accelerated productivity growth.

This may be a particularly surprising finding given the well-known growth in the skill premium, or relative wage, of college educated workers. The rise in their pay relative to that of less educated workers has been taken as prima facie evidence that skill demands have been unmet in recent years, but for reasons discussed below, this variable offers only partial evidence of unmet skill demands.

I thus conclude that:

- our current, short-term labor market difficulties are by no means skill-related. Though the recession is behind us, we continue to suffer a protracted contraction of demand for labor.
- The practice of American firms outsourcing white-collar jobs to other countries poses a potentially huge new challenge for our labor force. While upgrading the skill sets of our workers relative to those offered by our trading partners may well be the way forward, given the height to which such a strategy raises the education bar, it may not be a very realistic policy solution.
- While it is widely accepted that our schools produce workers whose skills are not adequate to employers' demands, the evidence for this contention is not strong. In fact, recent accelerated trends in American skill supply and productivity would suggest that no such mismatch exists.

These conclusions should not, however, lead us toward complacency; our education system is by no means working perfectly. In fact, there are significant problems, especially in our K–12 system of public education, but these are largely distributional. Despite the fact that access to quality education is a basic American value, such access does not now exist for too many low income families in disadvantaged communities.

The Short Run: The Problem is Demand, Not Skills

As is by now well known, we are in the midst of the worse jobs recovery on record, since the Bureau of Labor Statistics began tracking the nation's payrolls in 1939.[4] Despite the fact that we are 27 months into a new recovery, the level of employment remains 2.4 million jobs down from the end of the last business cycle peak in March of 2001. Never before has it taken as this long to regain the jobs lost in a recession. Even in the last jobless recovery of the early 1990s, by this time employment had

[3] Remarks by Chairman Alan Greenspan, The Critical role of education in the nation's economy. Omaha, Nebraska, February 20, 2004.

[4] It is often pointed out that the BLS Household Survey shows better job growth than the payroll survey over this period. However, numerous experts, including the Congressional Budget Office, the Commissioner of BLS, and Federal Reserve Chairman Alan Greenspan have stated that the payroll survey is a more reliable measure of employment in the current period. However, it is also the case that the current recovery is the worst on record for employment from the Household Survey as well. See Gould, 2004 for a discussion of these issues.

surpassed its prior peak by almost 900,000 jobs and we were adding over 200,000 jobs per month on average. The comparable figure today is 60,000.[5]

Economists have tried to explain the persistence of such a weak jobs recovery, particularly in the context of what has been fairly strong overall economic growth in recent quarters. While it is beyond the scope of this testimony to go into the details of these explanations, the prime candidate is faster productivity growth. As we at EPI have noted, this explanation is only partly convincing, given that productivity usually accelerates coming out of a recession (though more so this time). We offer other explanations, including employers' increased reluctance to engage in permanent hires.[6]

However, the question for this analysis is whether the lack of skilled or highly educated workers is what's holding back job growth. Here, the evidence clearly points to "no"—it is lack of jobs, not lack of skilled personnel. The problem is on the demand, not the supply side.

Evidence for this claim comes from a set of indicators which profile the conditions of the labor market facing college-educated workers. Along with the overall group of college graduates, I also provide analysis of younger grads—age 25–35—as these workers offer the most direct evidence of the ability of our current labor market to absorb those workers with newly minted skill sets.

The object of this analysis is to see if there is evidence of a skill shortage in the current labor market. For example, does the evidence support a claim made by an executive in a recent New York Times report, that the motivation behind the current wave of white-collar offshoring was not solely costs, but also the lack of available, capable American workers?[7]

A good proxy for the extent of labor market demand for a particular group of workers is the share of that population employed. Figure 1 shows the trend in employment rates of all college graduates over 25 and young college graduates, age 25–35. In both cases, employment rates have fallen more steeply over the past few years than in any other period in the figure, dating back to 1979. By this measure, demand for skilled workers faltered in the recession of 2001 and has yet to recover.

Declines in employment rates can occur if older workers retiring or leaving the labor market for non-economic reasons. However, we would certainly not expect this to be the case among younger college graduates, who have every reason to stay in the market, tapping their newly acquired skills. In fact, as the figure shows, college graduates age 25–35 have employment rates that exceed those of overall college grads by about eight percentage points. As the top line in Figure 1 reveals, their employment rates have tumbled even further than those of all college grads.

Figure 2 uses some of these same data on young college graduates to construct a comparison over three roughly similar periods in the business cycle, going from an economic peak to three years later. The figure reveals an important difference in the current period, as employment rates of young college grads are considerably further below their recent peak in this recovery than in the prior two. Clearly, this most recent period has been one of uniquely weak labor demand for workers with newly minted skills.

Figure 3 turns to the real hourly wages of young college graduates, those 25–35. Note that after rising about 10% through the mid–1980s, their wages were flat for the next ten years, before rising sharply in the tight labor market of the latter 1990s. However, the persistently weak labor market since 2001 took the momentum out of the series, and it reversed course in 2002 and 2003.

The lack of demand for these workers grows directly out of the lack of job creation in fields that disproportionately employ them. A salient example is information technology, a sector where many young college graduates found employment over the last decade, and a sector that is also relevant to the offshoring debate. As shown in Figure 4, net jobs losses since 2001 been particularly steep.

These results—net job losses, falling employment rates, along with a reversal of wage growth—strongly point to weak demand for our existing stock of college graduates, a stock that, of course, continues to expand. The data strongly contradict a skill supply-constraint interpretation.

---

[5] This is the average number of jobs added per month since September 2003, when payroll employment began to grow.

[6] This issues are presented in a New York Times article, "New Patterns Restrict Hiring,' by Louis Uchitelle, March 6, 2004.

[7] See "Chief Executives' Survey Fuels Hopes of Hiring" by David Leonhardt, New York Times, March 4, 2004.

Offshoring and Skill Supply: Will the Skills Bar Be Raised Unrealistically High?

As is now widely appreciated, technological advances in computing and telecommunications have combined to enable American firms from our service sector to increase the pace of outsourcing production tasks to other countries. A particular concern is the so-called "offshoring" of white-collar, skilled jobs, placing our advanced workers in direct competition with those who will do similar work for far lower wages.

While the magnitude of this trend in unknowable at this point in time, anecdotal accounts strongly suggest the trend has recently accelerated. A rare academic study of the issue showed that between 2000 and 2002, job loss was greater in occupations vulnerable to offshoring, however, some of these losses—such as those in IT—are clearly related to weak cyclical factors in our economy.[8]

At any rate, given the difficulties in the current labor market for highly educated workers, it is reasonable to ask if these two trends are related. Is increased outsourcing of white-collar jobs partly responsible for the weak job market for college graduates, along with the very slow employment gains in industries such as IT?

Again, since the extent of offshoring white-collar jobs is not known, we cannot provide a conclusive answer to the question of its role in the weak recovery. One media account suggests that 10% of the over two million net job loss since the recession might be attributable to offshoring, and while this is pure guesswork, it is not implausible, though it may represent an upper bound.[9]

Certainly, circumstantial evidence exists. Job creation has been particularly weak in sectors associated with white-collar offshoring, most prominently, information technology. The lack of net job creation in that industry has been striking, as shown in Figure 4. In fact, while the manufacturing industry is characteristically cited as the weakest sector over the past few years, in percentage terms, employment losses in IT services[10] outpaced those in manufacturing since the recovery began in November of 2001. IT fell by 16% over this period, compared to 10% for manufacturing. Also, the fact that the timing of the above-noted difficulties faced by college-educated workers corresponds to what appears to be an acceleration of the offshoring trend has led many observers to "connect the dots" between these phenomena.

A more tractable question is: to what extent is education and training a viable solution for the problem of offshoring white-collar employment, regardless of its magnitude? It is notable that this same solution was and is offered to manufacturing workers displaced by the increase in global trade that has in part led to a very significant diminution in blue-collar jobs over the past decade.[11] Throughout the 1990s, these workers were told to train for expanding industries, such as IT, that were thought to be less exposed to global competition. The fact that such service jobs can increasingly be outsourced provides a whole new set of challenges to our workforce and our economy.

Still, the recommendation to displaced blue-collar workers to learn new skills commensurate with the evolving economy made sense for two reasons. First, it suggested labor movement from a contracting sector—manufacturing—to an expanding one: services. Second, it reasonably suggested that displaced blue-collar workers needed a new skill set for jobs in services that most often had quite different requirements than factory work.

But does this policy solution also make sense vis-a-vis the challenges posed by offshoring of service employment?

With global competition in manufacturing, our less-skilled workers were placed in competition with less skilled workers from countries with far lower earnings and similar value added. Our comparative advantage, it was argued, was both our large relative stock of skilled workers, and our greater ability—relative to our competitors—to produce an increasing flow of such workers. However, some less developed countries have been sharply increasing their own supply of skilled workers, meaning that offshoring has the potential to vastly increase the global supply of skilled labor, eroding our comparative advantage both in terms of stock and flow.

Comparing data from our education statistics and to a recent report from an Indian IT association provides an instructive example. India is adding about twice as many college graduates to its workforce per year as we are (1.2 million in the US

[8] Bardhan, Ashok and Cynthia Kroll, UC Berkeley Offshoring Study.
[9] Time Magazine, "Is Your Job Going Abroad?" March 1, 2004.
[10] Defined here as internet publishing, telecom, and internet service providers.
[11] EPI manuf doc

versus 2.5 million in India).[12] Of these Indian graduates, over 250,000 were "engineering degree and diploma holders" in 2002 compared to 70,000 bachelor's degrees in engineering awarded here. What's more, the 2003 entering class for Indian engineers is reported to be 375,000, a large jump suggesting that the Indian population is responding to the market signal of forthcoming global demand in this field.

This supply shock threatens to significantly depress the earnings of skilled workers here, who enjoy a very substantial wage advantage over workers with similar skills in less-developed economies. Anecdotal reports reveal that the pay gap between skilled workers here and those in offshoring target countries is in the neighborhood of 8 to 1. For example, the BLS reports that a programmer in Silicon Valley, an area particularly vulnerable to offshoring of tech jobs, earns about $78,000 annually, including benefits. According to PayScale, a compensation information firm, the comparable job in India pays around $8,000.[13] Office Tiger, an Indian financial services firm, also reports an 8/1 ($96, 000/$12,000) pay differential between American and Indian financial analysts. Another comparison, from the Financial Times, reveals a that US architects are paid about 10 times that of those in Vietnam (about $60,000/$600 per year).

Employers have argued correctly that the costs associated with outsourcing, such as language differences and lack of personal contact, reduce the labor-costs savings generated by this large gap. But by stepping up their outsourcing activities, they are sending a clear market signal that these skilled workers abroad are a better value than those whom they are replacing at home.

The education solution then amounts to an effort to increase our skills even further, to engage in ever-higher value added work that can support existing wage differentials even in a global job market with far more skilled workers available than were available to American firms just a few short years ago.

The plausibility of this endeavor depends essentially on how high the bar is raised. If, for example, as has been reported, our hospitals and tech firms outsource radiology and programming jobs to low wage counties, are we to assume that radiologists need a better skill set? Such reasoning has an undeniable logic until we realize these persons are already among the most highly educated in our country, if not the world. To contemplate the notion that they need to re-skill raises the education-requirements' bar to a level far above that which we've ever contemplated in this debate.

An important piece of information in this regard is how high up the skills' chain do these offshored jobs reach. The evidence, largely anecdotal at this point, is mixed, with reports of both low- and hi-tech jobs being outsourced. While the offshoring of lower wage/skill, back-office operations, such as billing, claims' filing, and tech support, has been widely reported, anecdotes abound regarding higher-end jobs, from Ph.D. level financial analysts to architects, radiologists, and software engineers.[14]

Over the Longer Term Are We Producing Too Few Skilled Workers?

No serious analyst could question the value and importance of a skilled workforce. Years of economic research has established that an increasing supply of skilled workers is a critical input into production, leading to higher productivity growth and better living standards throughout the economy. In addition, the great innovations that have helped to establish our world-class economy are clearly linked to the quality of our workforce.

Yet, many critics of the American education system, particularly K–12 public schooling, argue that we fail to produce enough skilled workers to meet employers' demands. For many labor economists, the most convincing evidence of this claim is the fact that over the past few decades, at the same time the share of college graduates in the labor force was increasing, the ratio of their earnings to those of less-educated workers also grew. If demands for skills were adequately met, so this argument goes, percentage wage gains should have been roughly equal between college grads and less educated workers.

However, there are a number of reasons to question the too-readily accepted notion of a skills mismatch in our labor market, either now or in the future. These counterarguments are discussed at length in various papers cited below, and are only briefly presented here.

---

[12] See "The IT Industry in India," report by the National Association of Software and Service Companies (NASSCOM), 2004.

[13] These figures were report in the San Francisco Chronicle, March 7, pg. A1: "Offshoring's Giant Target: The Bay Area."

[14] See above Financial Times references to financial analysts at the Indian firm, Office Tiger, and to architects. Anecdotes of outsourcing programmers jobs are from the SF Chronicle article cited above.

- There are other explanations for the increase in the college wage premium. As discussed in Mishel et al, 2002, the rise in the college premium has been partly driven by shift in economic structures that have served to lower the wages of less educated workers, such as the loss of manufacturing jobs, fewer unions, lower minimum wages, and, excepting the latter 1990s, high average unemployment rates. Regarding this last point, note that the skill premium grew much less quickly in the 1990s as in the 1980s, despite the fact that the latter decade arguably should have seen greater skill demands due to the accelerated dispersion of technology. But tight labor markets—a demand side factor—led to faster wage growth for the less skilled.
- Contrary to the skills'-deficit argument, the real wages of college graduates have not been consistently bid up. Refer back to Figure 3 and note that for about 10 years, from the latter 1980s through the mid–1990s, the real wages of young college graduates were flat. Their premium may have been rising over this period, but as just noted this was partly due to the structurally-induced decline in wages of less-educated workers. Presumably, a true skills shortage should lead to rising absolute wage levels, not simply relative wage gains.
- Occupational employment shifts show steady, not accelerating growth of skill demands. It is critical to note that skill demands have always risen over time and will continue to do so. However, the "skills mismatch" claim argues that the rate of skill demands has increased. In Bernstein and Mishel (2001), we present an index of occupational skill demands and show that it has proceeded at a steady pace over the past 25 years.
- BLS occupational projections do not imply an acceleration of skill demands in the future. Recent projections of job growth by occupation do not paint a picture of difficult-to-meet skill demands. While most of the fastest growing occupations call for at least a college degree, these occupations are growing from a low base and are thus not contributing the most jobs to the future economy. Conversely, of the 30 occupations adding the most jobs over the next decade, only eight call for a college degree. These occupations are expected to add 12.6 million jobs over the next decade, and only 30% are expected to require at least a college degree.
- At the same time, the quality of our labor supply has increased significantly. We have doubled the share of college educated workers, including those with advance degrees, from 14.6% in 1973 to 29.1% in 2003. Conversely, we have cut the share of high-school dropouts from 28.5% in 1973 to 10.6% in 2003.
- Our workforce has become more productive over time. This often overlooked point poses a serious challenge to the skills-mismatch position and is discussed in more detail.

Not that not only has the quality of the US labor force increased over time, but the growth rate of labor quality has accelerated. Figure 5 plots two indexes of labor hours from the BLS's productivity accounts. One series is the usual hours series from the labor productivity accounts, and the other is adjusted for skill primarily education and experience from the multifactor productivity accounts. Note that the two series grow at the same rate until the late 1970s, implying that the quality of labor was growing no faster than hours worked and thus was not an accelerating factor in the growth of labor productivity. Post–1979 however, the quality adjusted hours index grew about 0.5% per year faster than the unadjusted index, implying that labor productivity growth was receiving an added boost from the improved education and experience of our workforce.

This final point, in tandem with recent dramatic productivity gains achieved by our workforce poses a challenge to the skills-mismatch argument. Along with rising wage differentials, it is common for proponents of the argument to present test score data showing our students performing poorly relative to those in other countries. While such findings are surely worthy of concern, a better outcome measure is simply the productivity of our workforce.

By this measure, we are performing quite well in historical terms. Trend productivity growth accelerated by about 1% per year in the latter half of the 1990s—from 1.5% to 2.5% per year—and has accelerated about another 0.5% since then (though many experts suspect that this added boost is less sustainable). Contrary to a skills deficit story, the acceleration of this most important economic indicator suggests that the knowledge of our skilled workforce in tandem with capital investment and technological innovation appear to have given rise to a new golden era of accelerated productivity growth.

Conclusion

This latter discussion should by no means be taken to imply that our education system is problem-free, or that every student is given the opportunity to realize his or her potential. In fact, it is in this arena of the distribution of educational access and quality that clear and very serious problems exist. The goal of ensuring access to a quality education for all continues to elude us as a nation. Realizing this goal must be a central purpose of education policy.

But this is quite a different conclusion than one which implicates the system as a whole in failing to meet the demands of work now and in the future. As I have argued, there is simply no credible argument that our short term labor market weakness is skills-related. The problems right now are on the demand side, specifically lack of job creation. In fact, the share of non-employed college graduates is at a 25 year high, suggesting ample supply of skill in the short run.

In the medium term, the offshoring of white-collar jobs poses a serious threat to our skilled work force. While evidence is sketchy regarding the extent of the phenomenon, it seems quite clear that technological advances have lowered the transaction costs of bringing potentially millions of skilled workers from low-wage countries into the global labor market. More to the point, many of these workers appear to have comparable skills to our own and will work for compensation that is 1/8 or even less of domestic workers' compensation.

An education solution to this problem suggests that our skilled workers need to upgrade their skill sets further to "re-justify" the existing compensation gaps. But given the fact that some of our workers affected by offshoring are among the most skilled in the country, if not the world, this solution may not be realistic.

Thus, we must focus not only on the supply-side as in skill-based policies, but must also consider policy solutions for creating jobs in the United States and keeping existing jobs here. Examples of legislation that might help in the short-run include: changing government procurement policies to prohibit contracts from being performed overseas unless necessary, eliminating tax deferral of profits earned abroad, and closing other tax loopholes that encourage, and even subsidize, companies to ship jobs overseas. Funding government-sponsored infrastructure, such as the Transportation Bill currently under discussion, has the potential to directly create employment, and increasing our investment in research and development will further promote the technological innovations that have been so critical to advancing our economy and providing new opportunities for our highly-educated workers.

Ideas have been raised to slow the pace of offshoring by raising the costs to firms who engage in the practice. A tax on firms that offshore could yield revenues that could be dedicated to income support, education, and health care of the workers who have lost their jobs overseas. Such a proposal carries a twofold purpose: it lowers the incentive by placing a tax on the savings generated by the pay gap that US firms are tapping, and it provides benefits to displaced workers. However, in order to levy such a tax, we would need to identify both the extent to which firms are outsourcing US jobs, and workers that were affected. This identification could prove to be extremely burdensome (e.g., while some workers might be able to show they lost there job to offshoring, others, such as those who never got hired for an domestic job opening that went overseas, would have no way of knowing). A simpler approach would be a broader tax on any service imports, with revenues dedicated to providing a better safety net and training resources for unemployed workers.

Though I have argued against the existence of a widespread skills mismatch in our labor market, there are many who could readily benefit from education and job training. It is notable and distressing in this regard that the Administration's fiscal year 05 Budget does not make existing education and training programs a priority, but instead proposes significant cuts in their funding.

In the spirit of today's testimony, not only should Congress increase funding for existing programs, it should expand these programs—such as extending the Trade Adjustment Assistance Act (TAA) to cover service workers, providing more generous tax credits for health care premiums under TAA, and extend unemployment insurance benefits for the long-term unemployed who have exhausted their regular state benefits. This latter idea is particularly relevant given that the weak pace of job creation in the current labor market has led to 20-year highs in the share of unemployed workers jobless for at least half-a-year (22.9% last month).

Finally, the problems of the economy and outsourcing of jobs do not take place in a vacuum, but are intricately linked to other social issues. Long-term policy avenues should also be considered, such as improving access to the health care system to both keep employers' costs down and to ensure that laid off workers maintain health insurance, ensuring that all trade agreements have adequate and enforceable labor and environmental protections built into the core of the agreement, and coordinating multinational efforts to devalue the dollar against Asian currencies to boost exports and regulate the United States' trade imbalance.

Bibliography

Bernstein, Jared and Lawrence Mishel . 2001. “Seven reasons for skepticism about the technology story of U. S. wage inequality.” In Berg, Ivar and Kalleberg, Arne. I. eds. Sourcebook of Labor Markets: Evolving Structures and Processes. New York, New York: Kluwer Academic/ Plenum Publishers.

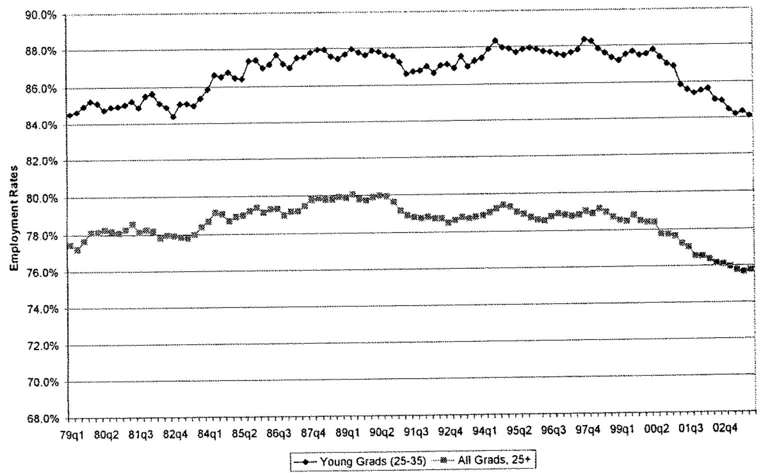
Gould, Elise. 2004. “Different sets of employment numbers tell the same story: slow job growth.” Economic Snapshots. Economic Policy Institute. <http://www.epinet.org/content.cfm/webfeatures—snapshots—archive—02252004>

Gould, Elise. 2003.“Measuring employment since the recovery: a comparison of the household and payroll surveys.” Economic Policy Institute. <http://www.epinet.org/briefingpapers/148/bp148.pdf>

Mishel, Lawrence, Jared Bernstein, Heather Boushey. 2003. The State of Working America, 2002/ 2003. Ithaca, New York: Cornell University Press.

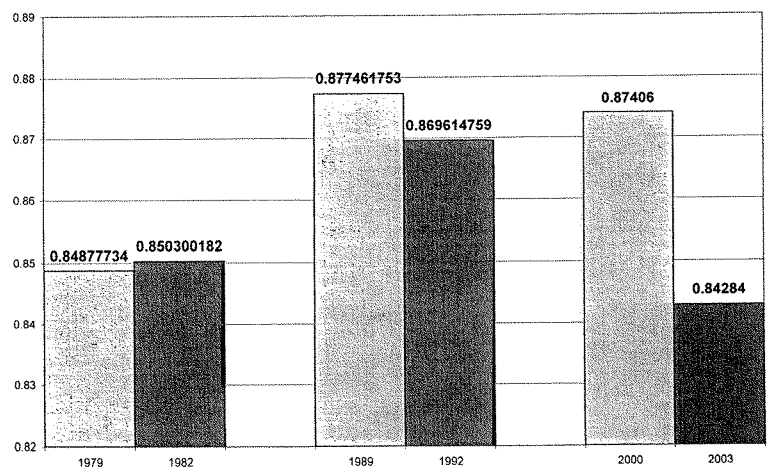
[Attachments to Dr. Bernstein’s statement follow:]

Figure 1: Employment Rates, College Graduates, 1979-2003



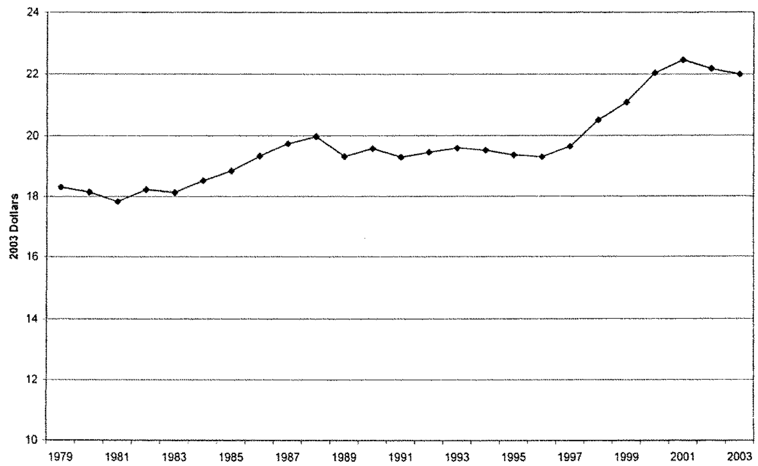
Source: Author's analysis of Current Population Survey data.

Figure 2: Employment Rates, Young College Graduates, Three Downturns



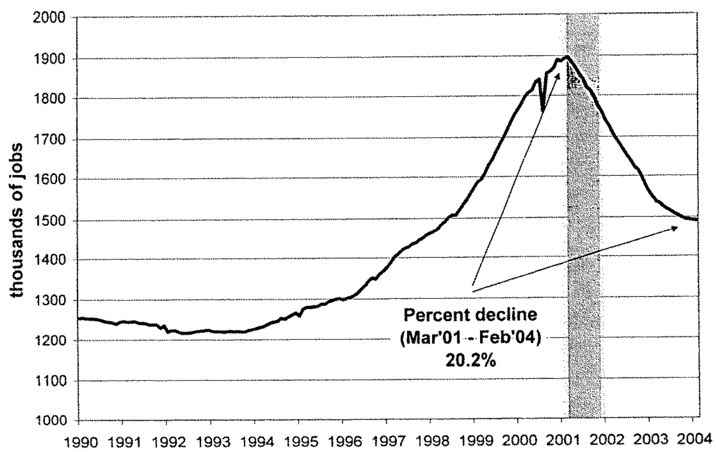
Source: Author's analysis of Current Populaton Survey data.

Figure 3: Real Hourly Wages, Young College Graduates, Age 25-35, 1979-2003



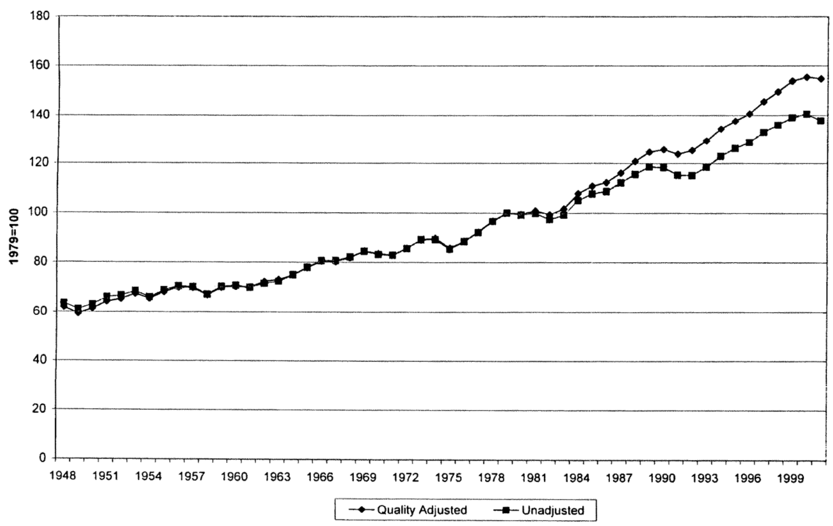
ource: Author's analysis of Current Population Survey data.

Figure 4: Number of Jobs in Internet and Telecommunication Industries



Source: Bureau of Labor Statistics

Figure 5: Indexes of Labor Hours, Quality Adjusted and Unadjusted, 1948-2001



Source: Bureau of Labor Statistics

Chairman BOEHNER. Mr. Grady.

STATEMENT OF ROBERT E. GRADY, MANAGING DIRECTOR, THE CARLYLE GROUP, ON BEHALF OF THE NATIONAL VENTURE CAPITAL ASSOCIATION, SAN FRANCISCO, CA

Mr. GRADY. Good morning, Mr. Chairman. Thank you very much to you and Mr. Miller, and the Members of the Committee for the opportunity to testify. It's a special pleasure to be back in this building, where I started my own career right out of college.

I'm here to testify on behalf of the National Venture Capital Association, the NVCA, which is the premiere association representing the VC industry in this country. And it represents over 450 member firms, and the vast majority of venture capital professionally managed in this country.

My firm, Carlyle Venture Partners, or CVP, is a member of the NVCA. What we do is, we make investments in early stage, pre-IPO companies, in things like semi-conductors, software, security, storage devices, RFID technology generally sold to the enterprise market, and in medical devices to cure conditions like spine problems, macular degeneration, congestive heart failure, etc.

Interestingly, although CVP was only started in 1997, the 35 companies which we helped start, and in which we still hold investments today, employ over 3,700 people. Mr. Miller might be interested to know, I think over 1,000 of them are in the San Francisco Bay Area, and quite a large number in the East Bay. The fast-growing East Bay. Our most recent fund, CVP-2, which was closed only in 2002, has helped fuel the growth of startup companies that today employ over 1,100 people.

My point in highlighting our experience is not to tout our own firm, but rather to illustrate the point that venture capital investment has been a major source of job creating capital in the United States for the past 30 years. Two years ago, the NVCA commissioned a study by Wharton Economatrics and DRI, which had some staggering results. It showed that in the year 2000, venture-backed firms accounted for $1.1 trillion in sales. That's about 11 percent of U.S. GDP.

It also found that venture-backed companies directly employed 12 and-a-half million people, indirectly accounted for 27 million jobs, and it found that venture-backed companies had far higher levels than average of R&D spending, patents per employee, etc. And it also found that these benefits are spread widely across the United States. If you look at last year, for example, $18 billion was invested by venture firms into more than 2,700 companies in 48 different states across a broad array of industry sectors.

The point being, of course, that venture capital—the leverage on venture capital investing in terms of job creation and innovation is substantial everywhere in America. So we appreciate the opportunity this morning to offer the Committee our views on how to deal with the changing nature of the economy, and how keep the kind of environment present here where we can keep creating those jobs.

First of all, our economy has always been extremely dynamic. That's one of its greatest strengths. And innovation has played a key role in allowing our economy to constantly change through many cycles, while, over time, raising our standard of living, improving the quality of American lives, and creating a significant number of jobs. One of the roles of venture capital has been to spawn new companies, which in some cases went on to create whole new industries. As I mentioned, not just in technology and health care, but also in manufacturing, retail trade, business services, construction.

Venture capital companies spawn the gamut from Genentech, which basically invented the biotechnology industry and today employees over 5,200 people, 80 percent of which went to 4-year college, to FedEx, which pioneered what's today a $27 billion industry, to Staples, which, of course reinvented the office supply industry. Now, we believe America's job creation record and economic performance generally is enviable. We are, of course, the largest economy in the world.

But throughout the last decade, we have created jobs and grown faster, more consistently than, for example, the advanced economies in Europe. Even during the boom of the late 1990's, unemployment rates of Germany and France and other European nations remained stubbornly high, hovering around 10 percent. And so it's worth examining what caused our out-performance relative to some of these countries, and thinking about how to chart a course for the future.

The NVCA and I personally believe that the correct response to both outsourcing, to the evolving nature of the economy, is to be prepared to compete, and to compete well. Today, the issue is not so much the short term, because the economy is not in crisis. Our unemployment rate is 5.6 percent, inflation and interest rates are low, economic growth has been strong. But the long term—what can we do to be better able to compete in the economy—the knowledge economy of the future?

So let me just hit four or five points about how we can better compete. First, I believe we must ensure the availability of risk capital. The businesses that venture capitalists invest in are generally very high-risk. Often they do not succeed. But as I mentioned, they create—they generally contribute greatly in terms of job creation. According to the Census Bureau, since 1988, almost 10 million jobs have been created by companies with less than 500 employees.

In that regard, we believe incentive for capital formation should remain. As you know, we supported the amendments last year to reduce the capital gains rate to 15 percent. We do believe, though, it should be made permanent.

Second. We must maintain transparent, liquid, and trusted capital markets. America's deep and trusted capital markets are widely acknowledged to be the deepest and most transparent in the world. That is a key asset that Congress should do everything in its power to correct. And we've supported the reforms which would improve transparency. That being said, we do not believe that we should adopt measures in the name of corporate reform that will have the affect of making financial statements less reliable, and choke off the innovation I'm talking about.

So, in that regard, for example, we don't believe it is either prudent or financially and accounting-wise correct to require the expensing of incentive-based stock options to employees.

Third. Improving our schools. The NVCA has long believed that the health of the schools is essential to the health of the country. We certainly congratulate the Committee—Members of both sides of the aisle—on the No Child Left Behind legislation. We believe there's a bipartisan consensus to invest more in education at the Federal, state and local level. But the real trick, which perhaps we can get to in the Q&A, is how to make sure that these resources are deployed to maximum effect. That is, how can we attract the most talented people to the classroom to teach? How can we use technology and better infrastructure in our classrooms? How can we address some of these critical problems?

Fourth, we have to constantly seek to maintain the world's best system of higher education. And here, too, we need to increase the proportion of science and math and engineering graduates if we are to remain competitive. We do believe that, as Chairman Greenspan said this morning, equal access to higher education and to skills is critical. And in that regard, just as no child should be left behind, no adult in need of higher education or re-training should be left behind, either.

Fifth. We believe it is critical to invest in basic research and development. A key feature of this preeminent university system that I mentioned has been the funding of individual investigators through the NIH, the NSF, the DOE, the DOD, the other research agencies of the Federal Government. And we believe these investments have been critical in terms of spawning innovation in material science, high-performance computing, high-energy physics, biomedical research.

Now, we know that the Congress faces severe budgetary constraints. I would say, in this regard, that venture capitalists in particular recognize that among your constituents are very focused on the importance of the future. And most of the investment we're talking about, in education, universities—someone earlier in the hearing mentioned infrastructure—are in the domestic discretionary category, which has been most constrained. I think we, in particular, therefore recognize that without entitlement reform, investments in the future are going to be under-funded structurally.

Sixth, maintaining flexible labor markets. There was some discussion of this this morning. I would simply note that in Europe, for example, in some countries, if you hire someone for a relatively short period of time, they can't be terminated for up to 2 years. And those countries—this has not had the experience of increasing employment. It has actually decreased the willingness of people to hire people in the first place. Similarly, with extended plant closing notifications, it's a discouragement to hiring people.

Lastly, expanding world trade. Part of our faith in the innovation-led and knowledge-based economy is the conviction that American ideas and products can compete anywhere in the world. The U.S. Trade Representative's office showed that exports accounted for 25 percent of America's growth, and supported 12 million jobs in the last 10 years. In Ohio alone, for example, Mr. Chairman, I believe there were two billion—exports increased by $2 billion.

Finally, it is true that the world remains a highly competitive place. As venture capitalists, we see our job as to help find and fund those new areas that promise to change for the better, the way we live and work. As we sit here this morning, a whole new generation of venture capitalists are funding companies in everything from nano-technology to genetics, to energy, to fuel cells, to RFID, as I mentioned and security. What do each of these areas have in common? In every single one of them, the United States is the leader.

So, obviously, every time, as the economy changes, there will always be the question of whether to continue to pioneer, or whether to turn inward to try to consolidate our gains. And the NVCA just wishes to be on record in front of the Committee in being in favor of making the investments today that we need to ensure our continued leadership tomorrow.

Because in the end, we believe that it is this combination of innovation and entrepreneurship that will continue to improve our lives here in America, to maximize the creation of new jobs to help offset the churn, if you will—the erosion that's always been part of our economic landscape, and to provide Americans with the most exciting set of opportunities in the future. Thank you very much.

[The prepared statement of Mr. Grady follows:]

Statement of Robert E. Grady, Managing Director, The Carlyle Group, on behalf of the National Venture Capital Association, San Francisco, CA

Mr. Chairman and Members of the Committee. Good morning. My name is Robert Grady, and I am here to testify on behalf of the National Venture Capital Association, the "NVCA". The NVCA is the premier association representing the venture capital industry in the United States, with over 450 member firms, representing the overwhelming majority of venture capital funds professionally managed in this country. Our mission is to foster greater understanding of the importance of venture capital to the U.S. economy, to represent the public policy interests of venture capitalists and portfolio companies, to stimulate the flow of equity capital into emerging growth companies, to provide reliable industry data, to maintain high professional standards in the industry, and to sponsor professional development opportunities for our members. On behalf of the NVCA, let me first express my thanks for the invitation to testify.

My firm, Carlyle Venture Partners, is a member of the NVCA. I serve as the managing partner of Carlyle Venture Partners, which makes investments in early stage (generally pre-initial public offering) companies which provide technology infrastructure—such as semiconductors, software, security and storage solutions, and radio-frequency identification equipment—to enterprises, and which develop and manufacture medical devices to treat more effectively conditions such as spine problems, macular degeneration, and congestive heart failure. We have offices in San Francisco, California; Tyson's Corner, Virginia; and Washington, D.C.. Carlyle Venture Partners is part of the Carlyle Group, which is by most measures one of the largest private equity firms in the world, with about $16.5 billion in private equity funds under management and over 500 employees.

In addition to my work at Carlyle, I have served since 1993 on the faculty of the Stanford Graduate School of Business (which I am proud to call my alma mater as well), where I serve as a Lecturer in Public Management, teaching courses in the investment process and in understanding the regulatory environment.

Interestingly, although Carlyle Venture Partners was only started in 1997 and began making investments then, the 35 companies which we helped to get started and in which we still have investments today employ over 3,700 people. Our most recent fund, Carlyle Venture Partners II, which was closed in 2002, has helped fuel the growth of startup companies that today employ over 1,100 people.

My point in highlighting the experience of Carlyle Venture Partners to the Committee is not to tout our own firm, although we are proud of its record, but rather to illustrate the point that venture capital investment has been a major source of job-creating capital in the United States for the past thirty years.

Two years ago, the NVCA commissioned the firm Wharton Econometrics/Decision Resources, Inc. ("Wharton/DRI") to undertake a study of the impact of venture capital investing on the U.S. economy. The results of the study were staggering: Wharton/DRI found that, in the year 2000, venture-backed firms accounted for $1.1 trillion in sales—or about 11% of U.S. Gross Domestic Product. Further, the study found that venture-backed firms directly employed over 12.5 million people, and directly or indirectly supported over 27 million people. In addition, the study found far higher than average levels of R&D spending as a percentage of sales and patents generated per employee. Finally, it found that these benefits were widely spread across the United States, with venture-backed companies employing people in 49 of the 50 states. The point that the study made clear is that the leverage on venture capital investing, in terms of job creation and innovation, is substantial—everywhere in America. In 2003, $18.2 billion in venture capital investment was directed at more than 2,700 companies in 48 states across a broad base of industry sectors.

This data shows that, contrary to common belief, venture capital investment is not just a Silicon Valley, high technology phenomenon. Opportunities for innovation are everywhere, not just in the technology sector of our economy. In addition to Genentech, Intel, Cisco and e–Bay, U.S. companies that were originally venture-backed include Airgas, Amazon, Boise Cascade, Costco, Starbucks, Home Depot and Federal Express. Collectively, these innovative organizations have obtained countless patents, created business models that have been imitated and leveraged by others, and developed product lines and service delivery channels that never before existed.

America's venture capital industry, which has helped fuel so much job creation in the past few decades, appreciates the opportunity to offer the Committee our views on how to create and foster the type of environment that will allow America to keep creating jobs.

I believe the Committee's concern this morning is how to respond to the changing nature of our economy. For example, there has been, in the press and elsewhere, a great concern expressed regarding the so-called outsourcing of certain functions to other nations. Our economy has always been extremely dynamic—that is one of its greatest strengths. The US economy has continuously reinvented itself cycle after cycle through innovation while simultaneously raising the standard of living of Americans and improving the quality of our lives. One of the roles of venture capital has been to spawn new companies that in some cases went on to create whole new industries. Venture capital has been a critical catalyst in creating entire industry clusters such as biotechnology, Internet services and software. It has also impacted more traditional sectors such as manufacturing, retail trade, business services, and construction.

Let me give the Committee two examples:

- In 1976, a biochemist and a venture capitalist founded a small company to explore a new field called recombinant DNA technology. They called the organization Genentech and went on to help invent the biotechnology industry. Today Genentech employs more than 5,200 individuals of which more than 80% have college degrees. The company is consistently named one of the Best Companies to Work For. Two weeks ago, Genentech received FDA approval for Avastin, a therapy for first line colorectal cancer patients.
- In 1965, a Yale undergraduate student named Frederick Smith wrote a term paper on the inadequate airfreight system in the U.S.. In June 1971, Federal Express incorporated and on its first night it delivered 186 packages to 25 US cities. The company went on to change the way our country works. Federal Express not only improved business productivity exponentially; it created the $27 billion U.S. ground and air express market and that spawned more than 550,000 jobs and innovation through the operations of competitors such as DHL, Airborne Express, UPS and the US Postal Service.

This culture of innovation and entrepreneurship had given our society unique characteristics. We have some of the greatest social mobility in the world—meaning that in our society, it is still possible for a person to come from humble roots, or to be new to this country, and within one lifetime to have a realistic chance of moving up the economic ladder to the upper reaches of our society in terms of income or wealth. The data overwhelmingly support this, and this has been our history.

We believe that America's job creation record and economic performance generally is enviable. We are of course the largest economy in the world, but throughout the last decade, we have grown faster and consistently generated more employment than, for example, the advanced economies of Europe. Even during the boom of the late 1990s, unemployment rates in Germany, France, and other European nations remained stubbornly high at around ten percent, and economic growth lagged behind that of the United States. Many of these countries had policies that may have sounded attractive, but had the effect of discouraging investment and ultimately discouraging both competitiveness and job creation. So it is worth examining the causes of America's economic out-performance to date in seeking to chart a course for the future.

The NVCA, and I personally, believe that the correct response to the evolving nature of the economy is to be prepared to compete, and to compete well. In the short term, America is not in economic crisis. Our unemployment rate is 5.6%, inflation and interest rates are low, and economic growth has been strong. But over the long term, there is cause for concern—and we believe that we must take the steps today that will allow us to innovate and compete in the knowledge economy in the future.

So what have been the keys to America's economic out-performance? And what are the keys to being able to compete in the knowledge economy of the future? In our view, several imperatives stand out:

- Ensuring the continued availability of risk capital;
- Maintaining transparent, liquid, trusted capital markets;
- Strengthening our educational system;
- Constantly seeking to maintain the world's best system of higher education;
- Investing in basic R&D to keep America at the forefront of innovation;
- Maintaining flexible labor markets; and
- Expanding world trade.

Let me cover each of these topics briefly.

I have already outlined the data with respect to the contribution of venture-backed companies to U.S. employment, but our capital markets are of course deeper than that. This culture of risk capital has allowed a wide range of startups to flourish. Data from the Census Bureau shows that since 1988, almost 10 million jobs have been created by companies with less than 500 employees. As you know, venture capital is the investment of equity money to support the creation and development of these new businesses. Venture capital deliberately focuses on smaller, younger entrepreneurial companies that do not have the track record and stability to obtain traditional financing. These businesses carry very high risk and many do not succeed. Yet those that do contribute greatly to our economy in terms of job creation, revenue generation and innovation. The NVCA believes that incentives for capital formation and risk-taking investment should remain in place. We supported the passage of amendments in 2003 to reduce the tax rate on long-term capital gains to 15%, and we believe that such a rate should be made permanent.

Our public capital markets are widely acknowledged as the deepest and most transparent in the world. We believe that Congress and the financial system should do everything possible to keep them that way. We have supported reforms to improve transparency in reporting and congratulate the SEC and other agencies on their efforts to curb the abuses of those who have not been accurate in their reports. That being said, we believe that we should not adopt measures in the name of corporate reform that will have the effect of making financial statements less reliable and will choke off the innovation that is so critical to American success. In that regard, the NVCA does not believe it is either prudent or financially correct to require companies, especially small private companies with no public stock price history, to expense against income the awarding of incentive stock options to employees. At a fundamental level, these options are shares and not claims against the cash resources of the company—they should be counted in the denominator of an earnings per share calculation, not double counted against income as well. As a matter of accounting transparency and reliability, a requirement to expense options would make income statements less reliable, as there is no agreed-upon method for valuing options, and several of the types of methods proposed rely on estimating the volatility of the stocks of companies with no trading history. Lastly, expensing options would punish the most successful companies—by valuing most highly the options of those companies with the best growth prospects. Expensing would be economically damaging to the country by changing the ability of the most innovative and high growth companies to allow people to work for ownership instead of cash compensation.

Thirdly, if we are to compete successfully, our people have to be trained to do so. The NVCA has long been of the view that the health of our schools is essential to the health of our country. In this regard, we congratulate the Committee on its leadership in crafting and passing into law the No Child Left Behind legislation to ensure that our schools are performing, our kids can read, and parents of children in failing schools have more rights to do something about it. We believe that there is a bipartisan consensus to invest more in education at the Federal, state, and local level. The trick now is to make sure that the resources this consensus can provide are used to maximum effect—attracting the most talented people to the classrooms to teach, allowing the use of both technology and better infrastructure in the classrooms, and addressing critical problems. In particular, we would urge the Committee to investigate what can be done, and to support programs, to increase the number of students pursuing mathematics, science, and engineering education in the United States. This is one area in which America is falling behind.

Related to this point is of course the condition of our system of higher education—long acknowledged as the best in the world. Here too we need to increase the proportion of science, math, and engineering graduates if we are to remain competitive in a knowledge-based economy. We should be aware that our competitors are making this investment. According to a research report by Think Equity Research, the Chinese government has set as a goal to increase the proportion of those in the 18- to 22-year old age cohort that attend four-year college or university from its current level of four percent to twenty percent, within twenty years. Think reports that this will require the building of 10,000 universities the size of the University of Indiana. Beyond that, we believe that Americans must ensure that access to education continues—that from K–12 all the way through the community college and university system, Americans have access to preeminent education. Just as "no child should be left behind" so too should "no adult in need of retraining be left behind."

A key feature of our preeminent university system has been the funding of individual investigators at our research universities through the research agencies of the Federal government—the National Institutes of Health, the National Science Foundation, the Department of Energy, the Department of Defense, and so on. The investments made by this and previous Congresses in the basic R&D enterprise in the United States have been critical to spawning innovation and ensuring our economic leadership. The advances this research has promoted in materials science, high performance computing, high energy physics, biomedical research—in a wide array of areas—has laid the groundwork for American leadership, and American competitiveness, in a large number of related industries.

We hope that this and future Congresses will continue this investment in innovation. We recognize that this year's budget contains a record amount for Federal R&D, but also recognize the budgetary constraints facing the Congress going forward—particularly in non-defense discretionary spending. In this regard, venture capitalists particularly among your many constituents are focused on the future. Yet many of the investments most critical to that future—in education, in universities, in transportation infrastructure, in education—are in this category of discretionary spending. Venture capitalists in particular therefore recognize that without entitlement reform, investments in the future will be under-funded.

One oft-cited point of comparison with the European economies I mentioned earlier is that of labor market flexibility. In several European economies, employees who work for a certain relatively short time cannot be terminated, for up to two years. This has not had the effect of creating more jobs, but rather of discouraging employees from being hired in the first place. Similarly, lengthening plant closing notification requirements, as some are proposing we do in response to the wave of news reports on outsourcing, may simply discourage the opening of facilities in the first place. We do not believe that reducing labor market flexibility in the United States will create more jobs, and we would urge the Committee to consider that the more flexible system extant in the United States today has attracted rather than destroyed jobs.

Finally, part of our faith in an innovation-led, knowledge-based economy is the conviction that American ideas and products can compete anywhere in the world. The NVCA believes that more open markets will yield more growth, more jobs, better and more affordable products and services, and higher standards of living for Americans. According to the U.S. Trade Representative's office, over the past decade, exports accounted for 25% of America's economic growth and have supported over 12 million jobs. We generally believe that a level playing field that opens international markets to American innovation and the products and services it has yielded, while allowing our innovators to secure the highest quality components and services at the best price from wherever they may exist in the world, will contribute the most growth to the American economy. In this regard, we congratulate the Congress for its role in making various trade agreements possible and for approving them once they have been negotiated and found to be acceptable.

It is easy to look at the rapidly changing nature of the economy and react with fear. This has happened several times in the past, often with adverse consequences. In the late twenties, concerns about America's ability to compete against lower cost producers led President Hoover to recommend and Congress to enact the Smoot–Hawley tariffs. Growth and employment shrunk by a staggering 25% in the years that followed. In the seventies, there were concerns about the U.S. automakers ability to compete against Japanese producers, but a new cycle of innovation and product quality later led to market share gains. In the 1980s, Congress and others were concerned about our ability to compete in semiconductors—yet the biggest growth in value and in job creation in semiconductors in the 1990s was right here in the United States.

Today, it is true that the world remains highly competitive. As venture capitalists, we see our challenge as to find and fund new areas that promise to change—for the better—the way we live and work. As we meet this morning, a new generation of venture capitalists is funding a new generation of companies in emerging area such nanotechnology, genetics, photonics, energy, fuel cells, and lasers. What do these areas have in common? In every one, the United States is the leader.

I am here today on behalf of the venture capital community because we share the concerns of this Committee of surrounding sustainable job growth in the United States. As a country that has been built on the pioneering of new markets and industries, the U.S. will always be faced with the challenge and the question of whether to continue to pioneer, or to turn inward in some attempt to consolidate our gains. The NVCA wishes to be on the record before this Committee in favor of making the investments we need to make today to ensure our continued leadership tomorrow. In the end, we believe that it is the combination of innovation and entrepreneurship that will continue to improve the lives of Americans, maximize the creation of new jobs to help offset the job erosion that has always been part of our economic landscape, and provide Americans with an exciting set of new opportunities for growth.

Thank you very much.

Chairman BOEHNER. We thank you, all three witnesses, for your excellent testimony.

Let me begin with Mr. Castellani. We all know that education is the great equalizer in American society, and now and in the future, jobs are going to go where the people are the best educated. Yet over the last several years, American schools by and large have only achieved mediocre performance, particularly in math and science, despite spending more money per student than any nation on the planet.

So I guess my question is this. For our economy, how important is it to have a goal not just of adequacy, but of excellence in our schools? And how important is it to drive innovation and reform in our schools so that our performance meets our investment, and what are the consequences if we don't?

Mr. CASTELLANI. Well, certainly we agree that it is absolutely vital to the future of the U.S. economy, to job expansion, and to our ability to participate in worldwide markets. One of the things that we had learned over the last 20, 25 years in American business has been that the more we focus on improving the quality of our products and our services and that we measure the improvement and the quality and the products of those services, the better that we do. And one of the things that caused us to be very aggressive and continues us to be very aggressive in supporting No Child Left Behind is precisely what's embodied in that Act, and that is we set high standards of excellence and we measure our progress against those standards. We think that is absolutely critical to improving the nation's education system. And without that improvement, we either will become less productive or less able to sustain the kind of growth that we want with new product and service innovation, or we'll have to look elsewhere in the world.

And there's a second part to that, and that is, is not only do we have to improve the basic education that we provide, which we believe No Child Left Behind will do, but we also have to encourage those people who are going into our institutions of higher learning to go into the kinds of skills that we will need in the future.

Sciences, mathematics, and engineering are those kinds of skills that while we are graduating, and I agree with Dr. Bernstein, we are graduating a lot of very well educated young men and women for our colleges, but as is in my own personal case, I've paid for the education of a very highly educated political scientist who is now running a pizza parlor.

What we need is to encourage people to go into those key skills, and a critical part of that is what else we know, and that is 60 percent of the graduates from our universities and colleges in the future will be women. And traditionally, they do not go into those fields of study. So we need to do all we can do to encourage women to go into it.

So the answer to the question is, it's absolutely vital for the future, and it's vital not only at the K through 12 level but also the university level.

Chairman BOEHNER. There's been a great deal of discussion over the last few months about outsourcing of jobs. But I've been surprised that I haven't heard an analysis or a discussion of the great many jobs that we have in the U.S. that are there as a result of our exports around the world.

Do any of the three of you have some estimates on the number of jobs that exist in America based on exports of product services around the world? Mr. Grady?

Mr. GRADY. In my home state of California, for example, the level of trade has grown by 10X, by tenfold, just in the last 25 years, from $31 billion in 1978 to over $350 billion today. And I think California probably first among the states is most dependent on trade. I believe one in six jobs in California is dependent on trade.

I was reading some testimony the other day from U.S. Trade Representative Zelick who said that about 25 percent of the economic growth that we've experienced in the last decade has been due to exports.

Dr. BERNSTEIN. May I add a comment? When we talk about the export side of the equation in isolation, it's a little bit like going to a baseball game and saying I saw a great game last night, you know, our team scored five runs, and you leave it at that. You need to talk about the import side as well, because if the other team scores ten runs, you've lost.

The problem is while there are certainly jobs and good jobs associated with exports, the problem is that we have been running such large and persistent trade imbalances that we've lost far more jobs to imports than we've gained through exports.

Mr. CASTELLANI. I think, Mr. Chairman, the other thing that needs to be looked at, and we know a vital part of the economy is exporting, but we also know that a vital part of the economy is participating in a worldwide marketplace. Those companies who participate in the global marketplace tend to have better paying jobs that last longer, and they are more viable than companies that do not. So the jobs are better and they pay better and they last longer.

More importantly, we have to look at the 6.5 to 7 million Americans who are employed directly by companies who invest in the United States that are from other countries. Not only is that the core level, but also there's the multiplier effect associated with those jobs, and certainly those are valuable jobs, that is valuable investment.

And third, I think we have to look at what has become a rhetorical issue here, and the way this is being characterized. You know, we did a poll in January where we tried to gauge Americans' sentiment toward this whole issue of working with the world, and we found that rhetoric is important.

Our survey found that 92 percent of Americans that were surveyed agreed that isolating America from the world is not the answer for the economic problems, that rather we should help American companies to compete in the world economy so they can create new jobs and build economic strength.

We also saw that 91 percent favor programs for funding and retraining that helps people who lose their jobs remake themselves for a new career. And when we gave the survey participants a choice between increasing government regulation so it's more difficult to cut jobs and open facilities in other countries, or giving American companies the freedom to remake themselves to stay ahead of the economic curve, Americans chose that in our poll in an overwhelming majority, 73 to 24.

So we've got reality that is very different than perception at this point, and it rally comes down to very much a rhetorical issue. But what we do know is that if we don't have access to those foreign markets, if we don't have access to working with the world, then we will not have opportunities to grow the economy and create the jobs that we all want.

Chairman BOEHNER. We thank you. Mr. Miller.

Mr. MILLER. Thank you very much. Very often the suggestion is somehow here that this is a question of mindless, sort of mindless globalization or isolationism, and you get to pick your side, which one you want to be on.

It seems to me the question, and Mr. Grady, you pointed it out, the question is really how do we compete and compete well? How are we smart engagers of this? And so as a policymaker, I'm trying to think where's this going.

And I think Dr. Bernstein made a very important point. We now are watching people make what they view from their point a rational, calculated economic decision that they're going to trade in the people who are reading X-rays in this country for people who can read those X-rays with the same confidence that they want to give to their patients in India. That's a decision. That's happening. They're trading in those well-trained radiologists in the United States for apparently well-trained radiologists in India. Call centers are taking people who have the set of skills. People have invested millions of dollars in developing call centers in the United States. They're simply saying we're going to take this call center and we're going to move it to India.

That is what companies do because you have to ask yourself, how are we going to get through the next year? How are we going to get our profitability? How are we going to get our earnings? How is this going to happen? How are we going to compete? Those are decisions that people make, and some people would argue that those are smart, and that's real. That's happening.

So this isn't, as Dr. Bernstein pointed out, this isn't that those radiologists reading those X-rays aren't qualified. It's simply that you can get those for 30 to 40 percent less in another country. So that's happening.

Then I think if you look at this, you ask what are people in your business doing, venture capitalists? And if you read, you know, stock analysts and venture capitalists about different companies, about saving this economy, there's an awful lot of people in your business who are saying going to China, India, outsourcing in one form or another—you know, in different industries, it will be different countries—that just has to be part of your plan you have to think about because the cost savings are so big. Not the skill savings—the skills are so much better. That is coming, I think, if we don't shape up in this debate today about education.

But the fact of the matter is, people who—I always like to see what people who are betting with their own money are doing. I think you can learn more about global warming by following the reinsurance industry around the world and their discussions and where they're putting their money and where they're not putting their money than you can from all of the political debate in Congress.

So I spent a lot of time, and again, if you go to Asian journals and you go to Asian stock analysts, they have—they're telling you where they think this going and what they're telling you is that much of this just the beginning of a very logical dynamic follow-on to what we like to think is the American dynamic economy.

The companies you name are hallmarks in innovation. They're the leaders. But the question is, it may be that the next step in their innovation is outsourcing for reasons of their corporate entity, and that decision may be different than what's good for American workers. As we know, sometimes what's good for American brands isn't necessarily good for American workers. You can sell, you know, Coca-Cola all around the world. It doesn't have to be made in Atlanta. And it's in fact not made in Atlanta, because they won't let you sell it in some countries if you make it in Atlanta.

So it's very good for the American brand, but that doesn't necessarily mean you're going to increase the employment in that company in America.

I mean, those are the sort of—what's going on in the economy today. We can say we don't want to talk about it, but the fact is, that's what's happening and that's part of the dynamics.

Mr. GRADY. May I make a comment?

Mr. MILLER. Sure.

Mr. GRADY. I think that the examples you mentioned, call centers, for example, or radiology, are two out of thousands of industry.

Mr. MILLER. Yes, but I can show you auto design. I can show you computer design. I can show you program design, all of which—

Mr. GRADY. Right. But let's think about what happens in that global dynamic. Intel, for example, makes microprocessors all over the world, including in the United States, including in Santa Clara County. If you look at an Intel microprocessor 30 years ago, it could send 100,000 instructions per second.

Mr. MILLER. I understand.

Mr. GRADY. Today it can send 3 billion instructions per second, and guess what? It is cheaper than it was 30 years ago.

Mr. MILLER. No question.

Mr. GRADY. By a lot.

Mr. MILLER. No question.

Mr. GRADY. What happens, in my view, and I think what is observable, is that as that product becomes faster, cheaper and better, it opens up whole new applications that give way to whole new industries.

Mr. MILLER. There's no question.

Mr. GRADY. So, for example, that faster microprocessor makes possible an infrared camera—

Mr. MILLER. Mr. Grady, that's going to happen. My concern is that the expansion of the remark that I said in talking to Chairman Greenspan—

Mr. GRADY. No, but those new products—

Mr. MILLER. Silicon Valley is where you start a company. China is where you grow it. America is where you start a company for a whole host of reasons because of our history innovation, competition and all the rest of that. The question will be, is America where you then grow that company?

And I don't think—I think you're denying, people are denying the reality if they suggest that somehow that innovation will grow companies in America to the same extent in the future that it has in the past. I think that's just—that's a fact. Now we have to figure out how to deal with that in terms of the impact on our economy and on families.

Mr. GRADY. Two little points. I do believe it is continuing to grow companies in America by making products that open up whole new markets. You can radically—

Mr. MILLER. I wouldn't dispute that at all.

Mr. GRADY.—increase the number of applications. Health care, distribution, you name it.

Mr. MILLER. I wouldn't dispute that at all.

Mr. GRADY. And I can give you case after case of examples in sensors or RFID or some of the areas—

Mr. MILLER. No, no question.

Mr. GRADY. Second, I think when you look at the China case you mentioned and people going to China, I think one of the things that's happening today, people are investing in China in part because of the great growth of incomes in China. They're making products there that are going to be sold in China, not necessarily exported to the United States.

Mr. MILLER. Well, there's an awful lot of people who are telling their shareholders they're going there to built platforms for export, and they're very top line companies; that they must go there to compete for export. I agree, they're selling, you know, they hope to be able to sell into the Chinese market for 50 years.

Chairman BOEHNER. We have three votes on the House floor, and because of the patience of our witnesses, what I'll do is, I think Mr. Castle has a short question then I think we'll wrap it up.

Mr. CASTLE. Actually, I'll convert it to a brief statement so if somebody else wants to ask a question, Mr. Chairman, that would be fine.

I will just say this. I missed part of the testimony but I have read what you said, and there's a real difference I think in what Mr. Castellani is saying and what Dr. Bernstein is saying that frankly concerns me. I've got to tell you right now that I am very concerned about educational groups in this country who are trying to undermine No Child Left Behind and then not admitting to it all the time, subsets of groups or whatever it may be. I'm not going to name names here.

But I'm very concerned about that, because my judgment is, in talking to a whole variety of employers and other people in this country in this Committee and back in Delaware is that we need some basic, fundamental changes in education. I'm not suggesting No Child Left Behind is perfect. In fact, some changes are going on right now. But the concepts of it sure as heck are something which has been needed to grab hold of education in this country and to make very vital and fundamental changes.

And I agree entirely with that, and I haven't spoken to an employer yet ever in probably my last hundred visits to various employers who have not mentioned education as being a significant factor in terms of who they're employing, not employing and generally deploring the state of education in America today. And so I obviously side with a lot of what you said, Mr. Castellani, in your testimony.

In the case of Dr. Bernstein, and I don't necessarily disagree with all Dr. Bernstein stated here because I think some of his points are valid. For example, you can't blame the lack of education alone as being the sole reason for structural unemployment today. But on the other hand, not all unemployment is offshore. A heck of a lot of employment in America is just the ordinary employment that goes on. In fact, that's probably the vast majority of it.

And we get talking about this sort of offshore concept versus onshore or whatever it may be, and I repeat what I just stated, and that is I've had so many employers tell me, we simply can't hire people. I forget who it is. Somebody told me the other day that they—it was one of the fast, not fast food, but one of the convenience market type places—they have I think a 10-part question or a 20-part question they ask, and it's pretty simple stuff, and it was amazing the number who can't answer those questions and therefore can't even make change for operations such as that.

And I think to suggest that the lack of more skilled educational techniques in America in terms of the workforce of people in America, maybe individually if not the overall collective workforce, is something we need to be very careful about how we state, because to me, it is a fundamental and underlying problem that does tie into our economy, it does tie in at least to personal unemployment, and I think to structural unemployment to a degree.

And again, not suggesting there are not other economic reasons for this. We all understand that. And I just think it's something that we need to pay attention to. And I would just re-encourage all of us to make absolutely sure that we're challenging education, funding education, doing all that we can in order to provide people an opportunity. That has got to be part of dealing with the structural employment and income problems in this country. And I yield back, Mr. Chairman.

Chairman BOEHNER. Mr. Wilson, if you've got something quickly before we go vote.

Mr. WILSON. Yes. And thank you, Mr. Chairman, for putting this together. It was extraordinary. I'm sorry I missed a lot of it. But to have Dr. Greenspan and now the three of you, thank you for being here. And as I came in, I was particularly happy to hear Mr. Grady's comments about reducing capital gains taxes. I was a real estate attorney for 25 years. I know the consequence of the jobs to be created from reducing capital gains taxes, and then that generates additional construction and then additional tax money for education, and the cycle is in place.

And so I want to thank you all for being here today and thank the Chairman for having this hearing.

Chairman BOEHNER. Let me thank all of you for your excellent testimony, and we appreciate your willingness to come in, and I'm sure we'll be talking with you soon.

Thank you. This hearing is adjourned.

[Whereupon, at 12:49 p.m., the Committee was adjourned.]

[Additional material submitted for the record follows:]

Response to Questions Submitted for the Record from Hon. Alan Greenspan, Chairman, Board of Governors of the Federal Reserve System

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ALAN GREENSPAN
CHAIRMAN

May 25, 2004

The Honorable John A. Boehner
Chairman
Committee on Education and the Workforce
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

I am pleased to enclose my responses to the questions submitted following the Committee's hearing on "The Changing Nature of the Economy: The Critical Roles of Education and Innovation in Creating Jobs & Opportunity in a Knowledge Economy."

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

Chairman Greenspan subsequently submitted the following in response to written questions received in connection with the March 11, 2004, hearing before the House Committee on Education and the Workforce:

1. In your appearance before the Committee, you spoke to the constant innovation and improvement that market forces require of market participants, ultimately benefiting consumers with lower prices and better quality. We have not seen similar improvements or cost discipline in the market for higher education, however. Average tuition rates among four-year public institutions have increased by 47 percent over the last 10 years and by 42 percent among four-year private institutions over the same period, but actual quality does not appear to have materially improved.

There does appear to be vibrant competition among institutions of higher education, but that competition seems to be driven primarily by prestige. Increasingly, the standard for prestige is being set by rankings of top colleges and universities such as those in *U.S. News and World Report*, and institutions appear to be targeting their efforts to improve quality toward rising in these rankings. Those rankings rely heavily on external factors, such as reputation, selectivity, and resources available to faculty. They do not seem to rely on data that would indicate whether the institution itself had added significant value to their students' education.

Perhaps as a consequence, we see institutions spending considerable sums making themselves more attractive to applicants--for example, building multi-million dollar facilities for student recreation--and maintaining existing student body size despite the impending substantial increase in college-age students. There is also anecdotal evidence that among the steps institutions are taking to enhance prestige and selectivity are: (1) raising prices (the "Neiman-Marcus effect" of suggesting greater value by raising price), (2) recruiting "name faculty," and (3) encouraging faculty to concentrate on published work instead of teaching.

We have not seen, however, evidence that institutions are making significant efforts to change the way they actually deliver their services so as to improve either the quality or efficiency of their educational program. As Derek Bok, former President of Harvard University, noted in his recent book, *Universities in the Marketplace*,

> ***Take almost any product--automobiles, computers, television sets, and so forth--and compare the improvement over the past twenty-five years with the progress in the quality of college instruction. Most commercial products are distinctly superior to what they were a quarter century ago. In contrast, most college teaching remains, with a few technological embellishments, very much as it was twenty-five years ago--or even fifty years ago, for that matter.***

This would seem a market failure. Consumers have access to only the most basic anecdotal evidence about actual quality and to empirical evidence reflecting mostly prestige. They lack access to empirical evidence about actual quality. Accordingly, the market provides an incentive to enhance institutional prestige but none to enhance quality or efficiency.

This Committee is considering making available to the public additional empirical information speaking more directly to educational quality. In some cases, higher educational institutions already provide this data to the U.S. Department of Education, but the information is not readily accessible to the public. Colleges and universities are eager to show Congress volumes of data being reported annually, yet there is no evidence this information is getting in the hands of students and parents, nor is there evidence showing whether this is the *right* data. In addition to making this already reported data available to the public, we propose making readily available on the Internet information that institutions would provide voluntarily. For example, we are proposing that where the institution agrees to provide results from the National Survey of Student Engagement--a detailed, independently conducted survey of students about the quality and intensiveness of their educational experience--it will be made available to applicants and their parents via the Internet.

Do you believe such additional transparency has the potential to encourage institutions to put a greater emphasis on educational improvement and innovation?

Clearly, efforts to make more information available to students and parents--and to improve the ease with which that information can be used--would assist them in evaluating the rich set of educational opportunities that are available. America's system of higher education offers a highly diverse and complex range of institutions--large research universities that combine undergraduate and graduate offerings, small liberal arts colleges, and vocation-oriented community colleges. Our reputation as the world's leader in higher education is grounded in the ability of these versatile institutions, taken together, to serve the needs of a dynamic economy. Competition, risk-taking, and innovation are elements of that process. If we are to remain preeminent in transforming knowledge into economic value, our research universities must continue to promote peer-reviewed scholarship and place high value on creativity and risk-taking. More broadly, our system of higher education must ensure that its teaching unleashes the creative thinking that moves our society forward.

2. The term "knowledge capital" has been used increasingly to describe knowledge assets of firms. We know that investment capital itself is a key driver in economic growth--that the more investment capital is available and the more efficiently it can be allocated and used, the more our entire economy can grow because both entrepreneurs and existing firms can have access to funding they need to build for the future, and as they succeed the wages they pay circulate back into the rest of the economy.

Can we think of knowledge the same way, as an engine of growth--that the more educated and skilled workers we have in our society, and the more efficiently and freely they can apply their knowledge and skills, the more prosperous our entire economy can become? Is it fair to truly think of "knowledge"--seen in terms of skills, education, experience, and technology--in the same way we think of "capital"?

As you suggest, gains in knowledge are a key ingredient of economic growth. Indeed, the revolution in information technology, as well as earlier epochs of innovation, sprang from an expansion in the nation's knowledge base. Conceptually, it seems appropriate to think of knowledge capital--also known as intellectual or intangible capital--in ways parallel to how we think about physical capital. It is, however, generally much more difficult to obtain accurate measures of the stock of intangibles than of physical capital. Nonetheless, there is a growing research effort in the economics and accounting professions to make such measurements. This work is still at early stages, but shows considerable promise.[1] One thing is clear from this research: the value of accumulated intangible capital is quite large and has been an important element in the economy's development in recent years. Further progress in understanding the creation and role of intangibles will deepen our understanding of the sources of economic growth in the United States.

3. Many have commented that what drives success in today's economy are intangible assets, including both intellectual property and even more intangible holdings such as its business model, its expertise, or its organizational structure. Some have called for increasing the transparency of such assets, potentially through accounting innovations. Do you believe that making standardized information about intangible assets available to investors would help our markets operate more efficiently and with greater stability? Would it help increase growth by giving firms whose intangible assets are strong increased access to investment capital?

Transparency is a cornerstone of efficient capital markets. As you note, intangible assets appear to have become more important in recent years, and corporate accounting and reporting systems--largely designed in an era more oriented toward tangible capital--do not provide as much information on intangibles as might be desired by some investors. Although there are difficult accounting issues related to the valuation of some intangible assets, a number of analysts have argued that providing additional information about

---

[1] A conference held at the Federal Reserve in 2002 explored these issues, and the papers presented at that conference are expected to be published in a volume shortly. The papers and conference program are available on the web at: http://www.nber.org/ ~ confer/2002/criws02/criwprg.html.

activities related to intangible assets would--if implemented in a thoughtful manner--allow investors to make better judgments about the prospects of individual businesses and sectors.

4. Economist Robert Schiller and others have proposed designing new, private risk instruments to provide greater income stability for individuals, both to encourage greater entrepreneurial activity and to lessen personal exposure to an increasingly dynamic employment market. Could you comment on the feasibility and usefulness of such new financial instruments?

One of the great strengths of the financial markets in the United States is the extent to which they allow risks to be unbundled and redistributed to those best able to assume them. Indeed, an important development over recent decades is the remarkable extent to which this capacity for risk-repackaging has increased through introduction of new securities. By and large, these new securities have originated in the private sector, with little or no public involvement; indeed, while many newly introduced securities have found a ready reception, others have failed to attract a critical mass of support and so have been allowed to disappear from the financial marketplace. Looking to the future, one could hardly say that all scope for useful innovation has been exhausted. On the contrary, the financial marketplace of ten years from now may look substantially more richer in its range of offerings than today's marketplace. It could well be that the instruments you reference would be well received and will be part of that future marketplace, but that determination is best left in the hands of the private market. Before a successful launch can be engineered, a number of important technical issues will have to be resolved to the satisfaction of the market, including the development of terms to reduce the moral hazard risk that borrowers will work less hard to reduce their debt repayments, the creation of appropriate income indexes to be used for defining claims, and the establishment of adequate lender protections.

Question Submitted by Representative Marcia Blackburn (TN-07):

5. As you know, sole proprietorships and entrepreneurs are a dominant force in our nation's economy and they employ a large number of American workers. In Tennessee, small businesses are the largest employer. I believe wonderful teachers and mentors from the business community contribute to entrepreneurship by encouraging our children to dream big dreams and seek great adventures.

As you are aware, most of our small business associations are reporting a record amount of new business starts. The Small Business Administration had to temporarily halt the 7(a) loan program because of a record demand. Every day we hear of more people choosing to become a sole proprietor and hanging out their shingle to open a business with one, two, or three employees. Furthermore, women are the fastest growing sector of the small business economy.

I would appreciate if you would elaborate on a question I have in response to your testimony. Knowing and realizing that small business is where our economy has its nexus of growth, how do you think we can best account for these new business starts and sole proprietorships? Because jobs such as these do not show up in payroll numbers and we generally have to wait for a tax filing to know they exist, do you have any suggestion on what the current impact on the economy might be and how we should account for the number of businesses and jobs that are being created?

New business starts and sole proprietorships are important components of the dynamics of the labor market. According to the latest available data from the Bureau of Labor Statistics (BLS), roughly 1-1/2 million jobs were created at newly opened establishments in the third quarter of 2003, about 20 percent of the total number of jobs created that quarter. Of course, job losses related to the closing of establishments (many of which are small businesses) are sizable as well, and were also equal to roughly 1-1/2 million in that same quarter.

Capturing the net employment changes associated with new business starts and business failures in a timely manner poses a challenge to the BLS. To keep their sample as up-to-date as possible, the BLS adjusts the sampling frame for the payroll survey twice yearly using unemployment insurance (UI) tax records in order to bring newly formed establishments into the sample and eliminate no-longer-operating establishments from the sample. However, the BLS receives these UI tax records with some lag, and thus this updating of the sampling frame cannot capture the month-to-month contribution of new establishments to payroll employment in "real time." To address that problem, the BLS uses a statistical model to estimate the net employment changes at new and expiring establishments each month for the period following the latest benchmark. While the use of a statistical model is clearly less desirable than actually sampling such establishments, comparisons of the monthly estimates of payroll employment to UI tax records suggest that this "net birth/death adjustment" has generally done a good job of capturing the net contribution of new establishments to employment growth.

With respect to sole proprietorships (or unincorporated self-employed), as well as partnerships, the BLS estimates employment each month using household responses from the Current Population Survey, commonly referred to as the "household survey." These estimates indicate that the number of self-employed individuals has increased by about 50,000 over the past year.

In short, the current employment statistics do make an effort to account for employment changes associated with new business starts and sole proprietorships. Although the adequacy of these BLS procedures always bears watching, there would not seem to be any reason at this time to think that the data are failing to reflect this source of employment growth.

Questions Submitted by Representative Denise Majette (GA-04):

6. Chairman Greenspan, you have said that "Ethics should not be clothed as what is really protectionism" and that you wish we had the capacity to be a multilingual society. You seem to be indicating that we need more, rather than less, interaction with our trading partners. I wonder if you would expand upon the benefits of becoming a more multilingual society would have on our general fiscal situation, domestic job growth and international trade. Some have suggested that we should take resources from the defense budget for arms development and redirect them into early childhood education in order to teach children two languages at very early ages, when they can most effectively learn more than one language. I believe such a program would enable our nation to better compete with other, multilingual countries. In addition, by educating our children in the languages used by other countries, we could address a very serious national security need by increasing the supply of interpreters for intelligence gathering purposes. I would like to hear your comments regarding the benefits of increased funding for such early childhood programs.

One of the most important trends of recent decades has been the increasing integration of the global economy. On the whole, this development has brought enormous benefits to the United States, and there seems every reason to believe that the process will continue in coming years. All of us will be well served to consider how best to prepare for that deeper integration. Certainly, greater language skills are important. The setting of priorities in spending, however, is a matter for the Congress to decide.

7. Productivity in recent years is very high. We can make more goods for the same amount of work, or to put it another way, we can produce the same amount of goods for less work. As I understand it, the massive layoffs we have seen during this same time period are largely not a result of increased outsourcing, but rather are a direct result of these productivity gains. And yet, productivity is said to lead to a higher standard of living.

Mr. Chairman, is it the case that productivity gains only benefit those who are still working, and does not rising productivity lead to greater disparities between those people who are working and those who are not? Is it possible for us, as a nation, to become so productive that we need not have full employment to provide sufficient goods and services for the economy?

It seems to alleviate the effects of higher productivity, it would be reasonable to reduce the work done by each worker by expanding overtime protections to more workers, reducing salaried positions, shortening the workweek, or otherwise finding a way to spread the available work to more individuals.

Barring alterations in these policy decisions, a cultural shift toward fewer individuals seeking employment, students entering the workforce later, or people retiring sooner, the inevitable result of higher productivity is fewer availability, and the impact expanding over time to more categories of workers would have in decreasing this impact.

Strong productivity growth has likely contributed to the outsized pace of layoffs and the lack of hiring seen during the past several years. Many business managers, apprehensive about the economic outlook, evidently focused on restoring profitability by cutting costs and restricting their hiring. That said, there is no reason to believe that strong productivity growth results in fewer jobs over the longer run. As I noted in my testimony, over the long sweep of American generations and economic change, we simply have not experienced a net drain of jobs to advancing technology. The unemployment rate in the United States has averaged less than 6 percent since World War II with no apparent trend, and real earnings have consistently trended higher over time. These facts indicate that the American economy, aided by the flexibility inherent in our economic system, has been able to successfully adapt to economic change, and as a result, has been able reap the benefits of the higher living standards generated by rising productivity.

It is also not the case that productivity gains only benefit those who are working. Stronger productivity growth creates greater economic wealth, helps to restrain inflationary pressures, and enables businesses to bring new products and services to the marketplace, thus benefiting society as a whole. Nonetheless, many of the returns to higher productivity do accrue to workers, and those who are displaced from their jobs by technological change suffer severely from this economic disruption. In this regard, it is crucial that we not inhibit the efficiency of labor markets; that efficiency has been essential to ensuring that unemployed individuals return to the workforce as quickly as possible. In particular, I do not believe that the goal of boosting employment can be effectively accomplished by limiting the number of hours an individual can work each week or through other regulations on labor market activity. Attempts at such restrictions in other countries do not seem to have been effective at reducing unemployment and arguably have resulted in lower productivity and higher unemployment than would otherwise have occurred.

Instead, we need to assist workers in preparing for the inevitability of economic change. It is difficult to predict precisely what types of jobs will be available or exactly what types of skills will be in high demand in the years ahead. But what history tells us is that those people who are most educated, who can write well, who have capabilities in math and science, or have strong cognitive skills, will be best positioned to take whatever jobs are created. Clearly, many workers already recognize this reality and are actively engaged in efforts to learn skills that build on their previous work experiences or to acquire new skills. As I have often noted, community colleges, which have been especially successful at providing the education and training needed to move from one occupation to another, play an important role in this process. But improving the quality of our high schools and encouraging more youths to enroll in our "second-to-none" higher-education system will also need to be important elements if we are to succeed in this effort.

○