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DEFENDING AND INVESTING IN U.S. COMPETITIVENESS

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SUBCOMMITTEE ON FISCAL RESPONSIBILITY AND ECONOMIC GROWTH

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WEDNESDAY, JULY 14, 2021

U.S. SENATE,
SUBCOMMITTEE ON FISCAL RESPONSIBILITY
AND ECONOMIC GROWTH,
COMMITTEE ON FINANCE,
Washington, DC.

The hearing was convened, pursuant to notice, at 2:10 p.m., via Webex, in Room SD–215, Dirksen Senate Office Building, Hon. Elizabeth Warren (chair of the subcommittee) presiding.

Present: Senators Wyden, Brown, Whitehouse, and Cassidy.

Also present: Democratic staff: Sally Laing, Senior International Trade Counsel; and Catherine Laporte-Oshiro, Economic Policy Advisor for Senator Warren. Republican staff: Owen Morgan, Policy Advisor for Senator Cassidy.

OPENING STATEMENT OF HON. ELIZABETH WARREN, A U.S. SENATOR FROM MASSACHUSETTS, CHAIR, SUBCOMMITTEE ON FISCAL RESPONSIBILITY AND ECONOMIC GROWTH, COMMITTEE ON FINANCE

Senator WARREN. This hearing will come to order. I apologize for our delay in starting, but thank you. Good afternoon. Welcome to this hearing before the Subcommittee on Fiscal Responsibility and Economic Growth. I am very pleased to be working with Ranking Member Cassidy on this hearing on defending and investing in U.S. competitiveness.

So how does America compete in a global economy? For too long the answer has been some variation of "help giant corporations make more money." Big multinational corporations have no loyalty to our Nation. They say, quite openly, their loyalty is to their shareholders, and about 40 percent of the shareholders of publicly traded companies are not Americans.

These multinational corporations pursue profits, even if those profits come at a cost to American workers or to our environment. It is not the job of the U.S. Government to work to boost profits of big multinationals that have no particular loyalty to the United States. Instead, the goal of economic competition should be to make our domestic economy strong, and to raise the standard of living for the American people. That means investing in American jobs and American workers. And here is the best part. If we give American workers the tools they need, they can compete with anyone, including global economic rivals like China.

Economic competition is also political competition. Fair competition can produce and spread the best ideas. We have a chance to show China and the whole world that an American approach that invests in and empowers workers is the most effective way to compete.

There are two aspects of global competitiveness that I would like to focus on in this hearing. The first is that, in order to compete in a global economy, American workers need to have a fair set of trade rules, which they do not have right now. Our existing trade rules have undercut our workers and promoted offshoring and a global race to the bottom in labor and environmental standards. And that is because, for decades, the U.S. Trade Representative has represented big multinational corporations while workers, environmentalists, and other parts of the diverse American economy were pushed to the side, with their interests and concerns given second-class status.

That needs to stop. U.S. trade policy needs structural reforms to ensure that it reflects the interests of all Americans, not just a handful of corporations trying to maximize short-term profits.

The second reason why workers are struggling against international competition is that we have failed to make critical domestic investments in our workforce. We know that American workers, given the right tools, can out-compete China and every other country in the world. China offers a clear counter-approach. It fundamentally devalues and disempowers its workers by barring them from organizing, by pressing ethnic minorities into forced labor camps, by making migrant workers second-class citizens, and by leaving working families to go it alone on child care.

This has helped China cut production costs in the short term, but there are long-term costs. The Chinese Government recognizes that such an approach cannot build an innovative workforce, a strong middle class, or sustainable economic growth. Now China is desperately trying to invest in its human capital to fuel development, especially given its aging population, recognizing that these investments are crucial to China's future.

This is the moment for the United States to step up. We can and we must do better for our workers. It is the right thing to do. It is the competitive thing to do. And it is the only way to build a strong future for our Nation and our people.

Specifically, our investments in green technology should center on good jobs and building a top-quality workforce. My Build Green and Buy Green bills would do exactly that. These bills, and other clean-energy investments with strong labor provisions, should be included in the infrastructure package that Congress is working on now. Doing so is good for the environment, good for the economy, good for workers and their families.

Similarly, we need to give American workers the security they need to be able to do their jobs and care for their families. Universal, high-quality, affordable child care and early education are investments in our current and our future workforce, working parents, and their children—and a far better way to compete with China than endless expansion of our spending on the U.S. military.

We need $700 billion for child care in the infrastructure bill. It is a critical way to improve our global economic competitiveness.

Finally, I was glad to see President Biden's executive order last week which takes critical steps to promote competition, strengthen antitrust enforcement, and tackle consolidation and anticompetitive practices. Reigniting competition will make markets work better for American families and workers at the same time that it bolsters U.S. competitiveness.

I am looking forward to discussing these issues today and working with my colleagues and the administration to make sure that America's workers can compete in a global economy.

Next, I will turn to the ranking member, Senator Cassidy, for his opening remarks.

[The prepared statement of Senator Warren appears in the appendix.]

OPENING STATEMENT OF HON. BILL CASSIDY, A U.S. SENATOR FROM LOUISIANA

Senator CASSIDY. Thank you, Chair Warren. Thank you to all the witnesses. We were having a mini-hearing before Chair Warren spoke up, and just based on the mini-hearing, it is going to be very interesting. So I thank you all.

We, together, are just concerned about how does the United States and the rest of the world deal with China, which has many advantages of talented people, a large economy, that is quite willing to—how to put it?—break, defy, ignore international norms of behavior, and in so doing, achieve a competitive advantage over other countries that choose to acknowledge those international norms and behaviors.

So strengthening U.S. competitiveness in the face of a country willing to do something such as that is something which should ignite all Americans. And it is our responsibility in Congress to defend our Nation's workers, citizens, and interests.

So, common ground. We all recognize that China has been acting with impunity, and in part because countries around the world have been unwilling to act. But nonetheless, we suffer the consequences.

There should be a robust discussion about China's role as a primary source of the fentanyl that flows into the United States, killing tens of thousands of Americans every year; and about counterfeit medical products and other goods that put Americans' health and lives at risk, like the counterfeit PPE that flooded Customs facilities during the pandemic.

We should examine China's surveillance efforts and the potential for that to grow internationally as countries around the world are encouraged to use Chinese-developed equipment for 5G networks and other things.

We should also look at China's government-backed and -operated blockchain-based service network, as well as their collection of vast amounts of genetic material.

Another thing of interest is that China right now poses the greatest global threat to climate change. China's massive carbon emissions for every year since 2012 have exceeded the combined U.S. and European Union carbon emissions combined—put together, China's exceeds.

China continues to build—and although China is committed to lowering their emissions, peaking out in 2030, they have continued to build outdated and polluting coal-fired power plants throughout the developing world; if you will, exporting a problem.

A particular point of concern is China's blatant dismissal of international trade rules and compliance with standard labor and environmental practices. Chair Warren has mentioned forced labor. We could also speak of forced child labor and the absence of workers' rights. The United States does not have a trade agreement with China, so there are no standards for environmental or worker protections such as those that exist in the USMCA or the CAFTA-DR, so in a sense, that serves to lower the cost of production in China relative to those countries.

Put differently, the cost of compliance that Mexico and CAFTA-DR countries have to invest for environmental and labor protections, China does not. Lowering their cost of production, if you will, incentivizes companies to move to China away from those countries. While I cannot say it is causally related, it is temporally related that between 2017 and 2019 China's foreign direct investment inflow increased from $136 billion to $141 billion, and in the same period the six CAFTA nations saw FDI inflows decrease from $9.7 billion to $8.4 billion.

What's more, the cost of compliance inherent in the USMCA and CAFTA put these trading partners at risk. We need to think about how to adjust that. We try to build economies in Central America that would keep folks in Central America as opposed to migrating here, and yet paradoxically the standards that we ask them to employ—which we should ask them to employ—raise the cost of production and, once more, are an incentive for companies to move operations to China.

There is so much more to discuss, but at this point I will turn it over to our witnesses. I look forward to those who are here, and those who will be participating online.

And once more, thank you, Chair Warren.

[The prepared statement of Senator Cassidy appears in the appendix.]

Senator WARREN. Thank you very much, Ranking Member Cassidy.

So we have a great set of witnesses here today to share their views on U.S. competitiveness. I appreciate all of you being with us.

First, joining us virtually, we have the Honorable Dr. William Spriggs, who is a professor of economics at Howard University, and chief economist at the AFL–CIO, as well as former Assistant Secretary of Labor for Policy. Dr. Spriggs is a leading expert on many critical issues for American workers, including workforce discrimination, national and international labor standards, and the unequal impacts of trade.

Second, we have Roy Houseman, legislative director for the United Steelworkers. Mr. Houseman has been standing up for American workers for decades, including as a part of the USW's Legislative and Policy Department since 2011, and previously as president for USW Local 885 in Missoula, MT.

Third, we have Dr. Mary Gallagher, who is the Amy and Alan Lowenstein Professor in Democracy, Democratization, and Human Rights at the University of Michigan. Dr. Gallagher is an expert in Chinese labor issues as well as Chinese politics, law, and society.

Joining us remotely, we also have Yaya Fanusie, who is an adjunct senior fellow at the Center for a New American Security. His research focuses on the national security implications of cryptocurrencies and blockchain technology.

Next, we have Mr. David Luna, who is executive director of the International Coalition Against Illicit Economies of the Terrorism, Transnational Crime, and Corruption Center at George Mason University. Mr. Luna is a former U.S. diplomat and a national security official, with expertise and experience in transnational crime and illicit trade.

And lastly, Jane Nakano—I am getting that wrong—Jane Nakano joins us virtually. Ms. Nakano is a senior fellow in the Energy Security and Climate Change Program at the Center for Strategic and International Studies. Her research interests include U.S. energy policy and energy security and climate issues in the Asia-Pacific region.

Economic competition from China presents serious challenges for American workers and businesses, but it also presents a call to action. We have a historic opportunity right now to invest in American workers and American families; in other words, to invest in U.S. competitiveness.

So I want to thank you all for being here with us today. I look forward to hearing your testimony. We are going to ask everyone to hold themselves to 5 minutes. You are always welcome to submit longer remarks in writing.

Dr. Spriggs, can we start with you?

Senator CASSIDY. Chair Warren?

Senator WARREN. Oh, please. Of course.

Senator CASSIDY. We have votes at 2:35. So how are we going to inform everybody how we are going to proceed?

Senator WARREN. So we are going to have the ranking member and I trade out. One of us will go, and the other will have the gavel, and we will make it through as quickly as we can. We will find out how fast you move through the halls, and we will try to both be here, but we may be moving in and out.

All right; good. Thank you very much.

And now, Dr. Spriggs, are you with us?

Dr. SPRIGGS. Yes, I am.

Senator WARREN. Good. You are recognized for 5 minutes, sir.

STATEMENT OF HON. WILLIAM E. SPRIGGS, Ph.D., PROFESSOR OF ECONOMICS, HOWARD UNIVERSITY; AND CHIEF ECONOMIST, AFL–CIO, WASHINGTON, DC

Dr. SPRIGGS. Thank you, Chair Warren and Ranking Member Cassidy, for this invitation to give testimony before your committee today on the issue of our Nation's competitiveness. I am happy to offer this testimony on behalf of the AFL–CIO, America's house of labor representing the working people of the United States, and based on my expertise as a professor at Howard University's Department of Economics.

My testimony today will discuss gaps in the U.S. infrastructure compared to our leading trading partners. Many of these gaps do not require Federal fiscal resources but do require updating our institutions and legal structures to meet the challenges of the 21st century. The current crisis of the COVID pandemic highlights our need to improve. While Congress has reacted swiftly and admirably with aid to support the economy, in many dimensions the U.S. is less resilient than our leading trading partners and is set to have major challenges ahead that we can avoid.

Because of Congress, and now the leadership of President Biden, the American Rescue Plan has been well received by those who compare global economic activity. The International Monetary Fund and the Organisation for Economic Co-operation and Development revised their forecasts upward for this year and next based on the passage of the ARP. And given the importance of the U.S. economy to global economic growth, this changed their optimism for a faster global recovery. Yet they both still see a full recovery more than a year away.

Thanks to the rapid deployment of vaccines in the U.S., American hospitalization and death rates from COVID plummeted, and, after being far above the rest of our trading partners, we have finally now surpassed them in having lower rates of severe outcomes from COVID. That has allowed U.S. economic activity to accelerate and, buoyed by the ARP's support of American households, has helped accelerate our job growth. But even if we maintain this current record-setting pace, we will have a hard time getting back to normal levels.

We should shift our focus to the lessons learned and make changes to sustain the recovery to make our economy more resilient. Several of the changes that Congress improvised to fix our labor market safety net show key gaps the U.S. faces relative to our competitors. Our labor market regulations are clearly out of date. The scale at which we needed these institutional changes highlights how, on a regular basis, the resiliency we need is not present.

Among our leading trading partners, we have a lower level of workers covered by collective bargaining agreements. Last year during the pandemic, while we lost jobs across almost all industries, relatively more non-union than union jobs were lost, so the share of workers in unions rose. This presence of a collective bargaining agreement helped firms in two ways. One is that firms could retain workers and negotiate to share the responsibility of making decisions on how to adjust hours and pay and safety conditions. The other is that, for some industries like the airlines, it meant management and workers could present a consensus view to Congress and policymakers on the best way forward to maintain an orderly slowdown of business and keep maximum flexibility to allow for the fast restart.

Similarly, within the trade context itself, researchers have found that industries with stronger collective bargaining structures had fewer jobs lost in the face of the China trade shock of this century than in industries with lower union density. When comparing labor market performance of OECD nations, the OECD's research shows that stronger central bargaining systems outperform weak systems

in wages, employment, and gender and younger workers outcomes, primarily because they are better at smoothing economic shocks and reducing inequality. Updating our NLRA to address changes in the workplace since the 1940s, such as passing the PRO Act, is key.

Our unemployment insurance system was clearly outdated and overwhelmed. Congress reacted, and several studies showed that the extra benefits did not slow people returning to work but helped ensure cash balances for all households, and helped to speed our recovery. A higher minimum wage has made people more resilient.

Another shortcoming is that we do not have paid sick days or holidays. This has hurt the labor force participation of women and their recovery, coupled with our lack of Federal policies to ensure child care. The U.S. stands out as being sixth among the seven G7 nations for women's labor force participation. With an aging economy, we have to have more workers active, and we need those changes to get women at work.

We need to change the global playing field and lead in that. We need a floor for corporate taxation so that we can have all nations provide the help, the labor, and economic support that we need to raise the standards for the world, instead of a race to the bottom that hurts the United States.

Investing in America is necessary, not just investing in our physical infrastructure. Thank you.

[The prepared statement of Dr. Spriggs appears in the appendix.]

Senator WARREN. Thank you very much, Dr. Spriggs.

I am going to pause here with our witnesses. We are joined by our chair from the Finance Committee, Senator Wyden, who is recognized for opening remarks.

OPENING STATEMENT OF HON. RON WYDEN, A U.S. SENATOR FROM OREGON

Senator WYDEN. Thank you very much, Chair Warren, for this courtesy, and the ranking member, Senator Cassidy. We all look forward to going after this issue in an aggressive and bipartisan way.

It seems to me what is so important about your hearing, Chair Warren, and our work with Senator Cassidy, is this is about one basic challenge. America is never going to out-compete China with crumbling roads and bridges and a country full of struggling workers. That is a recipe for decline, and it is exactly what you and I and President Biden want to turn around. That is pretty much what we heard at lunch.

And so I very much look forward to your continued leadership on this, because there are a lot of pieces to the puzzle; for example, the link between physical investment and people. And you and I have talked, for example, about the matter of how important it is to invest in roads and bridges and ports, but at the same time, if people do not have child care—which has been a huge priority for you—then the companies are not going to have people who can move goods from point A to point B.

So I am juggling a lot today, but your ability to integrate the various pieces into a policy that lets us out-compete China is extraordinarily important. Our subcommittee is modest, but with your

leadership, I like to think we are mighty, and I want you to know I am in your camp, and we are going to work closely with Senator Cassidy——

Senator CASSIDY. Wait; so the ranking member is chopped liver? [Laughter.] Is that what you're saying?

Senator WYDEN. I guess—you know, my wife always says, "My husband is infamous rather than famous." But with you two, I feel like I am running with the right crowd, because this is a hugely important subject. It is bipartisan. I am glad that you wanted to do this. Chair Warren and Senator Cassidy have made this a big priority, and I expect that we are going to have lots of hearings like this in the days ahead.

I will have questions for the record, Chair Warren, and I thank you for letting me run in here for a quick minute.

To all our guests, I want you to know that we at the Finance Committee very much value your input. This is not indicative of my manners being boorish on a regular basis. It is just a particularly hectic day. We welcome you. You are in good hands with Chair Warren. Thank you.

Senator WARREN. Thank you very much. I appreciate your being here, Chair Wyden.

So let's go ahead with our witnesses. Mr. Houseman, you are recognized for 5 minutes.

STATEMENT OF ROY HOUSEMAN, LEGISLATIVE DIRECTOR, UNITED STEELWORKERS, PITTSBURGH, PA

Mr. HOUSEMAN. Chair Warren, Ranking Member Cassidy, thank you for the opportunity to testify today on this important topic. As a former trade-impacted mill worker, now legislative director for United Steelworkers, the largest industrial union in North America, it is an honor to be a voice for organized workers in today's discussion, and our union's international president, Tom Conway, sends his regards.

Manufacturing commodities which Americans and people across the globe use every day, from tissue paper to electric buses, is what our union does. It provides a unique lens into defending and strengthening U.S. competitiveness.

With this in mind, my remarks will focus on three strategic efforts: refocusing Federal domestic investments on critical infrastructure, retooling our labor and environmental laws for a 21st-century democracy, and exporting not just our goods but our ideals for a just global economy.

Turning first to domestic investment, the USW takes a holistic approach to our country's infrastructure. Right now, Steelworkers local unions across the country are working with their respective employers in a campaign called "We Supply America" for infrastructure investment.

This campaign emphasizes the critical role USW members play in America's infrastructure supply chain. We are hopeful and anxious to review the details of the $1.2-trillion bipartisan infrastructure framework. We know that new investment is needed when, for example, over 4 million gallons of drinking water is lost from leaking pipes across the country in the time it takes to read my remarks today.

We can do better. In the strong Buy America provisions, our members who work at companies like McWane Pipe stand ready at the crucible to pour melted iron should Congress make this investment. The union also knows that the U.S. can achieve a net zero emissions economy while maintaining production and employment in energy-intensive trade-exposed industries. It will require workers and government and industry working together.

The USW is engaged with our employers and community stakeholders to encourage investments in carbon capture utilization and sequestration, and direct air capture technologies, for example. Domestic investments in infrastructure and industrial capacity will be key to building a 21st-century clean economy. The physical infrastructure is really only one piece to a prosperous, equitable, and just democracy.

Our human infrastructure needs investment. Take, for example, collective bargaining. According to the Economic Policy Institute, the wage gap between high- and middle-wage earners between 1979 and 2017 is roughly one-third higher because of the de-unionization. My written testimony includes several additional examples of human infrastructure, but Congress should start by passing labor law reforms like the PRO Act.

Our country will also need to improve our training programs for both dislocated and incumbent workers. We must improve resources available for adult worker training. The U.S. funding for job training programs is among the worst of all 37 countries in the OECD relative to the size of our economy.

Public spending is less than half the spending levels of Australia, Canada, and the UK, and one-sixth the level of spending in Germany. Meanwhile, today a worker who loses their job to unfair practices from China, where we had a $310-billion trade deficit in 2020, cannot get Trade Adjustment Assistance benefits because of a program reversion. This is unacceptable, and a healthy TAA reauthorization, similar to legislation put forward by Senator Stabenow, is needed. As a past recipient of TAA benefits, I know how important this program can be.

Lastly, we must build a robust worker-centered trade agenda. Trade policy must play a dual role of defending our communities from unfair trade practices, while ensuring that goods and services our workers produce can reach global markets.

For example, our members have fought for their jobs in over 100 antidumping and countervailing duty investigations. And the workers in steel and aluminum manufacturing stand behind the successful section 232 safeguards. For us, getting trade policy right is a must for jobs.

This is vital, as China's Belt and Road Initiative has led to expansions of dumped and subsidized goods entering from third-party countries. However, our trade enforcement tools have not yet been upgraded to contain this growing problem. Fortunately, Senators Brown and Portman are leading with a much-needed update to our trade enforcement law, commonly referred to as the Leveling the Playing Field Act 2.0 or Senate bill 1187.

Ensuring that the U.S. remains competitive while requiring a whole-of-government approach that includes investments in our

country's infrastructure requires workers in an ever-evolving trade policy, and USW members are standing ready to make that future.

Thank you.

[The prepared statement of Mr. Houseman appears in the appendix.]

Senator CASSIDY [presiding]. Thank you, Mr. Houseman.

Chair Warren has gone to vote, so, Dr. Gallagher, I will call upon you.

STATEMENT OF MARY GALLAGHER, Ph.D., AMY AND ALAN LOWENSTEIN PROFESSOR OF DEMOCRACY, DEMOCRATIZATION, AND HUMAN RIGHTS, UNIVERSITY OF MICHIGAN, ANN ARBOR, MI

Dr. GALLAGHER. Thank you for the opportunity to appear before you today to discuss China's working conditions, and how the United States should develop policies to improve our competitiveness while maintaining our values. I speak today as an expert on China's labor and social policies. These are my own views as a scholar on this topic for over 20 years.

As a two-time recipient of a Fulbright award, I am deeply aware of the importance of area studies knowledge and language expertise. I hope the U.S. Government will continue to invest in training American students and scholars in area studies and world languages. It is a national security imperative that we maintain and cultivate this expertise.

My written testimony highlights these key findings. Since 2008, China's workplace laws and policies have expanded considerably to improve employment security and access to social insurance. Since 2009, the Chinese Government has expanded basic pension and medical insurance to both rural and urban residents. We should not ignore the achievements that China has made.

However, in practice China's laws and policies on the books are weakly and unevenly enforced. They often leave out workers from rural areas, informal workers, and workers in the new digital economy. New social insurance policies based on residency, not employment, are insufficient, offering broad but shallow coverage.

Let me expand a bit on the rural/urban divide in China, because it is by far the least understood part of the Chinese economy. Rural workers who live in cities without the legal rights to settle there by and large are not able to take part in the more generous pensions, medical insurance, and educational opportunities that urban residency promises.

While 60 percent of China's population—over 850 million people—now lives in cities, 27 percent, or 230 million people, are still classified as rural and do not have the legal right to settle permanently, nor will their children, even if they are born in the city.

China risks passing on these income, health, and educational inequalities to the next generation, imperiling China's shift to a new development model that is built on domestic demand. Short-term gains by cutting employers' costs risk long-term damage to China's ambitions to become a technologically advanced and innovative economy.

Another important inequality is gender inequality. Since 1990, Chinese women's labor force participation has dropped from 73 per-

cent, one of the highest in the world, to 60 percent. The gap between male and female labor force participation is also widening.

Why? It is not because the men are choosing not to work. Instead, it is due to two main factors: widespread gender discrimination at the workplace, and lack of access to child care. Gender discrimination is exacerbated by the relaxation of China's one-child policy, which now permits Chinese couples to have up to three children. Employers have become much more reluctant to hire women.

Child care that is both affordable and high-quality, particularly for infants and toddlers before preschool, is also very scarce in urban China. Rural Chinese women who migrate to cities for work most often leave their children behind in the countryside to be cared for by relatives, which has long-term negative effects on the health and the educational opportunities of Chinese children, of which two-thirds are stillborn in the countryside.

China's demographic crisis has further pushed the Chinese Communist Party to promote women's roles as wives and mothers, but insufficiently protected their rights at the workplace and insufficiently provided access to affordable child care.

In addition to weak enforcement of law, the current government has launched a severe crackdown on civil society which has impaired Chinese workers' ability to protect themselves. Since 2014, labor NGOs and other activists have been targeted with waves of detention and social media blackouts to end social mobilization around rights in the workplace, demands for freedom of association, and protection from discrimination.

I last testified in front of a congressional subcommittee in 2012, and the difference between now and then is stark. The previous administration in China was far more tolerant of civil society's role and protecting rights at the workplace. But in the current era, civil society has been completely shut down.

Thank you for this opportunity.

[The prepared statement of Dr. Gallagher appears in the appendix.]

Senator CASSIDY. Thank you, Dr. Gallagher.

Mr. Luna, you are recognized for 5 minutes.

STATEMENT OF DAVID M. LUNA, EXECUTIVE DIRECTOR, INTERNATIONAL COALITION AGAINST ILLICIT ECONOMIES (ICAIE), WASHINGTON, DC

Mr. LUNA. Good afternoon, Chair Warren, Ranking Member Cassidy, and distinguished members of the subcommittee. I appreciate the opportunity to testify at today's hearing.

It is an honor to be here on behalf of the International Coalition Against Illicit Economies to outline the array of cross-border security threats that China continues to inspire to harm the U.S. national security, our competitiveness, and the health and safety of our citizens. Today's criminal markets are a multi-trillion-dollar global economy that undermines U.S. competitive policies.

The United Nations has estimated that dirty money laundered from such criminal activities is between 2 to 5 percent of global GDP. China is a common denominator in expanding many of these illicit economies. Fentanyl, which is killing tens of thousands of

Americans each year, is bought by the Mexican cartels and facilitated by Chinese criminal groups.

When the fentanyl illegal trade converges with other criminal activities, the overall threat becomes multiplied many times over, including when China's state-sponsored IP theft and economic espionage of U.S. trade secrets harm our companies at an estimated $600 billion.

Similarly, China counterfeits are flooding the U.S. market, accounting for 80 to 90 percent of all counterfeits seized in the U.S. and globally. The National Association of Manufacturers released a report last year, finding that counterfeits cost the U.S. economy $131 billion and 325,000 jobs in 2019. Across a list of common platforms and Internet marketplaces, fake goods have increased the health and safety risks to all Americans.

During the current pandemic, predatory criminals generated tens of billions of dollars selling fake PPE, mostly coming from China. The proliferation of counterfeit electronics hurts not only our electronics industry, but threatens the safety of our troops, including when they had been found to infiltrate critical military systems and supply chains.

Every IP-protected product can be counterfeited. This is true for all consumer goods and services, but especially for the footwear and apparel industry, in which American brands are highly counterfeited, such as Nike, Under Armour, Polo, and sportswear from the National Football League, Major League Baseball, NBA, and NHL.

Like other forms of illicit trade, the illegal tobacco trade is very profitable for criminal organizations and kleptocratic networks and terrorist groups. The China Tobacco Corporation is by far the largest cigarette company in the world and produces half of the world's cigarettes, which are moved illicitly through free trade sales in unregulated markets and across e-commerce.

Auto parts similarly coming from China, counterfeit auto parts, end up hurting Americans, and really our auto companies like Ford, GM, and Tesla. Illegal logging, fishing, and mining of natural resources not only harm our natural world, but contribute to climate change and the financing of other converging threats.

Chinese criminals are expanding their ties with the Mexican cartels and other criminals in the U.S., Canada, and Latin America, diversifying into areas such as human trafficking and environmental crime. China constitutes the biggest money laundering hub in the world, responsible for about half of the laundering in the world today.

Trade fraud or trade-based money laundering are perfect asymmetrical threat vehicles to transfer money daily by kleptocrats, criminals, and terrorists in the form of trade goods out of the country, by importing goods at over-valued prices, or exporting goods at under-valued prices.

China's Belt and Road Initiative (BRI) footprint tracks some of the biggest illicit trade routes known for corruption and money laundering and an array of traffic contraband that is a conduit for China to expand and bridge. A superhighway of illicit economies globally are advanced via BRI in parts of the developing world with debt traps.

Finally, the call for action: we must heighten the political pressure on China and elevate the global fight against illicit economies in Congress. As part of a national security effort, including a bipartisan congressional caucus, we must empower law enforcement agencies with new legal authorities and develop a national strategy to combat trade-based money laundering and related supply chain criminal infiltration and market penetration.

In closing, China must become a more responsible partner. The corruptive influence that bad actors exploit in today's illicit economies is sabotaging legitimate commerce, American competitiveness, and the economic growth of nations that have played by the global trade system of rules, and by the rule of law.

Thank you. I look forward to your questions.

[The prepared statement of Mr. Luna appears in the appendix.]

Senator CASSIDY. Please, Mr. Fanusie, for 5 minutes.

STATEMENT OF YAYA J. FANUSIE, ADJUNCT SENIOR FELLOW, CENTER FOR A NEW AMERICAN SECURITY, WASHINGTON, DC

Mr. FANUSIE. Chair Warren, Ranking Member Cassidy, distinguished members of the subcommittee, and my fellow panelists, it is an honor to participate in today's meeting. Please allow me to add that, although I do consulting with the private sector on financial technology issues, my comments today are my personal opinion and are not on behalf of any clients.

Today I will explain briefly how the Chinese Government's recent foray into financial technology, including by investing heavily in blockchain technology and piloting a central bank digital currency, is a long-term strategy to dominate the digital economy of the future. This strategy is a new financial dimension to the great power competition between China and the United States, but it is about more than money or currency. It is really about data. Specifically, it is about which country will be most successful at leveraging data for technical innovation, to set the standards for the new global financial infrastructure, and become the anchor for the information revolution that is on the horizon.

No one entity or nation technically owns the underlying infrastructure of the Internet; however, it cannot be denied that the United States' decades-long investment in building it enabled U.S. companies to lead the technological and business growth that arose out of the Internet's information revolution. The clearest example now of China working to upend America's economic dominance on the Internet is its Blockchain-based Service Network, or BSN.

It is a state-driven project that has partnered with Chinese private tech firms to build what the Chinese Communist Party believes is the next generation of Internet infrastructure. The BSN, like the U.S. endeavor to build the original Internet, is a decades-long campaign.

The BSN vision is an Internet environment where data transmits through distributed broadcasting in which separate applications and business systems can simultaneously access and operate on agreed-upon authenticated data. This contrasts with the current Internet process where data is siloed between different systems and moves through the Internet in a linear fashion.

In theory, this upgraded Internet would enable an Internet of things where all digital things can communicate and transact with each other, enabling a new era of digital innovation and economic possibilities, but it would be an Internet where China owns the underlying infrastructure.

Although it is commonly said now that data is the new oil, it is more accurate probably to say that the Chinese Government sees data as the new electricity. Like electricity, data in China is becoming the force to power all applications and economic processes in the country, with individual users and their devices connected to national infrastructure.

The disruptive potential of the BSM is similar to risks to the United States around China's Digital Currency/Electronic Payment, which is a decentralized central bank money project, popularly known as eCNY or the digital yuan. The eCNY is unlikely to displace the U.S. dollar as the top international reserve currency in the short-term or give China an immediate buffer against U.S. sanctions power.

The risk though for U.S. displacement comes from the upper hand that China might gain in the long term by developing cross-border financial transaction infrastructure that a significant group of other countries eventually adopt. Data certainly is becoming the new electricity, but not just in China.

Big data, machine learning, artificial intelligence, the Internet of things, they are all driving technological innovation in most advanced economies. The world is becoming more, not less dependent on data moving through the Internet. This trend is leading to a oneness of data that would appear to power almost every aspect of our public and private lives.

At a time when advanced economies appear to be near the precipice of a fully digitized existence, now might be the best time for the U.S. to assert rules of the road for the increasing role of data in our lives. The first step is to accept the inevitability of this technological advancement in data transmission, while managing its societal shape.

China's preemptive strategy to gain prominence in blockchain-based broadcast transmission of data is a wake-up call for U.S. innovation. The oneness of data does not have to be a tool of tyranny and dehumanization if it is molded by the principles of America's founding policymakers. Business people and other stakeholders must consider a framework for participating in this data revolution in a way that fits with the U.S. Constitution.

Here are a few recommendations for how the U.S. can lead the next data revolution. One, the National Science Foundation should fund a decentralized Internet sandbox for colleges and universities. Two, the Small Business Administration, through its small business innovation research program, should offer grants to U.S. business for fintech R&D that supports both privacy and national security concerns. Three, the United States Federal Reserve should expand its research of central bank digital currencies. And four, the Securities and Exchange Commission should give more regulatory clarity around digital assets and blockchain technology.

Thank you very much for your time, and I look forward to answering your questions in our discussion.

[The prepared statement of Mr. Fanusie appears in the appendix.]

Senator WARREN. Thank you very much. I appreciate your being with us virtually.

And now we have our last witness, Ms. Nakano. I recognize you for 5 minutes.

STATEMENT OF JANE NAKANO, SENIOR FELLOW, ENERGY SECURITY AND CLIMATE CHANGE PROGRAM, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES, WASHINGTON, DC

Ms. NAKANO. Chair Warren, Ranking Member Cassidy, and distinguished members of the subcommittee, thank you for the opportunity to appear before you to discuss the rise of Chinese competitiveness in energy technology sectors, and its environmental and climate implications.

China's emergence as a globally competitive force in energy technology sectors is a complex and evolving story. Despite the country's 2060 carbon neutrality commitment, China continues to be the largest producer and consumer of coal. What's more, China is a major financier and exporter of the high-carbon energy projects in the world. Since 2000, China's two global policy banks have financed over $51.6 billion worth of coal projects globally. In 2020, the share of coal still accounted for 27 percent of China's global energy financing under the Belt and Road Initiative.

A combination of the desire of the Chinese Government to address excess manufacturing capacity at home, the capacity of leading Chinese policy banks to support coal-fired power plant exports, as well as a wave of coal finance bans and the restrictions by multilateral development banks and western governments, has propelled Chinese banks to become a major source of financing for coal-fired power plants in the world.

Unlike its peers in the advanced, industrialized countries, China's leading policy banks are not obligated to abide by the OECD restrictions governing coal-fired finance. In fact, these official Chinese institutions merely subject their coal financing to existing host market environmental regulations.

At the same time, China has become a leading exporter of clean energy technology components. In solar PV value chains, China leads the world in several key segments, including polysilicon and wafer manufacturing. China's presence is less dominant in the wind power supply chains, but China is home to roughly half of the global manufacturing capacity for key wind and power components.

Moreover, today China is not only the largest EV market in the world, but also a leading producer of key EV components such as cathodes, anodes, and separators that are then turned into battery cells. A key factor underpinning China's competitiveness in these clean energy technologies is its commanding position along the supply chains for rare earth elements, other minerals, and metals that are vital to these technologies.

China has cultivated its mineral wealth and developed mid- and down-stream capabilities through various industrial policies. China's preeminence in the mineral supply chains has come with a high environmental cost, however. The mining and the processing

of rare earth elements use a variety of chemical substances, and these activities—with limited environmental protections until the mid-2010s—have led to some known accounts of environmental and health damages in China.

Lastly, nuclear energy is also a sector where China is emerging as a global technology supplier, following a remarkable expansion of its domestic nuclear power generation fleet during the last decade. China plans to expand its nuclear power fleet to 70 gigawatts by 2025, becoming the second largest in the world, only behind the United States.

China is pursuing multiple deals in the world, in its efforts to become a global leader in nuclear power, by combining good-enough technologies with attractive financing that are again outside the bounds of OECD regulations. More needs to be done to address China's financing practices for energy exports that have market-distorting effects against cleaner energy sources and technologies, as well as energy technologies that are manufactured by advanced industrialized democracies like the United States.

Also, while China's contribution to reducing the costs of low-emission technologies is undeniable, their practices in mining and processing minerals that are key to clean energy technology will warrant closer evaluation from the environmental, social, and governance perspectives.

Concurrently, our over-reliance on Chinese supplies of these minerals and metals needs to be remedied. Fundamentally however, the United States needs to do more to enhance its energy technology competitiveness. Being competitive in energy technology sectors means preserving a strong innovation ecosystem, rebuilding the manufacturing base, and securing supply chains.

Moreover, being competitive in clean energy technology sectors is not simply about doing our share in reducing emissions. These technologies are no longer niche, and they already account for hundreds of billions of dollars in investment and consumer spending, with strong outlook for further growth. The endeavor, therefore, has a strategic value to our Nation, as competitive clean energy sectors can augment the U.S. position in the global economy.

Thank you very much.

[The prepared statement of Ms. Nakano appears in the appendix.]

Senator WARREN. Thank you very much, Ms. Nakano. I appreciate your testimony here.

So I now recognize myself for 5 minutes of questions. American workers are the foundation of U.S. competitiveness. When we empower our workers, they drive innovation, productivity, and sustainable economic growth. Investing in workers should be the core of our domestic agenda and our trade agenda.

Too often trade rules undercut workers, which promotes off-shoring and a global race to the bottom in labor and environmental standards. That is not an accident. That is a policy choice. For decades, workers and other activists have been systematically shut out of U.S. trade policy, while big corporations have bought and lobbied their way into writing our trade rules.

Now back in 2001, the U.S. Trade Representative, the Federal agency that is in charge of our Nation's trade policy, spent years

negotiating a trade deal that enabled China to join the WTO and lock in permanent preferential access to the U.S. market for China. So I want to talk a little bit about how that trade agreement worked.

Dr. Gallagher, let me start with you. Before joining the WTO, China had to agree to a bunch of commitments that the United States spent years negotiating, so I want to ask you about those commitments. Did these commitments include enforceable labor protections like requiring that China allow free independent unions, or that China prohibit forced labor?

Dr. GALLAGHER. Thank you, Senator Warren, for the question. China's accession to WTO did not require any commitments regarding labor protections that were enforceable. Most labor issues were either kicked up to the International Labor Organization, the ILO, which does not have strong levers to induce countries to comply with international labor conventions, or they were kicked down to companies to engage in private regulation such as corporate social responsibility protocols, or accreditation by different non-governmental organizations such as the Fair Labor Association, which have had limited impact.

The Trans-Pacific Partnership, which was put forward by the Obama administration but never realized, and of which China was not a member, did try to include stricter labor protections and requirements for freedom of association with Vietnam, a communist country with a similar trade union structure to China's, so that would have been an interesting case. But as you know, the U.S. pulled out of the TPP in 2017.

Senator WARREN. Okay. So what you are telling me is, well, they might have been able to negotiate something when the negotiations were finished in 2001. Instead of making sure that American workers could compete on a level playing field, the U.S. Trade Representative worked with corporate lobbyists to make offshoring U.S. manufacturing jobs to China as cheap as possible, and as easy as possible.

And that meant lots of profits for multinational corporations that wanted to build new Chinese factories that ran on cheap labor, but it meant zero protections for Chinese workers, because that would have raised labor costs for those companies. These new rules meant that investing in Chinese factories was a whole lot more attractive than investing in U.S. factories, and it was a lot cheaper then to buy Chinese imports instead of buying things that were made here in the United States.

This had a big impact on American manufacturing communities, as well as a disproportionate impact on Black workers. Dr. Spriggs, let me ask you, how many U.S. manufacturing workers lost their jobs due to increased imports from China, and how did this impact Black communities in particular?

Dr. SPRIGGS. Thank you for the question. Our best estimates now show 6 million jobs in manufacturing lost for the United States. My work shows a little over a million lost for Black Americans. This disproportionate impact on local labor markets led to other job losses, so that there were many communities that lost all jobs and lowered the share of workers employed in those communities, a

lasting impact from which we have not recovered, even with the expansion since the Great Recession.

Senator WARREN. So 6 million lost jobs from this negotiated trade agreement that was great for multinational corporations, just not good for Chinese workers, and definitely not good for American workers. I really appreciate your important scholarship, Dr. Spriggs.

Now we have a Federal program called Trade Adjustment Assistance to help workers who lose their jobs because of trade deals, if those trade deals are helping our economy overall—that is the idea behind it. We should renew it, update it to make sure it is adequately helping Black and Brown workers. But let's face it, a program like this is a drop in the ocean.

We should be addressing workers' concerns at the beginning, when a trade policy is negotiated, not trying to pay them off once they lose their jobs and their communities have been destroyed.

Mr. Houseman, there is a Labor Advisory Committee that is supposed to represent worker's interests. So I actually just want to go through some questions about this. How much power does this committee really have as part of the trade negotiations? So for example, when the U.S. Trade Rep finalized the 2001 trade deal with China, did the labor negotiators get to have a sign-off on the final version of the bill? Did the Labor Advisory Committee get a chance to weigh in on that?

Mr. HOUSEMAN. No, Senator. They provide advice and comment, but at the end of the day, it really is not meaningful; there is no ability to really stop the process for labor's voice.

Senator WARREN. Okay. So the committee was not permitted to weigh in on this. Let me ask you about another one. How about the workers themselves? Was the draft text of the deal ever published, so workers could see it before it was actually adopted?

Mr. HOUSEMAN. Effectively, no. It is really hard for workers, rank and file members, to see a draft text of trade agreements.

Senator WARREN. Okay. So not the Labor Committee that is supposed to be watching out for labor during these negotiations, not the workers themselves; how about someone else? Did the U.S. Trade Rep, or any other agency, have to do any kind of analysis about how the deal would affect different groups of workers differently, for example by race or by region in the country?

Mr. HOUSEMAN. If you look at the International Trade Commission that just recently did a report on our trade agreements, they highlighted very modest growth, less than 1 percent from these trade agreements, while at the same time highlighting significant job loss in manufacturing. And then, when you really dive through the report, there is no language about communities of color, minority communities, or quite frankly, communities that experience high levels of poverty.

I think about a lot of our manufacturing plants, and about 10 out of our 13 tire plants, for example, are in communities where the poverty rate exceeds the national poverty rate.

Senator WARREN. Wow.

Mr. HOUSEMAN. So you know, these manufacturing plants are key employers for a lot of these workers. So these trade agreements, as you have explained, without this ability to really review

them, and have worker input, and have good analysis for you all to make a firm decision, should we enter into these trade agreements?

Senator WARREN. So thank you. That is very powerful testimony, and I appreciate the help on this, and the data. You know I am glad that the Biden administration is saying all the right things about putting labor, environmental, and equity issues at the center of our trade policy, but if we want trade deals to work for everyone, not just for big corporations, it is not enough to say we are going to put this on one President.

We need to make structural changes to the trade policymaking process to ensure that workers are meaningfully represented at the negotiating table, both now and in all future trade deals. So thank you very much. Thank you.

Ranking Member Cassidy, would you like to ask some questions?

Senator CASSIDY. Absolutely; thank you.

Dr. Gallagher, you mentioned the demographic issues in China, and I noticed that I saw some statistics which suggested that they had underreported the number of COVID deaths, but the population actually maybe went down a little bit, and the number of births actually also decreased.

I have also read that the—you mentioned how women have a difficult time having the same progress in the workforce, but nonetheless, many women work. And so for them to take off from work and have a child—it would take 20 years for that child to enter the workforce.

So someone suggested that they really have begun a bad phase of their demographic period; that is, as soon as 20 years from now we could begin to see a dramatically smaller Chinese population. Would you agree with all that?

Dr. GALLAGHER. Yes, that is a correct understanding of the problem, both the demographic——

Senator CASSIDY. Is your microphone on, or is it my bad ears?

Dr. GALLAGHER. It says it is on.

Senator CASSIDY. Okay. Pull it a little bit closer, please.

Dr. GALLAGHER. That is a correct summary of the demographic crisis that China is facing today, related both to the decline in the percentage of the working population—the very low fertility rates—and then the rapid aging, such that by 2050, without changes which are very hard to achieve in a short period of time, the population of Beijing, the capital of China, could be 50 percent people 65 and older, so China is not——

Senator CASSIDY. In terms of absolute numbers, are there 1.2 billion people now?

Dr. GALLAGHER. One-point-four.

Senator CASSIDY. One-point-four. If current trends continue, what will be their population in 2050?

Dr. GALLAGHER. We believe—but I am not a demographer, so I do not want to get my numbers wrong—but we believe that the Chinese population will begin to shrink in absolute terms over the course of the century.

Senator CASSIDY. Now that is very vague. [Laughter.]

Dr. GALLAGHER. Well, I think one way to think about China's population problems is that it is a country with a lot of people,

right? It is still the most populated country in the world, although India will soon surpass it, but it is more the demographic, the structure of the population balance——

Senator CASSIDY. I get that: the older versus the younger. But in terms of absolute numbers, it would also be much smaller, correct?

Dr. GALLAGHER. Over a longer period of time, yes. It is also imbalanced in terms of its sex ratio as well.

Senator CASSIDY. Male, female, which presumably also affects birth rates.

Dr. GALLAGHER. Exactly.

Senator CASSIDY. So okay, and also I did not pick up until your testimony that there is a rural-urban divide; if you will, the rural area has less potential to be productive.

Dr. GALLAGHER. Yes, the rural area traditionally was agriculture, and starting in the reform period, what started to happen is that hundreds of millions of people who are rural residents in China left for the cities.

Senator CASSIDY. I understand that. They have migrated in.

Dr. GALLAGHER. Right.

Senator CASSIDY. But at the same time, even given that, there is still a difference in access to services and education such that people in the rural area, in particular those who are in the informal economy, you could almost say would be mired in a substandard level of living. So, when we speak about their productive workforce, it is even worse than you might imagine, given their demographic challenges.

There is also this rural/urban divide which leaves a whole segment less productive.

Dr. GALLAGHER. Right. And those rural people, many hundreds of millions of them, are in the cities, but their status is still related back to their birthplace, and that is very difficult to change unless you are very, very highly educated. And so, for most people who are born in the countryside, even if you migrate to an urban area and live there, it is a long time——

Senator CASSIDY. So let me ask, because I have limited time—I do not mean to keep interrupting you. But some of this—I read your testimony—I have a sense that I know. There have been some who have said that, despite everything we have spoken about with all these excellent witnesses, with regard to the advantages of China, their demography is destiny, and it will be difficult for them to overcome their demographic challenges, if we are speaking over the 30-year period or 50-year period. Do you have a sense of that?

Dr. GALLAGHER. The concern is that that population, which is still a large percentage of the population, will be left behind because they do not have the same advantages, particularly in education——

Senator CASSIDY. But I am speaking now in terms of U.S.-Chinese competitiveness, that their competitiveness will be undermined by this demographic challenge, and we are speaking over the next 4 or 5 decades.

Dr. GALLAGHER. Certainly.

Senator CASSIDY. Do you agree with that?

Dr. GALLAGHER. Yes, I do agree with it. But I also do not think that the Chinese Government is unaware of it, and they are trying to address it.

Senator CASSIDY. I understand. But there is only so much you can do to coax people to have children, particularly when your male/female ratio is out of balance.

Mr. Luna, I think I have read that as much as a billion dollars a day flows out of China in terms of capital flight. Is that just a figure I vaguely remember, or what is their capital flight issue?

Mr. LUNA. I think that is correct. There have been numerous international organizations that have those estimates, and they could be conservative estimates.

Senator CASSIDY. Really?

Now, you spoke about trade-based money laundering, and I am very concerned about that. It seems as if trade-based money laundering is a way that somebody could move capital from China to a country outside of China and, if you will, avoid Chinese Government scrutiny, et cetera.

So if you will, their participation in the TBML is not necessarily to further criminal activity, but to get their capital out. Is that possible?

Mr. LUNA. That is a fair assessment, Senator. Going back to your earlier question, if you look at the proceeds of corruption since 1995, they are about $2 trillion. In my testimony earlier, I mentioned that China is a money laundering hub, up to $1.5 to $2 trillion a year.

Senator CASSIDY. Two trillion a year.

Now the Chinese Government is a surveillance society. I guess I am a little bit—how are they so incapable of capturing what might be a conservative estimate of a billion dollars of capital flight per day?

Mr. LUNA. Good question, Senator. It is a little bit complex there. You know, I think the issue of complicity is part of the challenge.

Senator CASSIDY. Now complicity in terms of a corrupt official, or in terms of official——

Mr. LUNA. Not necessarily at the national level. It could very well be a disconnect between the national and the subnational corrupt officials in the various provinces across China, where in fact you see often the highest level of corruption in China.

Senator CASSIDY. So, although we see many things that China does as threatening to the West, this is actually an area that we could potentially—I think you highlight this in your testimony—an area that we could potentially cooperate on, which is to address the trade-based money laundering aspect, which would address in turn their concern about capital flight. Is that a fair statement?

Mr. LUNA. Correct. I do think political pressure by the Congress, the Biden administration, working together bringing China to the table—if you just look at the various illicit markets and weave them together, China again is the common denominator and the major player in the global illegal economy.

Senator CASSIDY. I will come back to that, because I think it is Chair Warren's turn. I am a few minutes over. Can I go a little longer?

So then let me ask, because it seems like we have tension here: on the one hand, they export more albeit counterfeit goods, which helps their economy. On the other hand, this may be a vehicle by which there is capital flight. Is there a tension there, or am I only imagining it?

Mr. LUNA. Well, there is illicit trade, but on the illicit trade—they do exploit illicit trade to move capital and to move illicit proceeds——

Senator CASSIDY. So, even though it is illicit goods, they are just mismatching the pricing between the recipient country and China in order to move capital out?

Mr. LUNA. Correct. It could be over-valuation, under-valuation on its pricing; correct.

Senator CASSIDY. Got it. So the Chinese Government would in that case—they are savvy enough to evade the Chinese Government surveillance, correct?

Mr. LUNA. The complicit corrupt officials, correct.

Senator CASSIDY. Okay.

And then I am through with you, and then we will come back, and I will ask other witnesses about a way to address that.

Senator WARREN. So I would like to talk for a minute about climate change. Climate change poses an existential threat to every living thing on this planet. The United States should be racing to make investments in green technology, green products, green infrastructure, so that we are prepared, and so that our economy grows as the rest of the world needs these products to fight climate change. If we fail to act, then we will spend the coming decades relying on China and other countries to sell us the things that we need to fight climate change, and we will cut U.S. workers out of the jobs of the future.

China is already making these investments, seeking to combat pollution and to dominate new sectors. They are throwing the book at the problem. They are funding basic research, they are subsidizing commercialization of new technologies, and they are using government purchasing power to help new products gain a foothold in their market. Because China understands that the private sector cannot do this alone, they are putting a lot of government muscle behind making this happen.

Dr. Spriggs, do the necessary comprehensive investments in green technology get made without help from the Federal Government?

Dr. SPRIGGS. Thank you, Senator. No, they do not. There is too much policy uncertainty to make this size of investment in the type of research that needs to be taking place, and the fact of recouping the funds, which will be massive in transforming other elements of the economy, make it unlikely that individual firms would make the investment on the scale we need.

Senator WARREN. Okay.

Mr. SPRIGGS. So we really need the government's signal and the government's support to help companies make those investments.

Senator WARREN. So that is a powerful point. It is important to understand what it takes to get a market like this up and running, and it is not as if we have an open field. China is actually already moving into this market very aggressively. You know China, I

think, recognizes this challenge and the opportunity that it presents, so it is using every policy tool it can to develop and deploy green technologies.

But China's approach is missing one key thing—meaningful protection for workers. And that means that China can cut costs of factory production, but it also means that the Chinese workforce is poor, it is less educated, it is less productive, and it is less innovative.

Mr. Houseman, right now Congress is debating making historic investments in clean technology. So I just want to ask you, if we follow China's model—that is, if we make the investments in research, but we do not make the investments in workers and protecting our workers—what do you think happens?

Mr. HOUSEMAN. I believe, when you look at 70 percent of the gross domestic product in the U.S., it is U.S. consumers; it is U.S. workers who are putting this effort together, using their purchasing power to grow the economy. And it means that you need to have good labor standards, right?

I think of Joe Wrona, who testified before the Senate Finance Committee hearing, who had this opportunity where he was working in a Globe facility that made a subcomponent to polysilicone, and unfortunately lost his job to that.

They made $70,000 to $100,000 a year with a good labor contract. And so when we think about these green investments, if we beef up our labor standards, which are historically really low and undermined after years and decades of adverse court cases and efforts to undermine collective bargaining, there is this opportunity to renew our green infrastructure, but we also have to renew our human infrastructure, our labor rights.

Senator WARREN. Well, I think this is a really powerful point. It is something I want us to all drive home and triple underline: that engaging in a race to the bottom with China on labor conditions does not make America more competitive. It undercuts our Nation's greatest competitive advantage: our hardworking, skilled, innovative workforce.

So, this is the reason that I introduced the Buy Green Act with Congressman Andy Levin, which would require that the U.S. Government spend at least $1.5 trillion of the money it spends anyway to buy materials and equipment over the next decade, to use that money to purchase American-made, clean, renewable, emission-free energy products.

This bill includes robust labor protections ranging from Buy America application to better wage standards to paid leave. Too often though, labor protections are just an afterthought on domestic investments, and I think that is the wrong approach.

We need to think about U.S. workers, not at the end of the process, but at the beginning of the process. So let me ask you, Mr. Houseman, if we applied a minimum framework of labor protections across the board to our domestic investments, would that strengthen our global competitiveness?

Mr. HOUSEMAN. Oh, absolutely, Senator. I mean, when you already start for such a low base—like we have some basic protections out there such as Davis Bacon, prevailing wage, these sorts of provisions that help certain industries. But when we start to

talk about expanding labor access and labor rights for workers, it broadens that base, creates that opportunity for workers to collectively bargain for those opportunities: for health care, child care, these things that we talk about endlessly here around the Capitol. But it is an opportunity where we start from a low base, but with the right policy tools we can really make the U.S. worker not only just competitive, but competitive with an ability to thrive. And I think that is the key piece of what you are trying to do, yes.

Senator WARREN. So I love this—you know, it is fair wages, it is Davis Bacon, it is child care, fair labor standards, the ability to have a collective bargaining agreement—all of those help strengthen our workers. And when we help strengthen our workers, we help make our country more competitive.

As you know, President Biden has called for historic investments in the green economy, and that is great, but it is critical that Congress guarantee that those investments create good jobs—jobs that sustain families, jobs that sustain communities for decades to come.

It is not just the right thing to do; it is how we retain our competitive advantage against China, so thank you very much.

Senator Whitehouse, are you with us?

Senator WHITEHOUSE. I am with you, Chair Warren.

Senator WARREN. I recognize you for your questions.

Senator WHITEHOUSE. Thank you very much.

Let me start, if I may, with Ms. Nakano, and ask—well, right off the bat, what are your, or the Center for Strategic International Studies' positions on how important climate action is, and what your favored climate policy is with respect to climate action?

Ms. NAKANO. Thank you very much, Senator. I can only speak for myself. I am not allowed to speak for the Center. I mean, we are a bipartisan policy think tank.

Senator WHITEHOUSE. Good for you.

Ms. NAKANO. If I may, thank you. I do think that all these economies that do have means really need to electrify as many sectors as possible while decarbonizing energy sources as quickly as we can. And in that mix, I think there are many technologies that are new, but also some are very proven technologies that merit closer appreciation for some of the low carbon-emitting profiles, such as nuclear for example.

Also, there is a robust role for renewable energy sources, and——

Senator WHITEHOUSE. Can I ask you if a price on carbon emissions is a policy tool that would be helpful in achieving those goals?

Ms. NAKANO. Yes, I believe so.

Senator WHITEHOUSE. And you said something really interesting in your testimony about electric vehicles, which is that China is beginning to establish a commanding position. As you know, the President's proposal with respect to climate is a very big push in the electric vehicle space.

What advice would you have for us as we try to refine that policy in the U.S. electric vehicles market to try to protect against that commanding position of China's?

Ms. NAKANO. Yes, and thank you for that question. So China is not really there yet. I think in the high-capacity battery and EV sectors, there is no clear winner yet. Some of the things that China

has not done so well include some of the technology advancements they have been working at that they have not really achieved.

But they have been able to give a more clear signal on both the pace of infrastructure development, EV charging stations, but also the type of technical specifications that investors need to be able to go in, but then also clear demand. And looking at the U.S., the recent endeavors, I think we also really need to address the supply chain side as well.

When it comes to the EV sector, as opposed to, let's say the solar PV or wind, China really does not have the absolute dominance on minerals and metals that go into it. For example, when we look at the lithium-ion battery-based EVs, countries like Australia and also Chile have lithium; however, China has invested quite heavily in processing and separation capacities for the last couple decades.

Senator WHITEHOUSE. Protect our supply chain would be an important piece of advice.

Ms. NAKANO. Yes, yes, and I would like to see——

Senator WHITEHOUSE. I am running down on time, so if I may, with appreciation, Ms. Nakano, for your answers, turn to—it will be the same question to Dr. Spriggs and Mr. Houseman. We are hearing an awful lot in this committee about the tax advantages of companies when they offshore, when they send jobs and equipment and manufacturing overseas.

And as a result of that, they pay no or little tax, and as a result of that, they are able to become more competitive. And that is basically the argument for defending tax advantages for offshoring manufacturing. But the argument fails to consider, in my view—and this is where I want your comment—that those big offshore companies are not just competing against foreign companies, they are also competing against American businesses, American companies, American manufacturers that either do not have the scale, or do not have the unpatriotic nature, to move their manufacturing overseas for tax advantage.

And could you focus a little bit on that competitive disadvantage that American businesses suffer when we accommodate and indulge offshoring advantages for big American corporations?

Dr. SPRIGGS. That is absolutely correct, Senator, that issue that you raise, because it is unfair to the domestic manufacturers that, when they increase production, are doing to it export. And it is unfair to the host countries around the world that are low-income, do not have leverage with major corporations, and cannot get the revenues to enforce their labor standards.

It is a lose-lose all the way around if we do not have an agreement on a global minimum tax for corporations. We lose, and we lose by setting up a set of rules that ensures a race to the bottom by making sure that other nations cannot enforce laws.

Senator WHITEHOUSE. Mr. Houseman, keep your answer short, because I am over my time, but I would love to hear you chime in.

Mr. HOUSEMAN. Sure. I think about Mohawk Paper out of New York. They are a small paper producer that makes high-quality specialty papers and are represented by USW. And for us, they are competing in an international market, and they can export to a ton of countries, but should they be competing on tax policy?

It is something that we, the steelworkers, firmly believe is the last thing that workers should be competing on, and they should be competing on the quality of the product they produce. And so that is why we are supportive of your legislation like no tax breaks for outsourcing.

I think it is a strong legislative piece that shows that, when we invest in America and we ensure that we have good tax policy that holds corporations accountable for those sort of offshoring practices, it will not only help domestic workers, but will help domestic companies.

Senator WHITEHOUSE. Thank you.

Thank you, Chair Warren, for this important hearing. I think it is really important to remember the Mohawk Papers of America when you see an American corporation that competes with Mohawk Paper move offshore to get tax advantages to try to make Mohawk Paper's life more difficult. And there is no real competitive advantage there; it is artificial, and it hurts American manufacturing. So thank you, Chair Warren.

Senator WARREN. Thank you very much for joining us, Senator Whitehouse, and the very powerful point that you make.

I want to turn, if we can for just a minute, to cryptocurrency. This is another area where U.S. leadership will be key to setting the rules of the road.

Cryptocurrency has created new opportunities to scam investors. Crypto has helped criminals get paid, and crypto has made the climate crisis worse. Nothing will change unless regulators step in. So let me just pick one example: illegal financial transactions; things like online theft, drug trafficking, evading sanctions, ransomware attacks.

Just last week, hackers infiltrated the networks of potentially thousands of small businesses across the world, including at least 200 American companies, and demanded $70 million in cryptocurrency, the single largest ransomware attack on record so far.

Last year, criminals collected $412 million in ransom through cryptocurrency. This year the number may turn out to be higher. So, Mr. Fanusie, I know you are an expert on the national security implications of cryptocurrency, so I want to ask you, do you believe that cryptocurrencies are a threat to the safety and security of our financial system?

Mr. FANUSIE. Thank you for that question, Chair Warren. I think how I would respond is that, after looking at this issue for quite some time, I would say that this new Internet of value that cryptocurrencies are a part of, is simply a part of our economic ecosystem now. You know, as someone who is focused on illicit finance and national security issues, it is true that I have seen multiple illicit actors—from state actors, whether it is North Korea, to nonstate actors, even a terrorist overseas—dabble, experiment, and gain revenue through this new technology.

But I would say that what we have to do is, we have to have the framework where we see that this is not going away. Cryptocurrencies are not going away. I think we kind of have to maybe double down on what we have done well, what the U.S. has done well.

I have looked at a lot of the anti-money laundering part of this, and interestingly, I think the U.S. leadership has actually been good on AML. I mean, I did a study a few years back where we compared the U.S. and other countries, and how much elicit activity was happening in other regions. And even though there was an absolute value which was maybe more in the U.S. because there was a lot of crypto activity, the percentage of illicit activity was actually smaller in the U.S. compared to other countries.

And the reason is Treasury, FinCEN specifically, had actually put out guidance about how to regulate cryptocurrency businesses. So there are still gaps. There are still issues, but I think, on the AML front, we have to sort of plug the holes maybe a little bit, but I actually have seen progress on that front.

Senator WARREN. I am very glad to hear you say that, because what I am hearing from this is that effective regulation is possible; that the crypto risks are real, and recent ransomware attacks on Kaseya and the Colonial Pipeline may just be the tip of the iceberg here; that we need to update our anti-money laundering infrastructure to keep up. But I think what you are saying is, that is possible. That is something we could do.

Let me see if I can just expand our thinking about this a little. The United States has maintained leadership in global financial markets over the past century. I worry that we risk losing that competitive advantage if we do not take action to address the risks in this rapidly and growing market in crypto.

So, Mr. Fanusie, can I ask you how important it is that the U.S. lead in writing the rules of the road when it comes to regulation of the cryptocurrency market?

Mr. FANUSIE. Chair Warren, it is extremely important because, as I have mentioned, even though I would say we have done well on a lot of the AML front, there are a lot of innovations. This technology sort of moves ahead of regulators, I would say. There are a lot of new types of applications and protocols that challenge our regulatory framework.

So there are gaps there, and I would say that the big concern is that a lot of these new innovations within the crypto space could sort of either get out of hand, or the best innovation that may capitalize on some of this innovation because it is so decentralized, could move elsewhere. It could move overseas.

So it is sort of important for the U.S. to look at this technology, accept that it is really here to stay, accept that a lot of this innovation does not fit into some of our regulatory framework, and then really do the tough diligence of figuring out, well, how should protocols be regulated? How should decentralized applications be regulated? What is the framework that we need to have? And I think the U.S. is going to have to do that, or other jurisdictions may provide more opportunity for entrepreneurs.

Senator WARREN. Thank you very much. I think that is a powerful point. Cryptocurrencies are going to play a significant role in our financial system for years to come. And the United States has two options. You know, we can set the rules of this market ourselves, or we can sit back and let other countries do it.

We have an opportunity to lead the way by fostering a safe cryptocurrency market that respects privacy, but that also miti-

gates illicit activity and protects consumers. So I think we have real challenges in front of us on this. Thank you.

Senator Brown, you are now recognized.

Senator BROWN. Madam Chair, you are going to vote, I understand?

Senator WARREN. Yes. And if I am not back by the time you finish, you keep asking questions. The gavel belongs to you, all right?

Senator BROWN. I do not want the gavel. I just want to keep talking.

Senator WARREN. Okay, keep talking.

Senator BROWN. All right; thank you.

Senator WARREN. Thank you, Senator Brown.

Senator BROWN. Thanks for holding this hearing, and I appreciate, Madam Chair—I know this is your doing that labor is represented at this table. So thank you for doing that, because I do not talk about what happens at Democratic caucuses often, but I will say today at the lunch it was clear that President Biden puts labor at the center, workers at the center of all of his policies, from trade, to enforcement, to wages, to all that. So it is a new day in Washington, and I welcome that, and I thank Chair Warren for doing that.

Let me talk about the PVLT tire case, if I could. Competitiveness starts on a level playing field in Ohio. American steel companies like Cleveland Cliffs are being targeted with unfair trade practices from China.

I did a call today on something that should be as simple and as clean as the Made in America label. We know that company after company—most are not—but enough are cheating and slapping that label on and deceiving the buyer, because they are not products typically in many cases, in some of these cases made in Ohio. Fortunately though the Biden Federal Trade Commission has stepped up and is going to begin to enforce that much, much, much better, especially on e-commerce, than has been done in the past.

As we know—back to Cleveland Cliffs—steel is not the only industry that suffers. This kind of targeted dumping is rampant throughout our economy, including everything from mattresses to solar energy manufacturing. China's goal clearly—it is in their national interest, they see it that way—but their goal is to erode our industrial base.

Cheating is just one way to do that. They also outright steal American IT. They exploit the loss of American innovation that occurs when a product moves overseas. I do not entirely blame the Chinese. I blame this Congress, and Congresses before, who have passed trade laws and tax laws that end up shutting down production in Mansfield and Ashtabula and Dayton, OH and move it overseas.

So, Mr. Houseman, I am glad to support the Steelworkers most recent petition for AD/CVD duties against the dumping in the U.S. Thank you for the work you are doing, and can you elaborate on your experience with the PVLT tire case?

Mr. HOUSEMAN. Yes, Senator. You know the United Steelworkers is the largest union in tire manufacturing, representing workers across the country in PVLT tires. These are the tires that go on your car and your truck, right? And in 2014–2015, the United

Steelworkers filed a petition against China because we had 50 million tires come pumping into the U.S. market, undercutting domestic workers, impacting over 5,000 domestic jobs.

And that petition—as you know, we were successful in getting the duties put in place. Now we are 5 years later, and we have seen strategic investments by China in South Korea, in Thailand, in other countries where we have seen significant increases in PVLT tire imports, so much so that in the last year the United Steelworkers—because they have this union density and are able to file freight cases—they filed a new petition against South Korea, Thailand, Taiwan, and Vietnam, and were successful in that petition.

And we thank you, Senator, for sending a letter in support of that petition. But this became this whole point of Whac-A-Mole, where we stopped dumping from China, but China is now investing in these third-party countries, and now dumping into the U.S. market all over again.

So, this Whac-A-Mole issue is one of the reasons why I was supportive of your legislation and Leveling the Playing Field 2.0, because we have to hold China's Belt and Road Initiative accountable in our trade enforcement laws.

Senator BROWN. Let me take that in a different direction. I am going to go way over my 5 minutes because nobody else is here to stop me.

I was talking to a tire manufacturer last night who said that—I am not sure I fully understand, and you can expand, or any other person on the panel can. Apparently, he said that the tire retread market production is down. We do not have the ability. We have lost jobs in retreading tires because cheap Chinese tires do not have the base to be able to retread, while American tires, Goodyear in Akron for instance, and others, Bridgestone and others, can actually provide the base tire, the core tire, whatever the term is to do that.

I apologize for my ignorance. Is that generally right? Can you comment on that?

Mr. HOUSEMAN. From a top level, yes. You know, our members make—they call them off-the-road tires. Those are the big tires that go on tractors for example. And you know from our membership and what we have heard is that they do some of this retreading work, and what we have heard is that yes, these Chinese imports, they are of a lower quality, and you cannot actually do this retread work.

So ultimately, the energy and all of the effort that is expended here, you are not able to even recycle this product, right? And I think that is why——

Senator BROWN. Reuse.

Mr. HOUSEMAN. Reuse; yes, yes.

Senator BROWN. Thank you.

Dr. Spriggs, I assume you are here.

Dr. SPRIGGS. Yes.

Senator BROWN. I do not see you, but you are on the screen. Okay, good to see you. A connection to Oberlin College; nice to see you.

Ohio workers have paid the price, as you know, Dr. Spriggs, for previous administrations' policies that have eroded our manufacturing industrial base. This administration has a different approach.

I want to work with them to make sure investments in R&D and manufacturing, and clean energy in particular, translate into good-paying union jobs. For Ohio workers that means making investments in the first place to undo the decades of harm to these industries. It also means passing the Protect the Right to Organize Act to make sure workers have a voice in the workplace.

Dr. Spriggs, explain what—potentially this is a really long answer, so make it as short as you can. But explain what the erosion of American manufacturing has done to our economy, and what we do about it moving forward.

Dr. SPRIGGS. It has created—thank you for the question, Senator. It has created this hollowing out of our communities. The impact is not just to the immediate workers who lose their jobs to trade, but it is to the communities. And so, if I did a map and colored red where we have an increase in joblessness, you would see that map light up very heavily in Ohio, but also in other places where we see this big impact of the loss of jobs because of trade.

It means we have to reenvision Trade Adjustment Assistance to understand we must also help communities. Money needs to go for active labor market policies at the worker level so that we can ensure the community can generate enough jobs to make up for the jobs lost. And especially, targeting our young people, we need to have an expansion of WIOA investments and new training and new job opportunities, because that is who gets hurt when we lose these jobs, in addition to the workers who are immediately impacted.

And this slowdown that took place between 2000 and 2008 with the massive expansion and shock of the China trade had implications going even to the recovery that we had from the Great Recession.

Senator BROWN. Thank you. And when you say—using the term "hollowing out" is a tragic sort of term, when you look at how it applies in real life. I know that people on this panel, and the people watching, will know, just sort of intuitively understand, what has happened to Cleveland and Dayton and Youngstown and Toledo, in relation to Cincinnati and Columbus, perhaps a bit less so.

But they won't have heard of so many of the mid-size towns in my State where I grew up: Mansfield, Lima, Chillicothe, Springfield, Ravenna; and smaller towns like Defiance and Freemont and Canton—a little larger city—that have lost so many good industrial jobs.

Where I grew up was a union town, a working-class city where a lot of kids I went to high school with had futures and had an opportunity because they could get good-paying union jobs. Westinghouse at one point had 8,000 manufacturing jobs. General Motors had 5,000. Mansfield Tire had 2,000. Gorman-Rupp—company after company after company, so you are exactly right when you talk about the hollowing.

And my last question, Dr. Spriggs, is for you. You spoke in your testimony about the importance of family policy as infrastructure, not just the narrow definition, which is water, sewer, bridges, high-

ways, but a broader definition of housing and education and broadband and child care and the Child Tax Credit.

Tell me what the expanded Child Tax Credit—and the checks will go out this week; people will see them in their mailboxes this week, probably tomorrow, or by direct deposit. What is that going to mean to working families?

Dr. SPRIGGS. It is going to be very important to working families on both sides of the equation when it comes to child care. We can make child care affordable to all families, and affordable so that the workers in the industry can finally get the kind of wages that they need to help their families.

And so that is why it is so important. We need to increase the labor force participation of American women. We cannot go forward with our population growing older, the population of the United States shrinking, without increasing the labor force participation of women to respond to that.

We rank sixth—sixth—among the G7 nations when it comes to women labor force participants, and as a result of this pandemic, we were pushed back to 1985 for women's labor force participation. We have only made it back to 1988. We cannot continue without having paid leave, without having child care, and without helping families pay for child care so that the workers in the industry can get decent wages.

Senator BROWN. Thank you, Dr. Spriggs.

Senator Cassidy, thank you for your indulgence.

Senator CASSIDY. Thank you, and sorry to be gone so long. It has just been an incredibly hectic day.

Ms. Nakano, one thing that has struck me—you mentioned the increasing greenhouse gas emissions from China, and one thing that has occurred to me is that, as the EU and the United States ratchet down emissions, it only encourages some high-polluting enterprises to move to China.

Would you agree with that assessment?

Ms. NAKANO. Thank you so much for your question, Senator. I think that generally without proper protections, yes, a lot of high-emission intensive manufacturing could move to China. And my understanding is that is why at least the EU is very much interested in coming up with a border carbon adjustment and other measures to ensure that these goods that are manufactured in countries with less-than-desired levels of environmental protections will not then be exported back to societies and economies that do have stringent——

Senator CASSIDY. So let me interrupt you, please, just because we have limited time.

Ms. NAKANO. Sure.

Senator CASSIDY. The point I made in my opening statement is that the requirement by the U.S. of certain environmental and labor standards in CAFTA-DR, USMCA, Columbia Free Trade Agreement, et cetera, effectively works as a subsidy if China chooses to ignore those standards, therefore does not incur the cost of compliance.

And that works against our interest in a variety of ways. Would you agree with that?

Ms. NAKANO. So, I do not follow trade policy agreements closely enough to really have——

Senator CASSIDY. Well, let me phrase it differently. I assume that the reason that coal is being used is that coal is—and particularly if you are not putting in scrubbers for SO_x and NO_x—that is the cheapest form of electricity that can be generated. Is that a correct statement?

Ms. NAKANO. Yes. Coal-fired power plants without proper equipment could be cheapest. Although if I may add, China does have fairly high SO_x and NO_x and also a particulate matter limitation since about half a decade ago.

Senator CASSIDY. Don't I know from—I think I have seen some air quality data that shows that China builds their coal-fired plants on their Pacific seaboard, and that the trade winds blow it away from China over to the U.S. west coast. I was also told by somebody who is a native of Seoul that they have a lot of particulate matter that blows into South Korea from China. So, when you mention that they have these stringent standards, are those stringent standards enforced?

Ms. NAKANO. The enforcement has always been a challenge, yes, whether it is environmental, or even the health side of issues that are associated with many of the energy production activities in China.

Senator CASSIDY. Thank you.

Mr. Fanusie, in my last set of questions with Mr. Luna, we were speaking about how there might be common ground in U.S.-China relations in terms of stopping capital flight. To what degree could using cryptocurrency, because I understand there are some cryptocurrencies that actually—where you typically think of it as a way to launder money, or otherwise move dollars that should not be moved in a certain fashion—there are some cryptos that actually allow for legitimate transactions, if you will, those that can be traced, those that can be ensured not to be tied to the illicit economy. Do I understand that correctly?

Mr. FANUSIE. I think you are in the right direction in that. So natively, cryptocurrencies are usually anonymous, or maybe pseudo-anonymous. There is no identity connected to them. And the way that we address that issue from a regulatory perspective is that we ensure that places where people purchase cryptocurrencies, that those places, those websites—we call them exchanges—that they are regulated, that they are places where they follow anti-money laundering rules, and that users, customers, have to go through a process to be vetted and identified.

Senator CASSIDY. Now what I do not understand, sir, and I am asking this just because I do not know the answer; I just want to learn from the expert.

Mr. FANUSIE. Sure.

Senator CASSIDY. Why would a bad person choose to use that sort of exchange as opposed to another exchange which would allow them to remain anonymous?

Mr. FANUSIE. No. You are absolutely right. They often would, they would prefer to. The challenge is that there are lots of jurisdictions that are not regulating their exchanges, so you are right. I mean, sometimes bad actors do go to the regulated exchange.

They will often do it because there is more liquidity there; it is easier to use.

Senator CASSIDY. So I think I read though in your testimony, or someone's, that China, with their cheap hydroelectric, is a place where Bitcoin people specifically go to mine. Does that give China more insight into—I do not understand the process. Because people mine Bitcoin in China, does that give China a greater ability to monitor the transactions?

Mr. FANUSIE. Well, the thing that is happening in China is, China is actually cracking down on the mining, and it actually maybe relates to your conversation with Mr. Luna, because there is a lot of capital flight. China has actually been threatened by the cryptocurrency trading sector, so really the past couple of years China has tried to stamp it out. They are actually in the middle of a big crackdown, and miners are actually leaving because China is even cracking down on mining.

So I think you are actually going to see a lot of the crypto activity that is happening in China—just because of what the Chinese regulators want—a lot of it is going to leave, move elsewhere in the region.

And so the key probably is to get others in the region to make sure that they are regulating, because if people cannot do exchanges in China, they are going to go to other parts of Asia to do that activity.

Senator CASSIDY. Well, you know I am about to sign this back over to Chair Warren, and I have been kind of stretched today. I have to leave once more. But my question for the record for you, Dr. Gallagher and Mr. Luna, is that there is an opportunity to cooperate with China on the issue of cryptocurrency being used for illicit financing from their perspective, from capital flight.

Is there some way that we can suggest that we work together? I mean, China is a little bit of a frenemy, and I want the accent to be on the "fre" and not on the "enemy." And so, if there is a way that we could collaborate, I would love to think about that, and you three are the ones who are the experts on that.

And so with that, I will turn it back over to Chair Warren.

Chair Warren, I am supposed to be someplace else now again, but I thank you for cohosting this, and a "thank you" to all the witnesses for your testimony, which I read. And each one of you just has really fabulous testimony, so thank you.

Senator WARREN. Thank you very much. I really appreciate it, Ranking Member Cassidy. And I know it has been a tough day with the ins and outs, but we have still gotten a chance to hear from good people, and ask some good questions—so, good.

I am going to ask one more round of questions, if you all will bear with me. I want to talk about, once again, what are the elements of building a stronger economy and competing with China.

Too often in Congress the metric for whether we are making the United States stronger and more competitive in the world gets reduced to the number of bombers, submarines, and missiles we have compared with China, or another country. And the U.S. buys a lot of bombers, submarines, and missiles. Real investment in American competitiveness would mean spending Federal dollars on things that help families succeed economically.

This year, women's workforce participation hit the lowest levels since 1988. Twenty-six percent of women who became unemployed this year said that it was due to a lack of child care. And understand, this problem was highlighted during the pandemic, but the problem has been out there for a long time.

Dr. Spriggs, the United States does not have any program to provide affordable, quality child care to every family who needs it. Is that how other wealthy countries handle this?

Dr. SPRIGGS. Thank you for that question, Senator. The answer to your question is, our competitors learned long ago that infrastructure means, how do I get to work? How is it that I am able to show up in the economy? That does not mean roads and bridges only.

For many workers it means, do I have child care? Do I have help with my parents? Do I have elder-care help? They understood this a long time ago because they took seriously that their populations were slowing in terms of population growth, and they understood that to get people to work means more than roads and bridges.

It means the whole infrastructure, the rules and everything that goes with supporting getting people to work. So it means you have to have access to high-quality child care, elder care, and you must have paid family leave. That is why we are sixth out of the seven G7 nations. They have those policies; we do not. Those two policies—paid leave and help with child care—are the two best known policies for increasing women's labor force participation. We do not do either.

Senator WARREN. Well, that is very powerful. You know, when we do not have child care, elder care, paid family leave, women's workforce participation suffers. Children who need it cannot get quality care. It is too expensive. And providers are paid too little, so that we have a workforce that is barely scraping by and has high turnover doing some of the most important work in our Nation.

Our failure to support working families, and especially working women, has left the U.S. behind. And we are not just falling behind countries like Canada. We are also undermining exactly the qualities that make our workforce competitive with China.

So, Dr. Gallagher, let me come back to you. China is always going to have more workers than we have. China can pay their workers less, and they can spend less on benefits and provide fewer protections for their workers. So just bring this together by talking about what is the American worker's competitive advantage compared with the Chinese workforce.

Dr. GALLAGHER. Well, in my written statement, and also earlier, I did talk a lot about the challenges that China will face related to its own workforce, particularly the rural/urban inequality. American workers are better educated, they are more productive, and there are far less government restrictions on our choices: how many children we would like to have, where we would like to work and settle down.

Access to good schools, good jobs, good neighborhoods, is not based on the town my parents came from, though we do still have significant problems and challenges that I would not ignore related to race and other factors. We also cannot rest on our laurels, be-

cause China is aware of the problems that it faces and is trying to address them.

We need to invest and further improve every child's right to a good education and access to college. Automation and rapidly changing technology require that we invest in basic academic skills. We also need to invest in child care. That is essential to a functioning and flexible labor market in a dynamic economy.

And as a working woman and a mother who has worked both in China and the United States, I have struggled often to find the child care that I need, so I appreciate the attention to the problem. Thank you, Chair Warren.

Senator WARREN. I appreciate it too. I think of our advantages. We have a workforce that is more diverse, a workforce that is better educated, and a workforce that is more skilled. But in order to build on those advantages, we have to make investments in our people.

Those advantages are not accidental. They did not fall out of the sky. They are the result of direct investment in education, in workers' rights. Public schools are free to every family no matter how much or how little money they make, no matter where they live.

In the 20th century we made high school universal, and we invested to make sure that motivated students could go to community college or a public university, get an excellent education without drowning in debt. These investments have frayed over the past several decades, and we have a lot of work to do to restore their promise, but they gave us the most educated and skilled workforce in the world, and that workforce helped us build the strongest economy in the world.

Now we are falling behind, especially when it comes to investing in our littlest ones. So let me just ask you. You will get the last word here, Dr. Gallagher. How does our failure to support working families with child care undermine the advantages that we have built up in our workforce vis-à-vis our competition with China and others?

Dr. GALLAGHER. Well, I think in some ways the problems that we face are very similar to the problem that Chinese families face. The lack of access to child care means that mothers, particularly mothers who struggle to find child care and do more household work than men, particularly in China, drop out of the workforce when they cannot afford it or locate it.

So it hobbles a large proportion of our working population at a time when we cannot risk it. Like China, we face also low fertility rates, we face an aging society, and when women, or men for that matter, drop out of the workforce because they cannot afford good child care, our human capital is underutilized.

So it is not just that worker's individual choices are thwarted. It can hurt the entire economy.

Senator WARREN. I will say it again: child care is infrastructure. It supports our whole economy. I am fighting for universal, high-quality, available child care that will make sure that every child who needs it has access to it, and that people who are child care workers will be paid the wages that they deserve.

Investing in American competitiveness means more than boosting semiconductor production and funding research and develop-

ment. It means more than buying more missiles and more submarines. It means making broad-based investments in American workers and families, including child care. That's how we are going to keep up with our peers. That's how we are going to stay competitive with countries like China, and that's how we are going to build a future for all of our people.

So I just want to thank every one of you for being here today, those who could come in person, those who joined us virtually.

For Senators who wish to submit questions for the record, those questions are due 1 week from today, that's Wednesday, June 21st. For our witnesses, you will have 45 days to respond to any questions.

Again, thank you very much for coming. Thanks for sharing your expertise; we really do appreciate it. This hearing is adjourned.

[Whereupon, at 4:10 p.m., the hearing was concluded.]

APPENDIX

Additional Material Submitted for the Record

Prepared Statement of Hon. Bill Cassidy, a U.S. Senator From Louisiana

Good afternoon and thank you all for being here for today's hearing. Thank you to our witnesses for taking the time to testify today.

Senator Warren and myself had agreed to a bipartisan hearing on defending and investing in U.S. competitiveness against China, which is growing more brazen in its mission to undermine the United States and international institutions. So that is what I will be focusing on in my remarks.

Strengthening our competitiveness in the face of unfair actions from countries like China is an area that unites Republicans and Democrats. It is our responsibility as members of the U.S. Congress to defend our Nation's workers, citizens, and interests.

We should find common ground here. China has been acting out with impunity due to world leaders' unwillingness to act. All the while, the rest of the world is left to deal with the consequences.

We should have a robust discussion about China's role as a primary source of the fentanyl that flows into the United States and ravages our communities, killing thousands each year. We should talk about counterfeit medical products and other goods that put Americans' health and lives at risk, like the counterfeit personal protective equipment that flooded our Customs facilities during the COVID–19 pandemic. We should examine China's surveillance efforts, including their government-backed and -operated blockchain-based service network, as well as their collection of vast amounts of genetic data. We should be discussing the fact that China is the greatest global threat to climate change, whose massive carbon emissions, for every year since 2012, have exceeded combined U.S. and European Union carbon emissions, who have made it a point of foreign policy to build outdated and polluting coal-fired power plants throughout the developing world, further increasing global emissions.

We should discuss how to address these things.

A particular point of concern is China's blatant dismissal of international trade rules and compliance with standard labor and environmental practices. Chinese labor practices include slave labor, forced child labor, and absence of worker's rights. The U.S. does not have a trade agreement with China, and therefore no standards for environmental or worker protections exist like those in the USMCA and CAFTA.

Perhaps related, between 2017 and 2019 China's foreign direct investment (FDI) inflow increased from $136 billion to $141 billion.[1] In that same time period, the six CAFTA nations saw FDI inflows decrease from $9.7 billion in 2017 to $8.4 billion in 2019.[2]

The cost of compliance inherent in USMCA and CAFTA puts these trading partners at a competitive disadvantage relative to China. In practice, this means that goods made in China are subsidized by the permitted lack of worker and environ-

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[1] China Statistical Yearbook 2019, 2019, *www.stats.gov.cn/tjsj/ndsj/2019/indexeh.htm.*

[2] "Foreign Direct Investment, Net Inflows (BoP, Current U.S.$)," The World Bank, *https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?end=2019.*

mental standards. The U.S. would never accept this in such a treaty.[3] Yet this is the playing field we are passively permitting China to exploit.

A main foreign policy goal is to decrease illegal immigration coming from Central America through improving economic opportunity in potential migrant's home countries. As long as China is allowed to undercut the U.S. and these nations economically by ignoring basic labor and environmental norms, pursuing this goal and improving overall American competitiveness will be difficult. We need to start now.

Thanks again to our witnesses. I am looking forward to discussing these issues.

PREPARED STATEMENT OF YAYA J. FANUSIE, ADJUNCT SENIOR FELLOW, CENTER FOR A NEW AMERICAN SECURITY

CHINA'S FINTECH STRATEGY: SEEKING TO DOMINATE THE NEXT DATA REVOLUTION

Chair Warren, Ranking Member Cassidy, the distinguished members of the subcommittee, and my fellow panelists, it is an honor to participate in today's hearing. Please allow me to add that although I do consulting with the private sector on financial technology issues, my comments today are my personal opinion and are not on behalf of any clients.

Today, I will explain how the Chinese Government's recent foray into financial technology (fintech), including by investing heavily in blockchain technology and piloting a central bank digital currency, is a long-term strategy to dominate the digital economy of the future. This strategy is a new financial dimension to the great-power competition between China and the United States. But it is about more than money or currency. It is really about data. Specifically, it is about which country will be most successful at leveraging data for technical innovation, to set the standards for new global financial infrastructure, and become the anchor for the information revolution that is on the horizon. The Chinese Communist Party (CCP) intends to upend the United States' leading economic and geopolitical status by investing in nascent technologies that the United States is not currently prioritizing and building the digital infrastructure that will drive global commerce and shape the evolution of the Internet itself. If the United States does not understand China's fintech strategy and how it fits into seismic technological shifts that are emerging, the United States will not be able to develop an appropriate strategic response and could lose the geopolitical leadership position it has held since the end of World War II. In my testimony, I will explain key elements of China's fintech strategy, how they fit into a continuum of innovations in the world's history of data revolutions, and recommend ways that the United States must adapt and position itself to compete with China in the 21st-century economy. But first, I'd like to start with some historical context.

From the late 1960s and into the early 1980s, a revolution in humankind's transmission of data occurred, slowly. The Internet was born. The infrastructure of the Internet was constructed over decades. It was a quiet data revolution. It happened largely outside the limelight because building a network for computers to talk to each other across great distances had little practical value for the broader population, most of which had no direct access to computers at the time. So, creating the Internet then was not a profit-seeking endeavor at first. Its impetus was military. At the height of the Cold War, the U.S. Department of Defense funded computer science academics and gave them a long innovation leash.[1] However, the DoD funders tethered the research to an ultimate objective: to build computer infrastructure that would support the U.S. military's information and communication needs around the world.[2] The Internet protocol that we all engage in today, known as

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[3] "Workers' Rights and Labour Relations in China," China Labour Bulletin, August 13, 2020, *https://clb.org.hk/content/workers%e2%80%99-rights-and-labour-relations-china.* Xu, Vicky Xiuzhong, "Uyghurs for Sale: 'Re-Education,' Forced Labour and Surveillance Beyond Xinjiang," Australian Strategic Policy Institute, vol. 26, 2020, *s3-ap-southeast-2.amazonaws.com/ad-aspi/2020-08/Uyghurs%20for%20sale%2024%20August%202020.pdf?q0utM5u2Efa0YrzcjinWKIvkzF_IZWMn.*

[1] Ben Tarnoff, "How the Internet Was Invented," *The Guardian,* July 15, 2016, *https://www.theguardian.com/technology/2016/jul/15/how-the-internet-was-invented-1976-arpa-kahn-cerf.*

[2] Defense Advanced Research Projects Agency, *ARPANET: Advancing National Security Through Fundamental Research, https://www.darpa.mil/attachments/ARPANET_final.pdf.*

TCP/IP, emerged in 1983.[3] But it was not until mostly American firms built civilian applications on top of it, such as public websites and private email accounts, that the Internet offered mainstream value and revolutionized the world.

No one entity or nation technically owns the underlying infrastructure of the Internet. However, it cannot be denied that the United States' decades-long investment in building it enabled U.S. companies to lead the technological and business growth that arose out of the Internet's information revolution. This position, however, is being challenged, slowly and steadily, by China. The clearest example of China working to upend America's economic dominance on the Internet is its Blockchain-based Service Network (BSN), a state-driven project that has partnered with Chinese private tech firms to build what the Chinese Communist Party believes is the next generation of Internet infrastructure. The BSN, like the United States' endeavor to build the original Internet, is a decades-long campaign. The BSN vision is an Internet environment where data transmits through distributed broadcasting, in which separate applications and business systems can simultaneously access and operate on agreed-upon, authenticated data.[4] This contrasts with current Internet processes, where data is siloed between different systems and moves through the Internet in a linear fashion. In theory, this upgraded Internet would enable an Internet of things where all digital things can communicate and transact with each other, enabling a new era of digital innovation and economic possibilities. But it would be an Internet where China owns the underlying infrastructure.

Since blockchain technology emerged with the Bitcoin protocol in 2009, many technologists and entrepreneurs have argued that its distributed architecture model could eliminate longlasting inefficiencies in data management and dissemination. In theory, this new way of recording and conveying data can revolutionize financial services, supply chain management, media, and government recordkeeping.[5] In practice, these and other industries have yet to be disrupted by the new technology. So blockchain, also known as distributed ledger technology (DLT), today remains an experimental computer science niche with no single private or public sector entity dominating its development. Yet, it is interesting that, instead of dismissing blockchain as over-hyped and underperforming, China is doubling down on it. To understand why, let's look at China's overall approach to new technologies and the state of global blockchain development over the past few years.

BUILDING INFRASTRUCTURE INSTEAD OF APPLICATIONS

China's research and development (R&D) strategy has two prongs, as described by Yifan He, the BSN's executive director.[6] One approach is to invest in critical technologies that have evident benefits and established applications.[7] Some examples are robotics, semiconductors, and artificial intelligence. However, China faces stiff competition with the United States, which is also prioritizing R&D in these areas. The second approach is to pursue nascent technologies that no country has yet to dominate (and that perhaps most countries ignore). Such technologies may have fewer current applications, but would offer great potential first-mover advantage. Developing blockchain infrastructure is an example of this second approach. Executive Director He also explained that China increasingly prefers to build new underlying technology, rather than develop applications on top of Western-dominated infrastructure. This approach seeks to capture market share at the outset of a relevant new technology. According to He, China's approach is to look 50 to 100 years ahead and then work toward the technological future.[8]

There are reasons why many outside China would ignore or dismiss the BSN. For example, although blockchain technology has received excessive media attention in

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[3] Justin Jaffe, "Happy Birthday, Dear Internet," *Wired,* December 31, 2002, *https://www.wired.com/2002/12/happy-birthday-dear-internet/.*

[4] Yifan He, "Consensus 2021: Rebuilding the Internet with Blockchain Broadcasting," Coindesk, May 6, 2021, *https://www.coindesk.com/consensus-2021-rebuilding-internet-blockchain-broadcasting.*

[5] Sam Wood, "Technology vs. Trust: Why This Wharton Professor Thinks Blockchain's Time Is Yet to Come," *The Philadelphia Inquirer,* March 11, 2019, *https://www.inquirer.com/business/weed/blockchain-kevin-werbach-wharton-school-mit-press-20190311.html.*

[6] BSN, "Understand China's Pursuit in Emerging Technologies," Medium, June 10, 2021, *https://medium.com/bsnbase/understand-chinas-pursuit-in-emerging-technologies-af2104958a4a.*

[7] Arjun Kharpal, "In Battle with U.S., China to Focus on 7 'Frontier' Technologies from Chips to Brain-Computer Fusion," CNBC, March 5, 2021, *https://www.cnbc.com/2021/03/05/china-to-focus-on-frontier-tech-from-chips-to-quantum-computing.html.*

[8] BSN, Understand China's Pursuit in Emerging Technologies.

the past few years, there are no blockchain use-cases that have wide adoption except for cryptocurrency trading and speculation. And the largest U.S. software companies that trumpeted the potential benefits of distributed ledger technology in early 2016 [9] have mostly shuttered their blockchain service offerings by mid-2021.[10] Blockchain has not led to a massively popular software application that is central to daily life and dominates a consumer market. There's no blockchain killer app yet.

However, this failure to achieve blockchain mass adoption and private-sector profitability is similar to what would have happened if U.S. firms had launched Internet service business divisions in the 1970s. Computer networking was a niche technology space with infrastructure that was too immature to support any profitable business applications. IBM was producing computers at that time, but the Internet likely would not have arisen by IBM or any other private firm trying to build global networking infrastructure single-handedly. The Internet arose through computer scientist collaboration where academic researchers iterated upon their protocols, seeking to build common infrastructure for all networked computers. In contrast, in the blockchain space, a wide variety of startups and developer groups around the world have been launching their own blockchain protocols, each one competing with the others and touting its architecture as the best system to eventually deploy new, decentralized applications on the Internet.

The Chinese Communist Party views blockchain technology as strategically important, but its assessment appears separate from the blockchain hype of 5 years ago. It was only in late 2019 that China's President Xi Jinping called on the country to excel in blockchain research and development.[11] In one interview, BSN Executive Director He said that he personally only started looking at DLT in 2018.[12] But much of the global hype around blockchain had already started to fade by this time.[13]

No blockchain killer app has emerged due to the regulatory uncertainty around the technology, the lack of interoperability between blockchain protocols, and the unsustainable costs for startups unable to find product-market fit with unproven tech. However, a cursory study of how the United States developed the Internet through government-funded R&D has likely given the Chinese government a more promising blueprint for leveraging blockchain technology, which is to play the long game and pursue decades-long computer science experimentation and collaboration until universal architecture emerges that can support practical applications. But instead of developing Internet plumbing that no one owns like the World Wide Web,[14] China's vision of an upgraded Internet is more proprietary. The BSN secretary-general commented in late 2020 that the BSN is constructing an online environment where China has "independent intellectual property rights and China controls the rights to Internet access."[15]

DATA IS THE NEW ELECTRICITY

The BSN, as well as China's central bank digital currency, must be understood as part of the Chinese Communist Party's broader fintech strategy. In late 2019, China unveiled a 3-year fintech development plan.[16] That strategy focuses more on data than money. The plan calls for China's financial system to get more nimble

[9] Jamie Redman, "Microsoft and IBM Declare Blockchain Open for Business," Bitcoin.com, February 17, 2016, *https://news.bitcoin.com/microsoft-ibm-declare-blockchain-open-business/*.

[10] Ian Allison, "IBM Blockchain Is a Shell of Its Former Self After Revenue Misses, Job Cuts: Sources," Coindesk, February 1, 2021, *https://www.coindesk.com/ibm-blockchain-revenue-misses-job-cuts-sources;* Joshua Mapperson, "Microsoft Quietly Closing Down Azure Blockchain in September," Cointelegraph, May 14, 2021, *https://cointelegraph.com/news/microsoft-quietly-closing-down-azure-blockchain-in-september.*

[11] "China's Xi Urges Acceleration of Development of Blockchain Technology," Reuters, October 25, 2019, *https://www.reuters.com/article/us-china-economy-xi/chinas-xi-urges-acceleration-of-development-of-blockchain-technology-idUSKBN1X419Y.*

[12] A.J. Cortese, "Red Date Is Lowering the Entry Point to the Blockchain Network for SMEs," KrASIA, April 24, 2021, *https://kr-asia.com/red-date-is-lowering-the-entry-point-to-the-blockchain-network-for-smes-inside-chinas-startups.*

[13] Yaya Fanusie, "The Crypto Space Is Void," *Forbes,* December 18, 2018, *https://www.forbes.com/sites/yayafanusie/2018/12/18/the-crypto-space-is-a-void/?sh=3cad8fad70ad.*

[14] "History of the Web," World Wide Web Foundation, *https://webfoundation.org/about/vision/history-of-the-web/*.

[15] See 24-minute mark, "How Blockchain Technology and BSN Support Fintech Development," Youtube, November 4, 2020, *https://www.youtube.com/watch?v=k9Gtq-j__3U.*

[16] "Chinese Central Bank Releases Fintech Development Plan for 2019–2021," *China Banking News,* August 23, 2019, *https://www.chinabankingnews.com/2019/08/23/chinese-central-bank-releases-fintech-development-plan-for-2019-2021/*.

at acquiring and leveraging data, and to develop a "nationwide integrated big data center."[17] The fintech plan is intertwined with similar CCP directives in recent years promoting the national development of big data analysis and artificial intelligence.[18] The Chinese Government aims to collect and centralize as much data as possible for the state's monitoring and management, whether for economic aims or other party priorities.

China's aspirations to lead the Internet's evolution rely on data innovation. Digitization, intelligentization, and informatization are terms promoted in recent CCP national strategy documents.[19] While these terms differ slightly in meaning, each is a political directive that involves edifying state knowledge with intermeddler data. Although it is commonly said that "data is the new oil," it is more accurate to say that the Chinese Government sees data as the new electricity. Like electricity, data in China is becoming a force to power all applications and economic processes in the country, with individual users (and their devices) connected to national infrastructure.

Data also is the lens through which the United States must judge the geopolitical and economic implications of China's fintech advancement. The best way to do so is to consider what China's fintech architects say about the data architecture they are building. Again, the planning around BSN exemplifies China's wide-reaching data strategy.

For example, throughout the world, most discussion on safety systems for self-driving cars proposes capabilities like simple vehicle-to-vehicle communication to allow cars to check nearby vehicles' current and anticipated movements.[20] Each vehicle would acquire and analyze data emitted from other cars directly, but in piecemeal fashion, through linear transmissions. However, the BSN's designers propose that blockchain-based broadcast transmission would allow all self-driving cars within a set vicinity to exchange and synchronize data simultaneously, allowing for more efficient and comprehensive analysis of road activity.[21] Assuming transportation and safety authorities also access such broadcast data, these ongoing streams of information could feed hazard monitoring, and help emergency response vehicles map quicker routes to crash sites and medical facilities. In China, such data would be distributed to approved parties, but would likely be centralized for government big data analysis. This constant feed of data would also inform machine learning and lead to greater artificial intelligence capabilities for the government and possibly private entities (like Chinese car manufacturers), if given permissions to the data.

The implications for China's transportation system and its automobile manufacturing sector would be straightforward: potentially safer roads and more intelligent vehicles and infrastructure. But these enhancements would likely catalyze adjacent innovation in China's food delivery sector, ride sharing, car insurance, mapping and geolocation software, and countless other areas.

The international implications would arise from the response to one question: will other nations choose to implement this type of transportation intelligence system, run on capable and tested BSN infrastructure? It should not be assumed that such a complex system could be built outside China without years of R&D. If many major cities around the world plug their transportation networks into the BSN, car manufacturers would be incentivized to either make their vehicles compatible with BSN applications or to develop apps run on the BSN themselves. What would start as

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[17] "The Central Bank Issued the 'FinTech Development Plan': Strengthening the Development and Application of Distributed Databases," Blocking.net, *https://blocking.net/14752/the-central-bank-issued-the-fintech-development-plan-strengthening-the-development-and-application-of-distributed-databases/*.

[18] Derek Grossman, Christian Curriden, Logan Ma, Lindsey Polley, J.D. Williams, and Cortez A. Cooper III, "Chinese Views of Big Data Analytics" (RAND Corporation, 2020), *https://www.rand.org/content/dam/rand/pubs/research_reports/RRA100/RRA176-1/RAND_RRA176-1.pdf*.

[19] Elsa B. Kania, Adjunct Senior Fellow in the Technology and National Security Program at the Center for a New American Security, "Chinese Military Innovation in Artificial Intelligence," testimony to the U.S.-China Economic and Security Review Commission Hearing on Trade, Technology, and Military-Civil Fusion, June 7, 2019, *https://www.uscc.gov/sites/default/files/June%207%20Hearing_Panel%201_Elsa%20Kania_Chinese%20Military%20Innovation%20in%20Artificial%20Intelligence_0.pdf;* Katja Drinhausen and John Lee, "The CCP in 2021: Smart Governance, Cyber Sovereignty and Tech Supremacy" (MERICS, June 15, 2021), *https://merics.org/en/ccp-2021-smart-governance-cyber-sovereignty-and-tech-supremacy*.

[20] National Highway Traffic Safety Administration, Vehicle-to-Vehicle Communication, *https://www.nhtsa.gov/technology-innovation/vehicle-vehicle-communication*.

[21] He, "Consensus 2021: Rebuilding the Internet with Blockchain Broadcasting."

a domestic transportation sector innovation in China could transform into a significant hurdle for U.S. automobile industry competitiveness, especially if U.S. regulators prohibit U.S. firms from building BSN compatibility due to national security concerns around data. And as other nations seek the adjacent innovations for other industries operating on BSN's transportation apps, U.S. firms in those industries could also find themselves at a competitive disadvantage. Even if the BSN is somehow constructed in a way where U.S. data is protected from Chinese Government acquisition and regulators allow U.S. engagement, American firms would be forced to develop important business applications on underlying infrastructure run by the Chinese tech sector. This would be the inverse of the relationship between U.S. and Chinese technology firms today.

THE DIGITAL YUAN IS A LONG-TERM CONCERN FOR THE UNITED STATES

The disruptive potential of the BSN is similar to the risks to the United States around China's Digital Currency/Electronic Payment, which is digitized central bank money known popularly as the eCNY. This new project is better understood more as a new Chinese Government-owned data network rather than just as a currency.[22] Like the BSN, the eCNY's implications for economic and geopolitical competition are long term. This central bank digital currency (CBDC) also exemplifies the Chinese Government's pursuit of first-mover advantage in nascent technologies.

The eCNY is unlikely to displace the U.S. dollar as the top international reserve currency in the short term or to give China an immediate buffer against U.S. sanctions power.[23] The U.S. dollar is too central to international trade and China's restrictive monetary policies make the yuan, digitized or not, less attractive for global users.[24]

The risk for U.S. displacement comes from the upper hand that China might gain in the long term by developing cross-border financial transaction infrastructure that a significant group of other countries eventually adopt. The eCNY is only in a pilot stage and its monetary and economic benefits for China are uncertain. What is clear is that China is seeking through the eCNY to build a more data-driven financial environment that would enable more technological innovation in its financial sector. For example, in early 2021, the People's Bank of China announced a domestic call for academic research relating to the implementation of its digital currency.[25] In particular, the PBOC sought input on how smart contracts[26] could be integrated with the eCNY, including what legal frameworks would be needed. The central bank also requested research work on incorporating the state's digital currency with 5G and Internet of things systems in order to spur more innovative payment applications.[27]

Such research and experimentation is likely to give China leading expertise in the global pursuit of CBDCs. This knowledge advantage would put the Chinese Government in position to drive the CBDC technical design and policy standards that other nations adopt. Signs of this are visible now. For instance, China is part of a Bank for International Settlements pilot project with the central banks of Hong Kong, Thailand, and the United Arab Emirates.[28] The project, known as the Multiple CBDC or mCBDC Bridge, is testing cross-border transactions between those central

[22] Matthew D. Johnson, "China's Digital Renminbi Initiative Is a Network, Not a Currency," The Strategist, Australian Strategic Policy Institute, June 16, 2021, *https://www.aspistrategist.org.au/chinas-digital-renminbi-initiative-is-a-network-not-a-currency/*.

[23] "Digital Yuan Gives China a New Tool to Strike Back at Critics," *Bloomberg,* April 20, 2021, *https://www.bloomberg.com/news/articles/2021-04-20/digital-yuan-gives-china-a-new-tool-to-strike-back-at-critics.*

[24] Yaya J. Fanusie and Emily Jin, "China's Digital Currency: Adding Financial Data to Digital Authoritarianism" (Center for a New American Security, January 26, 2021), *https://www.cnas.org/publications/reports/chinas-digital-currency.*

[25] "Fading shuzi huobi chuangxin yanjiu kaifang keti shengqing zhinan (2021 niandu) [Application Guidelines for the Open Project of Legal Digital Currency Innovation Research (2021)]," The People's Bank of China, March 26, 2021, *http://archive.today/t84QT.*

[26] A smart contract is computer code that executes an agreement programmed within a blockchain platform. *See:* Stuart D. Levi and Alex B. Lipton, "An Introduction to Smart Contracts and Their Potential and Inherent Limitations," Harvard Law School Forum on Corporate Governance, May 26, 2018, *https://corpgov.law.harvard.edu/2018/05/26/an-introduction-to-smart-contracts-and-their-potential-and-inherent-limitations/*.

[27] "Application Guidelines for the Open Project of Legal Digital Currency Innovation Research (2021)," The People's Bank of China.

[28] "Multiple CBDC (MCBDC) Bridge," The Bank for International Settlements, February 19, 2021, *https://www.bis.org/about/bisih/topics/cbdc/mcbdc_bridge.htm.*

banks using a DLT platform. The United States does not appear to be closely involved with the pilot project.

Because China is the largest economy with the most progress in CBDC development, it is likely to have an outsized influence in the multilateral organizations that will recommend CBDC prototypes and standardization. This fits squarely with the CCP's strategic approach: gain the first foothold in a nascent technology and dominate its proliferation as the rest of the world adopts it.

The long-term risk for an alternative cross-border payment system to arise should not be dismissed. U.S. adversaries are not the only nation-states seeking to remove the centrality of the dollar to the global economy. Even central banks in U.S. ally countries are looking to lessen the world's dependence on the dollar. In 2019, the governor of the Bank of England suggested that the international community should construct a new "synthetic hegemonic currency" through a network of CBDCs to facilitate international trade in the long run.[29] The mCBDC bridge seems to be piloting that idea.

If the future global financial system is built on the backbone of CBDC infrastructure, then the nation with the most CBDC expertise is likely to influence how the system is run. And although the U.S. Federal Reserve is conducting some initial CBDC research and plans to release a discussion paper on the topic soon,[30] China is clearly leading in this arena. The People's Bank of China has been researching digital currency since 2014[31] and has released over $300 million worth of eCNY to the public in pilots around the country.[32] Those pilot transactions are likely generating immense data for the Chinese Government to analyze and learn from.

THE ONENESS OF DATA

Data certainly is becoming the new electricity, but not just in China. Big data, machine learning, artificial intelligence, and the Internet of things are driving technological innovation in most advanced economies. The world is becoming more, not less, dependent on data moving through the Internet. This trend is leading to a oneness of data that would appear to power almost every aspect of our public and private lives.

The prospect of living in a world plugged into ubiquitous and seemingly omniscient data can seem scary, and for good reason. The risks of undermining privacy, strengthening authoritarianism, and increasing digital financial crime are great as more of our life activity operates online. There are also various social spillover effects from our culture getting more fixated and dependent on our devices, screens, and data feeds.

But at a time when advanced economies appear to be near the precipice of a fully digitized existence, now may be the best time for the United States to assert rules of the road for the increasing role of data in our lives. The first step is to accept the inevitability of this technological advancement in data transmission, while managing its societal shape. China's preemptive strategy to gain prominence in blockchain-based broadcast transmission of data is a wake-up call for U.S. innovation. In order to chart a way forward that is consistent with American values, it is essential to understand the long history of data revolutions.

Data is simply information recorded and conveyed in written form. One of the world's first data revolutions occurred around 3000 BCE when the ancient Egyptians began writing on papyrus. That plant-based papyrus technology allowed for ink to be retained more easily on a portable writing surface compared to writing on walls, stone, and clay. Later, the Egyptians began using parchment made from animal skins as a writing tool. Parchment was more durable than papyrus and it became the medium that members of the early Jewish, Christian, and Islamic tradi-

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[29] Mary Carney, "The Growing Challenges of Monetary Policy in the Current International Monetary and Financial System" (Jackson Hole Symposium, Jackson Hole, Wyoming, August 23, 2019), *https://www.bankofengland.co.uk/-/media/boe/files/speech/2019/the-growing-challenges-for-monetary-policy-speech-by-mark-carney.pdf*.

[30] Lael Brainard, "Private Money and Central Bank Money as Payments Go Digital: An Update on CBDCs" (Consensus by CoinDesk 2021 Conference, Washington, DC, May 24, 2021), *https://www.federalreserve.gov/newsevents/speech/brainard20210524a.htm*.

[31] Fanusie and Jin, "China's Digital Currency: Adding Financial Data to Digital Authoritarianism."

[32] "Spending with China's Digital Yuan Around $300 Million, PBOC Says," Reuters, November 2, 2020, *https://www.reuters.com/article/china-currency-digital/spending-with-chinas-digital-yuan-around-300-million-pboc-says-idUSL1N2HO0B1*.

tions used to record and spread the Abrahamic message.[33] The Chinese are credited with inventing paper from plant fibers and cloth around the second century CE, but for hundreds of years, it was used very selectively and the art of papermaking was a closely guarded skill.[34] It wasn't until the rising Islamic civilization in the eighth century CE learned of paper from the Chinese that papermaking received assembly-line-like production. Thus, the scholars of the Golden Age of Islam wrote and reproduced hand-copied manuscripts on paper to transmit the leading scientific and literary knowledge of their time.[35] However, interestingly, the Chinese were the first to invent paper money during the Tang Dynasty between the 7th and 10th centuries CE.[36] Papermaking spread throughout areas under Muslim control and to Europe by the 11th century through the Moorish influence in Spain.[37] Within a few hundred years, paper mills were common throughout Europe. It is important to note that initially, some European rulers resisted paper, seeing it as an unworthy, heathen-derived form of data transmission, especially unsuitable for Christian religious texts, which continued to use parchment.[38] The civilizational tables turned with Johannes Gutenberg's printing press, invented in Germany in 1440. European church leaders initially rejected the new technology, with clergy in France claiming that books duplicated with movable type were "work of the Devil."[39] However, soon, printing press technology spread throughout Europe. It can be argued that the printing press was the most revolutionary technology the world has seen, perhaps rivaled by the steam engine. More books were printed in the 50 years after the printing press than in the previous 1,000 years.[40] It enabled a flourishing of scientific, religious, and philosophical knowledge. Data transmitted through the printing press eventually sparked the Protestant Reformation and seeded the Renaissance. But it was banned by the Ottoman Empire for hundreds of years, which some say accounted for much of Islamic civilization's scientific and economic decline.[41]

Elements within societies often initially rejected a new technology of data transmission due to the concern that it was associated with unworthy individuals or subversive activity. Special interests typically focused on the new technology's downsides, especially the displacement it could cause to established institutions. Many scribes, for example, were disintermediated by the printing press. Today, many people criticize the proliferation of Bitcoin and other cryptocurrencies due to their easy exploitation by criminal elements. But the broadcast data capability of blockchain is not an easy function to dismiss.

Historically, new data transmission technology, when it was better at recording, preserving and spreading information, and in the long run, more cost efficient, has always won out over legacy systems. Blockchain technology has similar potential. The "broadcast transmission" of the Internet is likely to be the world's next data revolution. This new capability, if it scales up for mass use, would allow for different parties and different technical systems to operate off of the same data, simultaneously. The ability to harness data in unprecedented ways will likely spur new inventions and new occupations, just as the original Internet did. And it eventually would eliminate certain applications, jobs, and business lines. But this data revolution is in its infancy. The United States has time to compete in this technology and influence its development in an American way.

AMERICAN VALUES AND THE ONENESS OF DATA

The oneness of data does not have to become a tool of tyranny and dehumanization if it is molded by the principles of America's founding. U.S. policymakers, busi-

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[33] Keith Houston, "Hidebound: The Grisly Invention of Parchment," Longreads, December 1, 2016, *https://longreads.com/2016/12/01/hidebound-the-grisly-invention-of-parchment/*.

[34] Neathery Batsell Fuller, "A Brief History of Paper," St. Louis Community College, July 2002, *http://users.stlcc.edu/nfuller/paper/*.

[35] Holland Cotter, "SHELF LIFE; The Story of Islam's Gift of Paper to the West," *The New York Times,* December 29 2001, *https://www.nytimes.com/2001/12/29/books/shelf-life-the-story-of-islam-s-gift-of-paper-to-the-west.html.*

[36] Szczepanski, Kallie. "The Invention of Paper Money in China." ThoughtCo, *https://www.thoughtco.com/the-invention-of-paper-money-195167.*

[37] Fuller, "A Brief History of Paper."

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[39] Tom Wheeler, *From Gutenberg to Google: The History of Our Future* (Washington, DC: Brookings Institution Press, 2019), 42.

[40] Keith Houston, *The Book: A Cover-to-Cover Exploration of the Most Powerful Object of Our Time* (New York: W.W. Norton and Company, 2016), 128.

[41] Benjy Cannon, "A Brief History of Disruptive Innovation, Part I," Disruptive Competition Project, August 7, 2013, *https://www.project-disco.org/competition/080713-a-brief-history-of-disruptive-innovation-part-i/#.V081avkrLcs.*

ness people, and other stakeholders must consider a framework for participating in this data revolution in a way that fits with the U.S. Constitution. Rising data ubiquity should be anchored with the Bill of Rights. For example, many former U.S. officials are arguing for a digital dollar.[42] If the United States is to develop its own central bank digital currency system, it must be constructed so that the government's access to data does not violate the Fourth Amendment's protection against unreasonable search and seizure of one's "person, houses, papers, and effects."[43]

Fourth Amendment protection can be threatened by transactions involving digital assets due to their "always on,"[44] trackable nature. Complete access to real-time financial transaction data is not possible in the current banking system where there is no single database (government or otherwise) of everyone's digital transactions. If the United States launches a CBDC, permission to access CBDC data would need to be strictly controlled and compartmentalized so that the government cannot search one's digital person without legal probable cause. And CBDC architects would need to design the system so that personal data discovered even under subpoena power is expunged from monitoring and analysis when an individual is no longer considered a legitimate suspect in wrongdoing. This requires smarter information systems than we have in financial regulatory infrastructure today, but, in principle, could borrow from practices in the intelligence community that mask identities of U.S. persons when disseminating FISA-derived intelligence reporting.[45]

As the U.S. Government and private sector seek to develop decentralized applications powered by broadcast transmission data, both must think through potential scenarios where new technological capabilities would infringe upon key constitutional rights. It will be challenging to build forward-looking guidelines to manage data ubiquity when most innovations are unforeseen. But this is why the United States must advance in blockchain technology research and experimentation. The way to anticipate the risks from a new technology's spread is to pilot its deployment and learn from it slowly, just as the United States did in developing the Internet in the 1970s and 80s. Below are recommendations for how the United States can lead the next data revolution.

- **The National Science Foundation (NSF) should fund a Decentralized Internet Sandbox for Colleges and Universities (DISCU).** The NSF should fund the development of an interoperable blockchain ecosystem where university students and faculty in the United States can build decentralized applications. This would require two phases. The first would be to develop a common architecture across institutions for programmers to build blockchain protocols that talk to one another. The second would be to create and test applications in this academic-only sandbox environment. I found the practical need for such an environment when I taught a college course on blockchain technology at Morgan State University's business school in 2018.[46] My students developed and pitched ideas for decentralized applications to solve long standing business efficiency problems on campus. The class came up with several intriguing business propositions. However, there was no easily accessible platform for students to test out and deploy their ideas, especially since they were not trained blockchain programmers. A nation-wide, academic-only sandbox would provide a low-risk environment for blockchain-related research and collaboration. It would enable students and professors from around the country to work in an interoperable programming environment, share best practices, and iterate on projects. As the functionality of projects on the

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[42] Michael B. Greenwald and Michael A. Margolis, "Why a Digital Dollar Is Good for the World" (Harvard Kennedy School Belfer Center, June 4, 2021), *https://www.belfercenter.org/publication/why-digital-dollar-good-world;* Hon. J. Christopher Giancarlo, "Building a Stronger Financial System: Opportunities of a Central Bank Digital Currency," Statement to the Subcommittee on Economic Policy, Committee on Banking, Housing, and Urban Affairs, U.S. Senate, June 9, 2021, *https://www.banking.senate.gov/imo/media/doc/Giancarlo%20Testimony%206-9-21.pdf.*

[43] "Fourth Amendment: Search and Seizure," Constitution Center, *https://constitutioncenter.org/interactive-constitution/amendment/amendment-iv.*

[44] Tony McLaughlin, "The Regulated Internet of Value," Citibank, June 2021, *https://www.citibank.com/tts/insights/articles/article191.html.*

[45] Office of Civil Liberties, Privacy, and Transparency, Office of the Director of National Intelligence, *Protecting U.S. Person Identities in Dissemination Under the Foreign Intelligence Surveillance Act* (November 2017), *https://www.dni.gov/files/documents/icotr/CLPT-USP-Dissemination-Paper---FINAL-clean-11.17.17.pdf.*

[46] Morgan State's First Blockchain Course Finds Use Cases on Campus, Stephen Babcock, Technical.ly, December 5, 2018, *https://technical.ly/baltimore/2018/12/05/morgan-state-blockchain-course/.*

DISCU system matures, universities could propose to move elements of the sandbox into the open Internet. The aim should be to create open architecture for the world to use, just like the Internet, and not infrastructure wholly owned or controlled by one nation or any other entity. This process would take several years, but would be a critical investment in digital infrastructure for future generations.

- **The Small Business Administration, through its Small Business Innovation Research (SBIR) program, should offer grants to U.S. businesses for fintech R&D that supports both privacy and national security concerns.** The scope of U.S. digital finance innovation is likely to correlate to the extent to which transactions can conform to global regulatory standards for anti-money laundering and counter-terrorist financing. Financial platforms that operate fully pseudonymously are unlikely to scale to mass use due to the regulatory considerations of financial crime risks that come from pseudonymous transactions. And at the same time, as digital transactions attached to personal identification grow in volume and in their relevance to the economy, data privacy is likely to become more vulnerable to exploitation and abuse. Recently, the U.S. Treasury's Financial Crime Enforcement Network (FinCEN) announced it would host an innovation workshop for tech firms to present privacy-preserving technologies that could secure privacy and deter illicit financing.[47] This is a good step to help inform financial regulators about the current innovations available to preserve privacy, but more investment is actually needed to develop such solutions. The SBIR's competitive, private-sector-focused award system would be a fitting way to incentivize small businesses to take on this important digital challenge.[48]
- **The United States Federal Reserve should expand its research of central bank digital currencies.** Digital currency experts working on the Fed's CBDC research have spoken to Congress about a variety of CBDC models and called for more multidisciplinary research.[49] Cybersecurity is likely to be a key concern. But evaluating the appropriateness of a digital dollar should not just be a technical affair. The United States must also consider many complex public policy and social questions relating to privacy, financial crime, and financial access. Instead of just one Fed study, it would make sense for various branches to conduct CBDC research, each focusing on a specific policy or technical dimension of digital currencies. More extensive Fed research will help U.S. public and private sector stakeholders gain expertise needed to navigate the rise of CBDCs, whether the United States creates a digital dollar or not.
- **The Securities and Exchange Commission (SEC) should give more regulatory clarity around digital assets and blockchain technology.** While U.S. anti-money laundering requirements for cryptocurrency exchanges have been clear since FinCEN issued guidance in 2013,[50] securities regulation has been murky to many U.S. blockchain innovators. The threat of SEC enforcement actions[51] has lessened much of the fraudulent and unregistered securities activity that has been rampant in the crypto space, but it also has likely discouraged many legitimate innovative U.S. fintech projects and encouraged some American blockchain entrepreneurs to relocate abroad. To compete in the digital economy race with China, the United States must foster a more innovative fintech environment. It might even be possible to transfer the technical benefits of blockchain technology into conventional finance by tokenizing the regulated securities market.[52] If U.S. securities regulation

[47] "FinCEN to Host Innovation Hours Program Workshop on Privacy Enhancing Technologies," FinCEN, press release, May 26, 2021, *https://www.fincen.gov/news/news-releases/fincen-host-innovation-hours-program-workshop-privacy-enhancing-technologies.*

[48] Small Business Innovation Research and Small Business Technology Transfer Programs, *About: The SBIR and STTR Programs, https://www.sbir.gov/about.*

[49] Dr. Neha Narula, "Building a Stronger Financial System: Opportunities of a Central Bank Digital Currency," Statement to the Subcommittee on Economic Policy, Committee on Banking, Housing, and Urban Affairs, U.S. Senate, June 9, 2021, *https://www.banking.senate.gov/imo/media/doc/Narula%20Testimony%206-9-21.pdf.*

[50] "FinCEN Issues Guidance on Virtual Currencies and Regulatory Responsibilities," FinCEN, press release, March 18, 2013, *https://www.fincen.gov/news/news-releases/fincen-issues-guidance-virtual-currencies-and-regulatory-responsibilities.*

[51] Tom Robinson, "Crypto Enforcement Actions by U.S. Regulators Reach $2.5 Billion," Elliptic, June 21, 2021, *https://www.elliptic.co/blog/https/www.elliptic.co/blog/crypto-enforcement-actions-by-us-regulators-reach-2.5-billion.*

[52] McLaughlin, The Regulated Internet of Value.

does not evolve to account for the new technical and entrepreneurial capabilities offered by blockchain technology and broadcast data transmission, the United States could be hamstrung in a data revolution that is only just beginning.

QUESTION SUBMITTED FOR THE RECORD TO YAYA J. FANUSIE

QUESTION SUBMITTED BY HON. RON WYDEN

Question. The Chinese Government imposes strict capital controls on its citizens, which may cause some who would otherwise rather stay within the rules to use illicit means such as trade-based money laundering (TBML), sometimes through cryptocurrencies, to move money out of China, facilitating illicit finance and organized crime in the United States and Latin America. It seems like there is room for us to cooperate here, since both countries have an interest in stopping TBML and other similar crimes.

Is there some way that we can suggest that we work together?

Answer. No matter where criminals are located, they will exploit jurisdictions with weak financial regulations. So, the most important way for the U.S. and China to cooperate on countering illicit activity associated with cryptocurrencies is to help close the gaps across jurisdictions where cryptocurrency businesses are poorly regulated. This should happen mainly through the Financial Action Task Force (FATF), the intergovernmental body that sets global standards for anti-money laundering and combating the financing of terrorism (AML/CFT). There already is a precedent for U.S.-Chinese collaboration on this issue. The United States prioritized the development of global AML/CFT standards for the virtual asset industry during the U.S. presidency of FATF from mid-2018 and mid-2019.[1] China served as FATF vice president at that time.[2] FATF released its landmark formal guidance on virtual assets in June 2019.[3] China then succeeded the United States for the FATF presidency from 2019 to 2020 and FATF continued to push jurisdictions to strengthen virtual asset regulations.[4] But despite this progress, FATF is still struggling to address some of the innovations in the virtual asset space that challenge longstanding regulatory frameworks. In particular, jurisdictions need clearer guidance on how to account for rising activity around non-custodial wallets, decentralized finance (DeFi) protocols, and decentralized exchanges.

China has taken a hardline approach to the cryptocurrency industry, banning cryptocurrency trading activity in its borders.[5] Some blockchain analysis shows that Chinese illicit finance in virtual assets has decreased in recent years, probably due to this crackdown.[6] But banning the cryptocurrency industry has not been the U.S. approach, nor should it be. I coauthored a study in 2018 that showed that the United States' early and clear AML regulatory guidance is likely to have accounted for much lower percentages of illicit cryptocurrency transactions in the United States compared to other cryptocurrency-active jurisdictions.[7] Although both countries have very different regulatory approaches, they should share with other na-

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[1] "Objectives for the FATF During the U.S. Presidency (2018–2019)." Financial Action Task Force, June 2018, *www.fatf-gafi.org/publications/fatfgeneral/documents/objectives-2018-2019.html.*

[2] "FATF Presidents Since 1989." Financial Action Task Force, *www.fatf-gafi.org/pages/fatfpresidentssince1989.html.*

[3] "Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers." Financial Action Task Force, June 21, 2019, *www.fatf-gafi.org/publications/fatfrecommendations/documents/guidance-rba-virtual-assets.html.*

[4] "Xiangmin Liu's End of Presidency Statement." Financial Action Task Force, *www.fatf-gafi.org/publications/fatfgeneral/documents/chinese-presidency-outcomes.html.*

[5] MacKenzie Sigalos, "China's War on Bitcoin Just Hit a New Level with Its Latest Crypto Crackdown." CNBC, July 7, 2021, *www.cnbc.com/2021/07/06/china-cracks-down-on-crypto-related-services-in-ongoing-war-on-bitcoin.html.*

[6] Samuel Haig, "China Crypto Crime: Still 'Top Ranked' for Illicit Activity, but Crime Is Falling." Cointelegraph, August 4, 2021, *www.cointelegraph.com/news/china-crypto-crime-still-top-ranked-for-illicit-activity-but-crime-is-falling.*

[7] Yaya J. Fanusie, and Tom Robinson. "Bitcoin Laundering: An Analysis of Illicit Flows into Digital Currency Services." Foundation for Defense of Democracies, January 10, 2018, *www.fdd.org/analysis/2018/01/10/bitcoin-laundering-an-analysis-of-illicit-flows-into-digital-currency-services/.*

tions, through FATF, lessons learned from their successes in reducing illicit cryptocurrency crime over time.

On a more tactical level, China and the U.S. could collaborate more effectively on law enforcement operations involving drug money laundering. According to the U.S.-China Economic and Security Review Commission, Chinese law enforcement cooperation with the United States has improved in recent years, but is still lacking at the ground level.[8] In the appendix to a recent report on illicit fentanyl from China, the commission outlined the step-by-step process in which Chinese brokers typically launder funds for Mexican drug cartels.[9] U.S. and Chinese drug enforcement authorities should study this process and assess how launders might be adapting this typology with virtual assets and cryptocurrency exchanges.

PREPARED STATEMENT OF MARY GALLAGHER, PH.D., AMY AND ALAN LOWENSTEIN PROFESSOR OF DEMOCRACY, DEMOCRATIZATION, AND HUMAN RIGHTS, UNIVERSITY OF MICHIGAN

Chair Warren, Ranking Member Cassidy, distinguished members of the committee, thank you for the opportunity to appear before you today to discuss China's working conditions, gender discrimination at the workplace, and ongoing problems in the implementation and enforcement of China's labor and employment laws.

As the director of the International Institute at the University of Michigan (UM), and the former director of the Lieberthal-Rogel Center for Chinese Studies, I would like to acknowledge the important support that I personally have received and that our centers at UM have received from the United States government as a grantee of the Department of Education's title VI awards to promote expertise in area/ international studies and world languages. As a two-time recipient of a Fulbright award, I am deeply aware of the importance of area studies knowledge, language expertise, and time in the field to complete academic research. At the University of Michigan, we have five National Resource Centers (title VI), and six centers are recipients of the Foreign Language and Area Studies (FLAS) fellowships for language training. We train the next generation of scholars, area specialists, foreign policy experts with this funding. I hope the USG will continue to invest in training American students and scholars in area studies and world languages. It is a national security imperative that we maintain and cultivate this expertise.

My testimony will discuss these key findings:

- Over the course of the last 2 decades, China's workplace laws and policies have expanded considerably to improve employment security and access to social insurance. Since 2009, the Chinese Government has expanded basic pension and medical insurance to both rural and urban residents.
- However, laws and policies "on the books" are weakly enforced. They often leave out workers from rural areas, informal workers, and workers in the new digital economy. New social insurance policies based on residency, not employment, are shallow and insufficient.
- Income, health, and educational inequalities between rural and urban citizens threaten China's shift to a new development model that is built on domestic demand and consumption. Short-term gain by cutting employers' costs risks long-term damage to China's ambitions to become a technologically advanced and innovative economy.
- An ongoing crackdown on civil society and social activism has impaired Chinese workers' ability to protect themselves. Labor NGOs, lawyers, and other social activists have been targeted in waves of crackdown to silence grievances and social mobilization.
- In light of new concerns about China's demographic challenges, the Chinese Government has relaxed its restrictive population policies. Women are now encouraged to have two children, but face increasing discrimination at the workplace and lack access to affordable early child care.

[8] Lauren Greenwood, "Illicit Fentanyl from China: An Evolving Global Operation." U.S.-China Economic and Security Review Commission, August 24, 2021, *www.uscc.gov/research/illicit-fentanyl-china-evolving-global-operation.*

[9] *Ibid.*

- There is ample evidence that in addition to forced detention in reeducation camps, China's Muslim minorities are also being forced to work in factories or other worksites located nearby. Forced labor in the Xinjiang Uyghur Autonomous Region has been linked to global supply chains.

BACKGROUND ON WORKPLACE PROTECTIONS AND SOCIAL SECURITY IN CHINA

Nine years ago, nearly to the day, I gave testimony to a hearing on Working Conditions and Workers Rights in China for the Congressional Executive Commission on China. Rereading that testimony as preparation for today provided me with a stark reminder of how much China has changed since 2012. It is a wealthier and more powerful country, but it is also far more closed and politically repressive than it was then. The new labor and social security laws of 2008 and 2010 have failed to deliver their promises of increased employment security and closing income and social security gaps between rural and urban workers. Social activism around workplace protections, better conditions and wages has also been nipped firmly in the bud. Lawyers and labor activists have been detained. Student activists have been harassed and tormented. Nascent civil society organizations and legal aid centers have shuttered. Social activism now brings accusations of treasonous behavior. The nationalistic administration of Xi Jinping has painted these experiments as foreign attempts to destabilize China.

The previous administration of Hu Jintao and Wen Jiabao championed policies of redistribution and social protection. From 2008 until 2012, China's National People's Congress passed several laws to enhance workplace rights, employment security, and access to social insurance and to simplify the dispute resolution system for labor disputes. The Hu-Wen administration also expanded China's social insurance system by developing new pension and medical insurance programs for rural residents and expanding urban programs for the unemployed and those working in the informal sectors. Coupled with the new legal protections in the 2008 Labor Contract Law, these laws and policies significantly expanded the rights "on the books" for Chinese workers. For the first time, the Chinese government began to offer social welfare to its rural residents who at the time still made up over 60 percent of the entire population.

The Hu-Wen administration was also relatively tolerant of social mobilization that advanced their policy goals. There was much greater political openness toward social and legal activism by civil society, including labor NGOs, cause lawyers, and university-run legal aid clinics. The Chinese media was often openly sympathetic toward the plights of workers and covered stories about industrial unrest, corporate malfeasance, and workplace disasters. To be clear, repression and crackdowns still occurred, but in comparison to today's China, there was much greater latitude for civil society actors to advocate for change and to use social mobilization and media attention to gain public support. In sum, there were both top-down and bottom-up levers to improve China's income equality, investments in human capital and social security (Gallagher 2017).

HOW CHINA'S WEAK LAWS AND SOCIAL SECURITY NET THREATEN ITS NEW DEVELOPMENT MODEL

This period of relative political openness and legislative activism ended as Xi Jinping took office in 2013. By the following year, Xi's government had launched a series of crackdowns on social activism, including the 2014 crackdown on labor activism, the July 2015 crackdown on lawyers, and the 2018 crackdown on activist students. The 2008 Labor Contract Law has been weakly enforced such that the main goals of the law, to reduce informality and improve workers' access to social insurance, have been completely thwarted. Rozelle and Boswell (2021) find that informal employment increased from 144 million workers in 2013 to 227 million workers in 2017. At the same time, formal employment has fallen slightly from 181 million workers to 176 million workers. Many of the informal workers are in China's burgeoning digital and platform economies, such that the most dynamic part of the Chinese economy is not held to its legal standards for workplace conditions (Lei 2021; Liu and Friedman 2021).

These developments should be of great concern to the Xi government because these policy failures undermine the new economic development model championed by Xi Jinping and his administration. This new economic model is premised on boosting domestic consumption and relying on China's internal markets to foster new economic growth that is less reliant on both government investment and export markets (Blanchette and Polk 2021). It is also premised on human capital improvements and education inclusion such that the Chinese workforce can withstand the

transition away from labor-intensive manufacturing toward more skills-intensive/ capital intensive manufacturing and services. These goals have only intensified in importance with the downturn in U.S.-China bilateral relations and the 2018 trade conflict.

The academic research on the advancement of informality demonstrates that the Chinese workforce continues to be bifurcated between the relatively well-off and secure formal workforce in cities and the less well-off, less secure informal workforce in rural areas and among the rural workforce temporarily residing in cities. Informality is also a problem for older workers and for workers in China's dynamic digital and platform economies. This problem of informality continues and deepens despite central government policy pronouncements for nearly 20 years to close the gap (Rozelle and Boswell 2021; Yang 2021; Rozelle and Hell 2020; Gallagher et al. 2015; Kuruvilla, Lee and Gallagher 2011).

Research by Scott Rozelle and his research team has also found that work-related inequality and the need for long-term temporary migration by parents has also left a generation of left-behind children who face significant educational and health inequalities, which will have knock-down effects on the next generation of rural residents. So little of these problems are known outside of China that Rozelle and Hell's book on the topic is entitled "Invisible China" (Rozelle and Hell 2020).

In addition to the inequalities between China's urban and rural populations, these challenges thwart the Chinese Government's goal of using urbanization to boost economic growth and consumption. Rural migrants overwhelmingly do not have the education or skills to find formal employment in China's cities (Rozelle and Boswell 2021). Yet formal employment is the key to accessing China's much more generous employment-based social insurance programs that mostly are out of reach for China's rural populations (Yang 2021; Huang 2015). Formal employment is also the key to legal residency in cities, which can ensure access to better educational opportunities for the children of migrant workers and more reliable health care. Permanent legal residency in cities, through hukou transfer, is also the key to intergenerational social mobility. And yet, despite the importance of formal employment to China's future development, the number of people employed in the formal sector has stagnated while informal employment is growing rapidly.

CHINA'S DEMOGRAPHIC CHALLENGES AND RISING GENDER DISCRIMINATION

During the first 3 decades of China's "reform and opening" (1978–2008), rapid economic growth was fueled in part by favorable demographics. China's working population was large in proportion to both dependents and the elderly. It was also overwhelmingly rural and poor. Once internal migration restrictions were lifted, rural migrants could leave the countryside for China's booming cities and development zones. Year after year, hundreds of millions of rural migrants poured into cities and kept wages extremely low. Labor-intensive manufacturing, global trade liberalization, and supply chain consolidation with other Asian economies produced a Chinese growth miracle. This miracle would not have been possible with China's rural migrant workforce (Roberts 2020).

By 2021, China's demographic dividend had disappeared. Population aging and a rapid decline in the birth rate, accelerated by China's restrictive "one child policy," have now produced an unprecedented demographic crisis and imbalances of both age and sex. Due to these restrictive population policies and a traditional preference for male children, boys continue to be born at a far higher rate than girls (Ljunggren 2021). China's demographic structure, especially its rapid aging and declining fertility, pose significant challenges to its future growth and to the sustainability of its pension and social insurance systems.

To address these problems, the Chinese Government lifted the one child policy in 2016, allowing each family to have up to two children. After it became clear that this relaxation did not arrest the decline in fertility, in 2021 the Chinese Government further expanded the birth quota to three children. It also pledged to improve child care and workplace policies for families. However, research on China's demographic crisis and its impact on women, both as mothers and workers, has shown that these more generous population policies are unlikely to reverse China's extremely low fertility rate. Gender discrimination at the workplace, expensive and scarce child care, particularly for infants and toddlers, and economic concerns about the costs of raising children to adulthood all contribute to young women's reluctance to have children (Zhang, Hannum, and Wang 2008; Zhou 2019; Wallace 2020).

As with other labor and employment issues, social mobilization and activism around gender issues have become more sensitive during the Xi administration with several crackdowns on activists and movements (Hong Fincher 2020). Most recently, the online accounts of groups advocating for LGBT rights in China were removed from Chinese social media platforms. In April 2021, accounts of women activists and organizations were also removed. Xi Jinping has put greater emphasis on the role of women as wives and mothers to encourage family values and greater propensity to marry and have children (Deng 2021). It remains to be seen whether the government will also develop concrete policies to supply early child care that is affordable and to deter employers from rampant discrimination against women of child-bearing age.

FORCED LABOR IN THE XINJIANG UYGHUR AUTONOMOUS REGION

The problem of forced labor in the Xinjiang Uyghur Autonomous Region (XUAR) is a separate and distinct problem. The forcible detention of China's Muslim minorities in reeducation and "vocational training" camps has been well documented by academic researchers and the media (Smith Finley 2019; Roberts 2020; Milward and Peterson 2020). Both the detentions and the related occurrence of forced labor are policy choices to assimilate China's Muslim population (Lehr and Bechrakis 2019). The government envisions participation in factory or agricultural work as a mechanism to foster assimilation and to reduce religiosity among its Muslim citizens. The government has targeted a wide range of religious and cultural practices as indications of extremism or propensity for extremism. Engaging in these practices are reason enough to be involuntarily detained in the camps. Engaging in work, Chinese language study, and political indoctrination are all part and parcel of a campaign to dilute Uyghur cultural identity and to assimilate Muslim citizens into the dominant Han majority (Zenz 2019). As with other forms of forced labor that have been used by the Chinese Communist Party for decades, labor is seen as an important component of an individual's transformation into a new kind of citizen—patriotic, obedient, and hardworking for the collective goals of the nation. Despite foreign condemnation of these practices and fears of cultural genocide, the Chinese Government has defended these policies as necessary to reduce threats of domestic terrorism.

Forced labor in cotton and solar panel production in XUAR has implicated the supply chains of many multinational corporations (Lehr and Wu 2021). Some forced companies have found themselves caught between external condemnations of the Xinjiang camps/forced labor and Chinese public opinion that is overtly supportive of the Chinese Government policies. When H&M, a large Swedish apparel company, expressed concern about the use of forced labor in cotton production in Xinjiang, it faced a Chinese consumer boycott, was dropped from some app stores and online retail platforms, and rejected by some Chinese celebrities who cut ties with the brand (BBC 2021).

The forced labor issue in Xinjiang underlines important challenges that foreign governments and corporations must increasingly confront. Both the camps themselves and related forced labor demonstrate the widening gap in the conception of human rights between the Chinese Government and much of the rest of the world. Involuntary and extralegal detention of China's own citizens on a mass scale is now justified by the government, and apparently, supported by a wide swathe of Chinese society. Corporations must consider the reputational costs of producing in China and the economic costs of arousing the ire of the Chinese government and public.

RECOMMENDATIONS

In China's current political environment, foreign support for Chinese civil society can backfire because foreign support is construed as evidence of an external plot to foment social instability. It is also increasingly difficult for journalists and academic researchers to have access to China. However, there are steps that can and should be taken to support our values and promote pluralism and inclusion.

- The United States should invest in our infrastructure and in our workforce to compete in the global economy. This includes education and a social security system that provides for illness, injury, and old age. Access to affordable childcare is also essential. While China falls short in many of these areas now, it has already made impressive investments in its infrastructure and technological base. In labor and social policy, it has at least developed the legal and policy framework to make future improvements. We ignore these achievements at our peril.

- Support freedom of expression and freedom of association, domestically and abroad.
- As supply chains in China become more fraught with risks, of both rampant human rights violations in Xinjiang, and national security risks elsewhere, the United States should invest in trade partnerships with other countries that share similar political values and commitments to human rights and labor rights.

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QUESTIONS SUBMITTED FOR THE RECORD TO MARY GALLAGHER, PH.D.

QUESTIONS SUBMITTED BY HON. RON WYDEN

Question. Ensuring that American workers can compete with—and out-compete—China and other countries around the world requires us to invest in our workers. It also means that we need to enforce laws already on the books that protect our workers from unfair competition. One of those laws is the ban on importation of products made with forced labor. From a moral perspective alone, forced labor is abhorrent. And from a competitiveness angle, the use of forced labor effectively acts as a subsidy that puts American workers at a competitive disadvantage.

U.S. law bans importation of products made with forced labor, depriving those goods of access to the American market. How can the United States work with our allies to ensure that we are taking concerted action and ensuring that goods produced with forced labor are not simply sent to other markets around the world? Do you have any views on the EU's new provisions regarding ensuring supply chains do not include products made with forced labor?

Answer. As I noted in my original statement regarding forced labor in the XUAR, multinational corporations operating in some supply chains in China (cotton apparel, for example) are at some risk of having forced labor in their supply chains and related condemnations from outside NGOs and activists, while also earning the ire of Chinese citizens who oppose boycotts of Chinese cotton and goods made in China with forced labor. The United States should work with its allies to encourage stronger international condemnation of the re-education camps in the XUAR and the related forced labor in the camps. It should also work with allies and other economies to rebuild supply chains outside of China. The EU new provisions are laudable, but are not sufficient to deal with state-sponsored forced labor of religious and ethnic minorities, which is strongly supported by some large portion of the Chinese dominant majority ethnic group.

Question. China's digital environment is subject to sophisticated and comprehensive censorship. In addition to government monitoring and blocking of Internet access, major Internet platforms in China are also required to establish self-censorship

mechanisms. U.S. companies seeking to participate in the Chinese market are expected to meet similar requirements.

Can you describe the impact of China's censorship and digital policies on both workers seeking to identify jobs, organize or otherwise participate in the Chinese economies and innovators who are seeking to start new firms in China? Are these policies helpful or harmful to these groups?

Answer. China's censorship and digital surveillance policies are harmful to Chinese workers' ability to organize and mobilize for better workplace conditions and protections. These policies limit workers' ability to communicate to each other about workplace issues and they significantly raise the risks of mobilization, whether virtual or real. Workers and labor activists have been detained and imprisoned for such mobilization.

Question. Can you describe the impact of China's censorship and digital policies on small and medium-sized enterprises, and the workers upon which they rely, operating in China or seeking to enter the Chinese market?

Answer. China's censorship and digital policies place certain burdens of self-censorship on all companies entering or operating in the Chinese market regardless of the companies' size. Many companies entering the Chinese market have also faced pressure to comply with Chinese censorship restrictions (Google, most famously, which then left the Chinese market.) These restrictions might place heavier burdens on small and medium-sized companies if they lack the internal expertise on these issues. Non-compliance with China's censorship demands also pose significant economic risks to all companies, regardless of size. Chinese Government threats to restrict or reduce access to the Chinese market have compelled some very large multinational companies to comply with Chinese censorship policies.

QUESTION SUBMITTED BY HON. BILL CASSIDY

Question. The Chinese Government imposes strict capital controls on its citizens, which may cause some who would otherwise rather stay within the rules to use illicit means such as trade-based money laundering (TBML), sometimes through cryptocurrencies, to move money out of China, facilitating illicit finance and organized crime in the United States and Latin America. It seems like there is room for us to cooperate here, since both countries have an interest in stopping TBML and other similar crimes.

Is there some way that we can suggest that we work together?

Answer. This question is outside my area of expertise. There were at least two other panelists providing testimony who are better equipped to answer Senator Cassidy's good question.

PREPARED STATEMENT OF ROY HOUSEMAN, LEGISLATIVE DIRECTOR, UNITED STEELWORKERS

Chairwoman Warren, Ranking Member Cassidy, thank you for the opportunity to testify today on defending and investing in U.S. competitiveness. As a former trade-impacted mill worker, and now legislative director for the largest industrial union in North America, it is an honor to be a voice for organized workers in this discussion, and our union's international president Tom Conway gives his regards.

The United Steelworkers (USW) is the largest industrial union in North America, representing workers throughout the manufacturing sector. Our union's representation in commodities, which Americans and people across the globe use every day—from paper, steel, fiber optics, to tires—provides a unique lens into U.S. competitiveness. It is also important to note that as our economy has changed over the decades, our union continues to evolve, representing workers in industries from software development to electric bus assembly to health care.

Defending and strengthening our country's competitiveness requires at least three key strategic shifts: (1) refocusing Federal domestic investments on critical infrastructure; (2) retooling our labor and environmental laws for a 21st-century democracy; and (3) exporting not just our goods, but our ideals, for a just global economy. Trade policy in particular must play a dual role of defending our communities from unfair trade practices by governments and foreign multi-national corporations, while ensuring the goods and services our workers produce can reach global markets.

DOMESTIC INVESTMENT

Turning first to domestic investment, the USW takes a holistic approach to our country's infrastructure. Right now, Steelworkers local unions across the country are working with their respective employers to send letters to the Biden administration in a campaign called "We Supply America." This campaign emphasizes the critical role USW members play in America's infrastructure supply chain. For example, on our country's interstate highway system Steelworkers provide everything from steel for the over 6 million tons of guard rails to the pigment for paint that guides travelers every day.[1] They provide the steel that supports our bridges and buttresses our ports. From roads and bridges to our electric grid to broadband and so many other areas, our members produce the products that are needed. That is why we are hopeful and anxious to review the details of the $1.2-trillion bipartisan infrastructure framework.

If done right, this framework has the potential to upgrade our crumbling infrastructure and coupled with strong domestic procurement policies that ensure American manufacturing workers benefit from the tax dollars spent across the country. We know this new investment is needed when, for example, 6 billion gallons of treated water is lost each day in the U.S. That is over 4 million gallon jugs of lost drinking water in the 5 minutes set aside for my oral testimony. We can do better, and our members who work at companies, like McWane, stand ready at the crucible to pour melted iron for the next generation of water infrastructure should Congress move on this historic investment.

As the largest union in hard rock mining, we recognize the potential that a changing transportation infrastructure creates for miners of copper and other metals here in the U.S., and the new opportunities that clean technology will present for workers in the supply chain. But even aggressive electric vehicle (EV) uptake will not completely replace traditional fuels in the near term. For example, Bloomberg estimates that EV sales will only reach 34.3 percent by 2030.[2] This means there will be a continuing need for traditional fuels and refineries, most of which are represented by our union. These workers have bargained generous pay and benefits for safely and efficiently refining hydrocarbons over the years, supplying America with the needed fuels to drive the country and our military.

The U.S. can achieve a net-zero emissions economy by 2050, while still maintaining production and employment in energy-intensive, trade-exposed industries, but it will require workers, government, and industry working together. Our union is prepared to tackle this challenge in the many carbon intensive industries where we have members. That is why we are working closely with our member companies and community stakeholders to encourage investment in Carbon Capture, Utilization, and Sequestration (CCUS) and Direct Air Capture (DAC) Technology and supporting legislation like the SCALE Act (S. 986) and the CATCH Emissions Act (S. 2230).

A mix of policies will be needed for these changes. For example, the USW urges Congress to invest in section 132 Manufacturing Conversion/Industrial Retooling Grant program, which was established under the Energy Independence and Security Act (EISA) of 2007, but never funded. This and other strategic manufacturing investment programs would provide capital for the conversion and retooling of industrial facilities.[3]

INVESTING IN AMERICAN WORKERS

Domestic investments in infrastructure and industrial capacity will be key to building a 21st-century economy. But physical infrastructure is only one leg in a stool toward a prosperous, equitable, and just democracy. Our human infrastructure needs investment as well to ensure that America's workers have the knowledge and skills to face global competition and to combat growing income inequality. Whether it is preparing for the next pandemic, eliminating systemic racism, improving child care, or increasing worker power—the tools to empower workers and their communities need improving.

[1] *https://pubs.usgs.gov/fs/2006/3127/2006-3127.pdf.*

[2] *https://www.bloomberg.com/news/articles/2021-06-26/where-we-are-on-the-road-to-electric-vehicles-quicktake?sref=HEwoTbCT.*

[3] *https://docs.house.gov/meetings/AP/AP10/20210317/111330/HHRG-117-AP10-Wstate-BrownR-20210317.pdf.*

According to the Economic Policy Institute, de-unionization explains approximately a third of the growth of the wage gap between high- and middle-wage earners over the 1979–2017 period.[4] Unions have played a key role in improving hours, wages, and working conditions for the country's 150 million plus workers, but eroded labor laws are undermining take home pay for everyone. The drop in union membership has taken $52 weekly out of nonunion working men's wages alone since 1979.[5]

Economic disparities for communities of color are also reduced with unionization. Black workers—both men and women—are more likely than White workers to be covered by collective bargaining, and the wage boost that they get from being covered by collective bargaining is 13.1 percent, above the 10.2 percent average wage boost for unionized workers overall.

These are a few of the reasons why the USW supports the passage of the PRO Act (H.R. 842). Labor law reform has the potential to reduce income inequality, which is vital to creating a competitive economy. For example, research indicates in Organisation for Economic Co-operation and Development (OECD) countries, the average increase in inequality of 3 Gini points over the past couple of decades is estimated to have cut GDP by around 8.5 percent.[6] We are seeing reduced economic mobility for the middle class and fewer children growing up in the bottom of the income distribution are able to climb to the top.[7] Improved bargaining power through simple things, such as holding corporations truly accountable for unfair labor practices and allowing workers to get a contract, when combined with investments in our children and our working families, will bend the arc of inequality back in favor of workers.[8]

Inequality destabilizes and undermines long term educational achievement as well, creating jarring inequities. Research has shown spending on "enrichment" activities for children like books, child care, and non-school activities among the bottom fifth of the income distribution rose by just over 55 percent between the mid-1970s to around $1,300 in the mid-2000s. Among the top fifth, however, it rose by over 155 percent to $9,000 per child.[9] We are permitting an increasingly tiered society with an enormous waste of human potential, but the Steelworkers union sees a path to reverse this trend with the Biden administration's proposals to upgrade and invest in child care facilities, while providing aid to workers who need child care through the American Jobs Plan and American Family Plan.

Our country will also need to improve our training programs for both dislocated and incumbent workers. Unions already provide a significant role in training the manufacturing workforce. As an example, United States Steel and USW have contract language, which incorporates training coordinators who work with management to ensure that workers "receive sufficient training to allow for all reasonable opportunities to progress within the workforce and maximize their skills to the greatest extent possible."[10] For manufacturing employers who often have specialized equipment that require hands-on experience, the Federal Government should provide resources to support hands-on training coordinators, and also to reward employers who have established relationships with incumbent worker training programs through collective bargaining.

The U.S. must improve resources available for adult worker training. The U.S. is among the worst of all 37 countries in the OECD in job training programs relative to the size of our economy. Public spending is less than half the spending levels of Australia, Canada, and the U.K., and one-sixth the level of spending in Germany.[11]

The USW is dismayed that Congress has allowed the Trade Adjustment Assistance (TAA) for dislocated workers impacted by an increasing globalized economy to revert to an inadequate older program. Today a worker who loses their job to unfair competition from China—with which we had a $310.8 billion trade deficit in 2020—

[4] *https://www.epi.org/publication/unions-help-reduce-disparities-and-strengthen-our-democracy/.*

[5] *Ibid.*

[6] *https://www.oecd-ilibrary.org/docserver/9789264246010-6-en.pdf?expires=1625932386&id=id&accname=guest&checksum=DE7CCC1AD26D92DBB4C2F988581753B6.*

[7] *https://www.theguardian.com/commentisfree/2021/mar/13/american-dream-broken-upward-mobility-us.*

[8] *https://edlabor.house.gov/imo/media/doc/PRO%20ACT%20-%20Fact%20Sheet.pdf.*

[9] *https://www.oecd-ilibrary.org/docserver/9789264246010-6-en.pdf?expires=1625932386&id=id&accname=guest&checksum=DE7CCC1AD26D92DBB4C2F988581753B6.*

[10] *https://uswlocals.org/system/files/2018_uss-usw_pm_bla_printer.pdf.*

[11] *https://www.oecd.org/unitedstates/back-to-work-united-states-9789264266513-en.htm.*

cannot get TAA benefits.[12] This is unacceptable and the union supports a healthy reauthorization of the TAA program similar to legislative proposals put forward by Senator Stabenow.[13] As a past recipient of TAA benefits, I know how important this program is.

A WORKER-CENTERED TRADE AGENDA

This discussion on dislocated worker training leads to the final leg of the U.S. competitiveness stool: building a robust worker-centered trade agenda. The USW, which has participated in over 100 anti-dumping and countervailing duty investigations, and is the largest union in steel and aluminum manufacturing vital to our critical infrastructure and national security, and currently benefit from section 232 safeguards. For us, getting trade policy right is a must for a sustainable, competitive economy.

Our trade policy must continue to evolve. The United States-Mexico-Canada Agreement (USMCA) was a significant improvement over inadequate multilateral trade agreements like the Trans-Pacific Partnership. The Brown-Wyden rapid response mechanism is already leading to investigations of labor violations by employers in Mexico and the first remediation plan was announced last week.[14] We will closely watch the results of this remediation plan, but remain concerned that Mexico's labor reforms are moving too slowly. The resources must be quickly deployed to enhance on-the-ground labor capacity building.

Other elements of the USMCA agreement also provide framework for a more worker-centered trade policy. The rules of origin for automobiles, which require 75 percent of a vehicle content to originate in North America, is a solid step to rewarding employers who manufacture in North America. Combined with the novel labor value content rule for automobiles, future trade agreement negotiations can no longer ignore wages and benefits. These provisions were an improvement over the original flawed NAFTA, but they are far from perfect. They provide a floor for potential future trade agreements, but they are not a template.

It should also be noted that the voting margins in support of USMCA in Congress show that the Trade Promotion Authority or expedited voting authority is unnecessary if stakeholders are meaningfully engaged.

U.S. competitiveness requires a "zero tolerance" policy toward forced labor and the countries who permit its existence in their supply chains, from manufacturing to fishing, and must be severely sanctioned. Earlier this year USW member and tire worker Joe Wrona testified before the full Finance Committee on the impact of forced labor on his job and the solar supply chain in China.[15] Broader reforms are needed to combat forced labor, particularly in China, and the USW supports Representatives McGovern and Smith's bipartisan Uyghur Forced Labor Prevention Act (H.R. 1155).

But there must also be broader unilateral and multilateral reform efforts to uphold democratic values in our trade negotiations. Global overcapacity in products, such as steel and aluminum, will need to be reduced if we are to preserve strategic domestic industries and push back on state-capitalist models. China's Belt and Road Initiative has led to expansions of dumped and subsidized goods entering from third-party countries. However, our trade enforcement tools have not yet been upgraded to contain this growing problem.

Fortunately, Senator Brown and Senator Portman are leading with a much-needed update to our trade enforcement laws. Commonly referred to as "Leveling the Playing Field Act 2.0," S. 1187 recognizes that as globalization accelerates, our trade enforcement mechanism must move at the speed of our increasingly digitalized economy. USW urges the Congress to pass this legislation.

The World Trade Organization (WTO) will also need to be reformed to better account for labor and environmental protections. Trade policy debates can no longer be conducted simplistically in terms of Economics 101 notions of comparative advantage, but require a recognition that repression of fundamental workers' rights in China and other countries violates international law and adversely affects American

[12] *https://www.thebalance.com/u-s-china-trade-deficit-causes-effects-and-solutions-3306277.*

[13] *https://www.stabenow.senate.gov/news/senators-stabenow-peters-introduce-bill-to-support-workers-impacted-by-trade.*

[14] *https://ustr.gov/about-us/policy-offices/press-office/press-releases/2021/july/united-states-and-mexico-announce-course-remediation-workers-rights-denial-auto-manufacturing.*

[15] *https://www.finance.senate.gov/download/03182021-wrona-testimony.*

workers. We are heartened by Ambassador Tai's recent remarks at the AFL–CIO on increasing workers' voices at the WTO to improve global labor rights.[16]

Finally, 52 years ago a U.S. river physically catching fire from industrial pollution finally pressed lawmakers over the line to create the Environmental Protection Agency, an agency responsible for dramatic improvements of our air and water quality.[17] But, a lack of recognition that corporations will outsource their pollution if permitted has led to ecological disasters such as less than a third of Mexico's industrial wastewater being treated.[18] This lack of equal treatment and accountability has meant corporate investments abroad have avoided domestic pollution controls such as those for lead acid batteries.[19] And, it is well documented that trade agreements can also shrink the "policy space" available to countries to tackle climate change.[20]

Future trade policy will also need to address carbon in a sensible way that prevents "carbon leakage." The USW has long advocated for sensible climate change policy, including policy which addresses carbon border adjustments so carbon intensive industries are not disadvantaged as they adhere to new government policies.[21]

Ensuring that the U.S. and its workers remain competitive will require a whole of government approach that includes both investment in our country's infrastructure and workers, and an ever-evolving trade policy, which defends against trade abuses and encourages exports while raising global labor and environmental standards. USW members stand ready to make this the future.

Thank you for the opportunity to testify.

Questions Submitted for the Record to Roy Houseman

Questions Submitted by Hon. Ron Wyden

Question. In the past, U.S. infrastructure policies focused on short-term repair and bare-bones maintenance of our physical infrastructure, instead of smart, bold, long-term investments. When it comes to human services infrastructure, we have seen a similar lack of investment in the safety net programs and training programs that support our workforce.

Please describe the importance of the United States taking bold action to invest in both physical and human services infrastructure, and how these significant investments today can pay off in the future.

Answer. The lack of Federal investment in our physical and human services infrastructure has meant decreased competitiveness for U.S. businesses, and for workers it means additional insecurity and uncertainty in planning for long-term decisions that allow for a more solid economic well-being. United Steelworkers in May of 2020 put out a press release after the failure of the Edenville and Sanford dams, which caused historic flooding and forced at least 10,000 people from their homes in and around Midland, MI. Besides the immediate human costs, USW represented employers like DOW were impacted as well.[1] That is why our union is supportive of the Infrastructure Investment and Jobs Act and urges final passage. Recently workers across the country provided testimony of the various products they make and how infrastructure investments would benefit not just them but their communities. It is available on Facebook: *https://fb.watch/91nKmUSWUH/*.

Social infrastructure is important as well. A better quality of life for workers in America means ensuring workers don't have to worry about child care costs, know that their parents and grand-parents can access affordable dental and vision care through their Medicare programs and that we reduce the cost of collective bar-

[16] *https://ustr.gov/about-us/policy-offices/press-office/press-releases/2021/june/remarks-ambassador-katherine-tai-outlining-biden-harris-administrations-worker-centered-trade-policy.*
[17] *http://ohiohistorycentral.org/w/Cuyahoga_River_Fire.*
[18] *https://www.nytimes.com/2019/12/30/world/americas/mexico-environment-trade.html.*
[19] *https://www.sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/NAFTA%20and%20Climate%20Report%202018.pdf.*
[20] *https://iccwbo.org/content/uploads/sites/3/2019/03/icc-report-trade-and-climate-change.pdf.*
[21] *https://www.congress.gov/116/meeting/house/110026/documents/HHRG-116-CN00-20190926-SD003.pdf.*
[1] *https://www.usw.org/news/media-center/releases/2020/usw-dam-failure-disaster-spotlights-need-for-large-scale-infrastructure-commitment.*

gaining by creating an above the line deduction for union dues. When we care for our communities, we make better communities.

Question. Please explain why such investments are needed now, and whether in your view such investments are urgent.

Answer. The need for immediate investments are obvious in a global competitive setting. In late 2020, USW provided testimony to the Senate Banking committee which highlighted how the People's Republic of China has invested heavily into the country's manufacturing and physical infrastructure and how the impacts of those investments have led to decreased competition globally. For example, in 2019, the U.S. spent just 2.5 percent of our GDP on infrastructure, down from 4.2 percent in the 1930s.[2] This decrease in domestic spending has meant that businesses lose sales to international competitors and workers have to spend more of their take home pay fighting clogged streets and inadequate infrastructure.

PREPARED STATEMENT OF DAVID M. LUNA, EXECUTIVE DIRECTOR, INTERNATIONAL COALITION AGAINST ILLICIT ECONOMIES (ICAIE)

Chair Warren, Ranking Member Cassidy, and distinguished members of the subcommittee, I appreciate the opportunity to testify in today's hearing.

As the executive director of the International Coalition Against Illicit Economies (ICAIE, *https://www.icaie.com/*), it is an honor to be here today to outline some of the national security impacts related to China's involvement in the expansion of illicit economies, the booming trade in counterfeit and fraudulent goods, money laundering/trade-based money laundering, and the corruptive and malign influence of the Chinese Communist Party (CCP) that continues to harm American interests, our economy and competitiveness, and the health and safety of our citizens.

In my testimony, I will discuss some concerning trends and cases of the illegal trade and cross-border criminal activities that are harming U.S. national security and impacting numerous American brands across industries, including ICAIE members and partners.

I will then devote the last part of my testimony to possible solutions and approaches that can help to not only check and sanction illicit trade from China, but that can serve as a basis for more constructive engagement with the Chinese Government to investigate and prosecute complicit bad actors in an array of cross-border trafficking crimes.

First, let me state that having in the recent past chaired and participated in several initiatives on fighting corruption and illicit trade as part of the U.S.-China Anti-Corruption Working Group of the Law Enforcement Joint Liaison Group (JLG ACWG), and multilaterally in several diplomatic fora such as the Asia Pacific Economic Cooperation (APEC) economic forum and the G20 in which China is also a member, I always believed that it was important to have frank and direct talks with China on the tough issues in order to work together to solve complex and difficult challenges.

China is an adversary with numerous geopolitical ambitions that threaten U.S. national security interests. However, China can also be a responsible partner working with the United States where national interests align to do good in our world including safeguarding the peace, promoting shared prosperity, and addressing today's transnational illicit threats.

But before the United States can embark on encouraging China to shutdown illicit trade flows and tackle unfair trade and business practices, it is important to have an understanding of the increasingly diverse array of market security threats that China continues to inspire across borders. These threats are harming U.S. national interests, including our economic competitiveness internationally, and also have had a considerable impact domestically on our businesses and the well-being of our citizens.

To put in perspective China's role in diverse forms of illicit trade and dark commerce, we must recognize that the global illicit economy is booming as Dr. Louise I. Shelley—Director, Terrorism, Transnational Crime and Corruption Center

[2] *https://www.banking.senate.gov/imo/media/doc/Houseman%20Testimony%2012-16-20.pdf.*

(TraCCC), Schar School of Policy and Government, George Mason University—has often highlighted in her research.[1]

The effects of illicit trade and illicit economies are multifaceted. Corruption and illicit finance are at the core of these complex cross-border issues, and corrode the underpinnings of democracy, good governance, clean markets and supply chain security, and economic development efforts. They also impede progress on human rights and implementation of national sustainability strategies related to the UN Sustainable Development Goals (SDGs).[2]

The lucrative criminal activities enabling and fueling the multi-trillion-dollar illicit economies include the smuggling and trafficking of narcotics, opioids, weapons, humans, counterfeit and pirated goods; illegal tobacco and alcohol products; illegally harvested timber, wildlife, and fish; pillaged oil, diamonds, gold, natural resources and precious minerals; and other contraband commodities.[3]

Such contraband and illicit goods are sold on our main streets, on social media, in online marketplaces, and on the dark web every minute of every day. The United Nations has estimated that the dirty money laundered generated annually from such criminal activities is between 2 and 5 percent of global GDP, or $1.6 to $4 trillion.[4]

Make no mistake: China today is helping fuel this global illegal economy through the illicit manufacturing and unauthorized exporting of harmful products, such as the chemical precursors to make deadly fentanyl and other opioids, fake goods that can cause great bodily harm or death, and other contraband that hurts our industries, supply chains, and economy.

FENTANYL AND PRECURSOR CHEMICALS

Among the harms to our homeland and health and safety of American citizens is the lethal trade in fentanyl, synthetic opioids, and precursor chemicals from China.

Such dangerous contraband is killing tens of thousands of Americans each year, especially our youth. Its potency is fueling the addiction crisis in the United States, especially when it is mixed with heroin or cocaine to increase profits for the Mexican cartels and other criminal organizations in their narco-trafficking operations.[5] Mexican criminal networks earn tens of billions of dollars a year supplying narcotics, fentanyl, and other synthetic drugs to U.S. users.[6]

China is a principal source of the lucrative illicit synthetic fentanyl, its analogs, and precursor chemicals that are arriving in North America, bought by Sinaloa and Cartel de Jalisco Nueva Generación (CJNG), and facilitated by Chinese organized criminal groups.[7] Significant quantities flow from China through Mexico and Canada, as well as arriving directly in the U.S. from China. Most fentanyl or fentanyl analogs (as well as other synthetic opioids), pill presses, and binding agents are smuggled through legal points of entry and via international mail carriers.[8] As our law enforcement officials have discovered, containers are often mislabeled and packets hidden to avoid detection at legal ports of entry. Selling fentanyl on-line via the open Internet in China and the “dark” web in the U.S. has also become prevalent.

[1] Louise I. Shelley, “Dark Commerce: How a New Illicit Economy Is Threatening Our Future,” Princeton University Press, 2018, accessible at *https://traccc.gmu.edu/publication-and-resources/external-resources/*.

[2] United Nations, Sustainable Development Goals (SDG), 2030 Agenda for Sustainable Development, accessible at: *https://www.un.org/sustainabledevelopment/sustainable-development-goals/*.

[3] Channing (May) Mavrellis, “Transnational Crime and the Development World,” Global Financial Integrity, March 27, 2017, accessible at *https://www.gfintegrity.org/report/transnational-crime-and-the-developing-world/*.

[4] *https://www.imf.org/external/pubs/ft/fandd/2018/12/imf-anti-money-laundering-and-economic-stability-straight.htm.*

[5] Earl Anthony Wayne and David M. Luna, “Attack Fentanyl Flows Across Borders: A Real Emergency”, The Wilson Center, March 18, 2019, accessible at *https://www.wilsoncenter.org/article/attack-fentanyl-flows-across-borders-real-emergency.*

[6] Drug Enforcement Administration (DEA), “2020 National Drug Threat Assessment,” DEA, U.S. Department of Justice, March 2021, accessible at *https://www.dea.gov/sites/default/files/2021-02/DIR-008-21%202020%20National%20Drug%20Threat%20Assessment_WEB.pdf.*

[7] Naveed Jamali and Tom O’Connor, “Chinese Chemicals in Mexican Cartel Hands Feed Deadly U.S. Fentanyl Crisis,” *Newsweek,* May 5, 2021, accessible at *https://www.newsweek.com/chinese-chemicals-mexican-cartel-hands-feed-deadly-us-fentanyl-crisis-1588948.*

[8] *Ibid.*

In recent years, as the U.S.-China Economic and Security Review Commission has noted, there has been no substantive curtailment of fentanyl flows from China to the U.S. due to weak regulations governing pharmaceutical and chemical sectors in China.[9] Moreover, in China webs of corruption and criminality have complicated both U.S. and Chinese law enforcement agencies' ability to disrupt manufacturing, distribution, and trafficking of illicit drugs, including fentanyl and chemical precursors into Canada, Mexico, and the United States.

When these illegal drugs converge with other criminal activities across illicit economies, the overall threat becomes multiplied many times over. Such crime convergence fuels greater violence, corruption, insecurity, instability, and sometimes conflicts in many parts of the world.[10]

As I will continually stress today, we need to heighten the political pressure on China to work with the U.S. to disrupt these illicit trafficking flows and target complicit criminals' dirty money.

ILLICIT TRADE AND ILLICIT MARKETS

Chinese state-sponsored hackers and criminals are stealing the intellectual property (IP) of the United States and American companies. Intellectual property theft and economic espionage of U.S. trade secrets are estimated to be as high as $600 billion annually. China is responsible for much of this IP crime, hurting American innovation, competitiveness, good-paying jobs, and economic growth.[11]

Another harm to American interests driven from China's illegal trade and unregulated economy are the flooding of counterfeits—oftentimes dangerous and toxic fake products—into U.S. markets including foodstuffs, footwear and apparel, toys, electronics, and pharmaceuticals. This is especially true across ecommerce platforms and Internet marketplaces, including third-party sellers and online pharmacies that sell counterfeits and fake medicines that increase the health and safety risks to all American consumers. As the U.S. Department of Homeland Security (DHS) underscored in a 2020 report on counterfeits and pirated goods:[12]

> Counterfeits threaten national security and public safety directly when introduced into government and critical infrastructure supply chains, and indirectly if used to generate revenue for transnational criminal organizations. Counterfeits also pose risks to human health and safety, erode U.S. economic competitiveness and diminish the reputations and trustworthiness of U.S. products and producers.

The National Association of Manufacturers (NAM) released a report last year finding that counterfeits sapped the U.S. economy of $131 billion and 325,500 American jobs in 2019.[13] More globally, both the U.S. Department of Homeland Security (DHS) and the Organisation for Economic Co-operation and Development (OECD) have found China (including Hong Kong) accounts for up to 80–90 percent of all counterfeits seized in the United States and around the world ($509 billion a year or 3.3 per cent of global trade).[14]

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[9] U.S.-China Economic and Security Review Commission, "Fentanyl Flows From China: An Update Since 2017," November 26, 2018, accessible at *https://www.uscc.gov/sites/default/files/Research/Fentanyl%20Flows%20from%20China.pdf.*

[10] David M. Luna, "Biden's foreign policy shift should address cross-border corruption and illicit trade," *South China Morning Post,* February 17, 2021, accessible at *https://www.scmp.com/comment/opinion/article/3121847/bidens-foreign-policy-shift-should-address-cross-border-corruption.*

[11] Federal Bureau of Investigation (FBI), "China: The Risk to Corporate America," U.S. Department of Justice, 2019, accessible at *https://www.fbi.gov/file-repository/china-risk-to-corporate-america-2019.pdf/view. See also,* Dennis C. Blair and Keith Alexander, "China's Intellectual Property Theft Must Stop," August 15, 2017, Opinion, *The New York Times,* accessible at *https://www.nytimes.com/2017/08/15/opinion/china-us-intellectual-property-trump.html.*

[12] U.S. Department of Homeland Security, Combating Trafficking in Counterfeit and Pirated Goods, DHS, January 24, 2020, accessible at *https://www.dhs.gov/sites/default/files/publications/20_0124_plcy_counterfeit-pirated-goods-report_01.pdf.*

[13] National Association of Manufacturers (NAM), "NAM Leads Fight Against Counterfeits During COVID–19 Pandemic," June 22, 2020, NAM Press Release, accessible at *https://www.nam.org/nam-leads-fight-against-counterfeits-during-covid-19-pandemic-9909/.*

[14] Organisation for Economic Co-operation and Development (OECD) and European Union Intellectual Property Office (EUIPO), Trends in Trade in Counterfeit and Pirated Goods, March 2019, accessible at *http://www.oecd.org/gov/risk/trade-in-counterfeit-and-pirated-goods-9789264252653-en.htm* and *https://euipo.europa.eu/tunnelweb/secure/webdav/guest/document_li*

Continued

While the COVID–19 pandemic brought economic malaise to most sectors during pandemic economic lockdowns, according to Euromonitor [15] the illicit economy continues to accelerate, especially across the digital world with billions of vulnerable consumers on-line. This is especially true across online marketplaces that are generating tremendous prosperity for e-commerce platforms, scammers, fraudsters, counterfeiters, and other predatory criminals that are generating tens of billions of dollars selling fake pharmaceuticals and vaccines, personal protective equipment (PPE), counterfeit apparel and footwear, copyrighted electronics knock-offs, and other illicit goods mostly coming from China.

As a factory to the world, China's illegal production is being generated not only from state-owned enterprises (SOEs) but among some of its registered companies.

In other specific sectors, the story is the same on the economic impact of counterfeits from China.

Pharmaceuticals

Counterfeit and fake pharmaceuticals is an illicit market which generates billions of dollars for criminal entrepreneurs. According to a 2019 Better Business Bureau study, companies based in China, Hong Kong, Singapore, and India shipped 97 percent of the counterfeit medicines seized in the U.S.[16] Across numerous illicit trafficking routes, Chinese counterfeit medicines arrive in American, European, and other markets around the world in dangerously high volumes.

According to the World Health Organization (WHO), 10 percent of global commerce involves counterfeit and fake medicines, which have caused hundreds of thousands of deaths in some of the world's most impoverished countries.[17] For example, counterfeit anti-malarial and other fake medicines from China end up causing tremendous health complications and fatalities.[18] Other known counterfeited and fake pharmaceuticals seized have been intended to treat cancer, heart, diabetes, COVID–19, human immunodeficiency virus (HIV), genitourinary diseases, and other serious medical ailments. Often the ingredients in these counterfeit prescription drugs or fakes found in open markets contain no active ingredient or in some cases, chalk, flour, pollen, or even toxic and deadly chemicals such as rat poison, boric acid or anti-freeze.[19]

On counterfeit PPE products related to the COVID–19 pandemic, 40 million Chinese-produced counterfeit N95 and other face masks that are substandard and do not protect medical workers and first responders, have been seized in the U.S.,[20] after having entered the legitimate supply chain. Other Chinese counterfeit PPE and pharmaceuticals that have endangered our medical professionals and citizens during the pandemic have similarly been seized by U.S. law enforcement authorities.

In the U.S. and several other countries, fake websites are purporting to sell COVID–19 vaccines with the purpose of obtaining people's personal information. According to *The Wall Street Journal,* Pfizer confirmed counterfeit versions of the COVID–19 vaccine it developed with BioNTech SE had been seized in Mexico, highlights how criminals are exploiting the current pandemic for profit especially the

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brary/observatory/documents/Mapping_the_Economic_Impact_study/Mapping_the_Economic_Impact_en.pdf.

[15] Euromonitor International, "Coronavirus Accelerates Demand for Illicit Trade," Market Research Blog, March 1, 2021, accessible at *https://blog.euromonitor.com/coronavirus-accelerates-demand-for-illicit-trade/.*

[16] Better Business Bureau (BBB), "Fakes Are Not Fashionable: A BBB Study of the Epidemic of Counterfeit Goods Sold Online," BBB, May 2019, accessible at *https://www.bbb.org/globalassets/local-bbbs/council-113/media/scam-studies/bbb-study-of-counterfeit-goods-sold-online.pdf.*

[17] World Health Organization, "Substandard and Falsified Medical Products," WHO, January 31, 2018, accessible at *https://www.who.int/news-room/fact-sheets/detail/substandard-and-falsified-medical-products.*

[18] Jackson Thomas, Erin Walker, Gregory Peterson and Mark Naunton, "Are Fake Drugs the Reason Malaria Sickens Millions a Year?", *Smithsonian Magazine,* April 24, 2018, accessible at *https://www.smithsonianmag.com/science-nature/fake-drugs-are-one-reason-malaria-still-kills-so-many-180968882/.*

[19] The Center for Safe Internet Pharmacies (CSIP), "Top Poisons Found in Counterfeit Drugs," Blog, SafeMedsOnline, July 31, 2013, accessible at *https://safemedsonline.org/2013/07/top-poisons-found-in-counterfeit-drugs/.*

[20] U.S. Customs and Border Protection (CBP), "CBP Seizes Counterfeit N95 Masks," U.S. Department of Homeland Security, CBP Press Release, April 15, 2021, accessible at *https://www.cbp.gov/newsroom/local-media-release/cbp-seizes-counterfeit-n95-masks.* (Numbers cited reflect update as of July 1, 2021.)

world-wide vaccination campaign.[21] In March 2021, INTERPOL seized hundreds of fake COVID–19 vaccines, while early this month in India, thousand were being scammed into getting similar pandemic fakes made of salt water.[22]

Electronics

The proliferation of counterfeited electronics significantly hurts not only our electronics industry but threatens our national security, the safety of our troops, American jobs, and our consumer-citizens. In the electronics industry, fake parts cost component manufacturers about $100 billion annually. Cell phones such as the Apple iPhones, tablets, computers, smart watches, bluetooth earbuds, Microsoft software, and other high-demand consumer electronics are also counterfeited in the tens of billions every year.[23]

With regard to our national security, counterfeit electronic parts from China have been found to have infiltrated critical military systems and supply chains, including military war fighting jets and tanks, special operation cargo planes, navigation and radar systems, missiles, and other hardware and software.[24] In the past, counterfeit computer microprocessor-chips have been falsely labeled as products coming from Intel, Motorola, and Texas Instruments.

Luxury Handbags, Footwear, and Apparel

It is expected that the global luxury goods market will reach $300 billion by 2026.[25] MarkMonitor reports that almost half (47 percent) of brands will lose sales revenue due to counterfeiting or pirated goods.[26]

Every IP-protected product can be counterfeited. This is true across all consumer goods and services but especially for the footwear and apparel industry which accounted for more than a third of all customs seizures from China and Hong Kong.[27] The most commonly counterfeited American footwear and apparel products are NIKE, the North Face, Under Armour, Levi's, Michael Kors, Polo, and other brands. Clearly such criminal counterfeiting hurts the creative innovations, investments in R&D, intellectual property, and trademarks of American footwear and apparel companies.

Social media sites like Instagram and Facebook as well as online marketplaces have become a boon for criminals in counterfeiting luxury fashion brands, including footwear and sportswear from American team sports from the National Football League (NFL), Major League Baseball (MLB), National Basketball Association (NBA), National Hockey League (NHL), and those associated with international sports federations such as Union of European Football Associations (UEFA), FIFA, and International Olympic Committee (IOC).

In addition to this counterfeit sportswear and gear, anonymous companies and money laundering—including trade-based money laundering (TBML)—have helped criminals across the United States sell in recent years several billion dollars in fake and counterfeited luxury handbags and apparel accessories coming from China in-

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[21] Jared S. Hopkins and José de Córdoba, "Pfizer Identifies Fake COVID–19 Shots Abroad as Criminals Exploit Vaccine Demand," *The Wall Street Journal* (WSJ), April 21, 2021, accessible at *https://www.wsj.com/articles/pfizer-identifies-fake-covid-19-shots-abroad-as-criminals-exploit-vaccine-demand-11619006403.*

[22] Sarah Al-Arshani, "Thousands of people in India may have been scammed into getting fake COVID–19 vaccines made of saltwater," Insider, July 4, 2021, accessible at *https://www.insider.com/thousands-people-india-scammed-fake-covid-19-vaccines-2021-7/.*

[23] Akash Bhatia, Zia Yusuf, Usama Gill, Neil Shepherd, Maciej Kranz, and Anoop Nannra, "Stamping Out Counterfeit Goods with Block and IoT," May 17, 2021, BCG, accessible at *https://www.bcg.com/publications/2019/stamping-out-counterfeit-goods-blockchain-internet-of-things-iot.*

[24] Brett Daniels, "10 Shocking Facts About Counterfeit Electronics" (Defense and Aerospace), February 18, 2021, Blogs by Trenton Systems, accessible at *https://www.trentonsystems.com/blog/10-shocking-facts-counterfeit-electronics.*

[25] Global Industry Analysts, Inc., "Global Luxury Goods Market to Reach $296.9 Billion by 2026," May 27, 2021, accessible at *https://www.prnewswire.com/news-releases/global-luxury-goods-market-to-reach-296-9-billion-by-2026--301301077.html.*

[26] MarkMonitor, "MarkMonitor Online Barometer: Global Business Survey 2018—Brand Protection Challenges," Clarivate, April 10, 2018, accessible at *https://clarivate.com/news/nearly-half-brands-admit-sales-lost-counterfeiting/.*

[27] Organisation for Economic Co-operation and Development (OECD) and European Union Intellectual Property Office (EUIPO), Trends in Trade in Counterfeit and Pirated Goods, March 2019, accessible at *http://www.oecd.org/gov/risk/trade-in-counterfeit-and-pirated-goods-9789264252653-en.htm.*

cluding those branded as Burberry, Louis Vuitton, Gucci, Fendi, Coach, and Chanel.[28]

Tobacco

Like other forms of illicit trade, the illegal tobacco trade is incredibly profitable for criminal organizations and kleptocratic networks. According to a Department of State report, the illicit trade in tobacco products costs governments and taxpayers between $40 billion and $50 billion annually in tax revenues.[29]

China National Tobacco Corporation (CNTC) is by far the largest cigarette company in the world and produces nearly half of the world's cigarettes.[30] The Chinese state-owned conglomerate is vying for a larger market share within the tobacco industry, and it has been forging new markets from Africa to Europe. According to experts, smuggling is an important part of that strategy, especially across Free Trade Zones and unregulated markets where Chinese illicit cigarettes are often reshipped to Somalia, Libya, Syria and other hot spots of instability.[31] Panama's lax oversight and law enforcement has enabled CNTC's push into Latin America.

The Organized Crime and Corruption Reporting Project (OCCRP) has also recently uncovered Chinese smuggling networks that have flooded illegal markets with numerous CNTC illicit cigarettes, evading customs authorities and dodging taxes.[32] Multiyear operations, Smoking Dragon and Royal Charm,[33] led by the Federal Bureau of Investigation and numerous U.S. and Canadian law enforcement agencies, acquired over $40 million worth of counterfeit cigarettes and other illegal commodities coming into the United States from China and North Korea. The route ran from China directly to United States ports such as the Port of Newark in New Jersey and ports located in Los Angeles and Long Beach, California. The operations led to the indictment of 87 individuals from the United States, Canada, China, and Taiwan.

Tests on counterfeit cigarettes from China showed each cigarette had up to 80 percent more nicotine and emitted up to 130 percent more carbon monoxide than legally produced on in regulated markets. In addition, other impurities such as rat poison, feces and asbestos were found in some cigarettes.[34]

But China is not the only player expanding its footprint internationally and taking advantage of U.S. ports. Most recently, the United Arab Emirates has emerged as a large manufacturer of cigarettes intended for the sole purpose of being smuggled, with an estimated production of more than 80 billion cigarettes annually. These unregulated products are transiting through US custom bonded warehouses to be then illegally diverted into Mexico in collaboration with narco-cartels such as CJNG or the Zetas Cartel. In 2020, DHS Homeland Security Investigations (HSI) of 422 million cigarettes in McAllen, TX,[35] the single largest seizure of tobacco products in history.

Automotive Parts

Another economic and safety harm caused by illicit trade relates to fake automotive components, which are also a highly lucrative business for counterfeiters and damage brand reputations of carmakers. Fake and counterfeited auto parts have

[28] David M. Luna, "Anonymous Companies Help Finance Illicit Commerce and Harm American Businesses and Citizens," The Fact Coalition, May 2019, accessible at *https://thefactcoalition.org/report/anonymous-companies-help-finance-illicit-commerce-and-harm-american-businesses-and-citizens/*.

[29] U.S. Department of State, "The Global Illicit Trade in Tobacco: A Threat to National Security," December 2015, accessible at *https://2009-2017.state.gov/documents/organization/250513.pdf.*

[30] Organized Crime and Corruption Reporting Project (OCCRP), "China's State Tobacco Company Is Massive at Home. Now it's Ready to Take Over the World," June 22, 2021, accessible at *https://www.occrp.org/en/loosetobacco/china-tobacco-goes-global/chinas-state-tobacco-company-is-massive-at-home-now-its-ready-to-take-over-the-world.*

[31] United Nations Commodity Trade Statistics Database (UN ComTrade Data), accessible at *https://comtrade.un.org/db/mr/rfCommoditiesList.aspx?px=H2&cc=24/*.

[32] *Ibid.*

[33] Federal Bureau of Investigation (FBI), "Operation Smoking Dragon," U.S. Department of Justice, July 5, 2011, accessible at *https://www.fbi.gov/news/stories/operation-smoking-dragon.*

[34] Lorraine Kember, "Toxic Black-Market Cigarettes Fuel Mesothelioma Concerns," *Asbestos.com,* January 22, 2021, accessible at *https://www.asbestos.com/news/2018/01/22/black-market-cigarettes-mesothelioma/*.

[35] U.S. Immigration and Customs Enforcement (ICE), "South Texas man pleads guilty of attempting to export millions of cigarettes," U.S. Department of Homeland Security, ICE Press Release, May 26, 2020, accessible at *https://www.ice.gov/news/releases/south-texas-man-pleads-guilty-attempting-export-millions-cigarettes.*

caused great bodily injuries, and even deaths to consumer-drivers. According to World Trademark Review, the estimated global economic costs of counterfeiting in the automotive industry could reach $2.3 trillion by 2022.[36]

In the United States, counterfeit parts are costing automotive companies like Ford, GM, Tesla, and others tens of billions of dollars a year with most of fakes originating in China. Among the most popular counterfeited auto parts are tires, batteries, airbags, oil and air filters, brake pads, spark plugs, transmissions, wheels, and electrical components.

Across the digital world, especially ecommerce platforms and online marketplaces, automotive fakes are listed for sale that make it difficult for consumer to distinguish a counterfeited auto part from a real one.[37] This is why it is important to know and trust reputable supply chains and parts distributors.

Endangered Wildlife

The illegal wildlife trade generates between $7 billion and $23 billion each year.[38] Since 1970, humans have decimated animal populations by almost 68 percent according to World Wildlife Fund (WWF).[39] For years, Chinese demand for illegal wildlife products has driven a global trade in endangered species including iconic animals such as rhinoceros, tigers, elephants, pangolins, bears, and so many other animals. Rhino horn and tiger parts are not only used for traditional medicinal treatments, but also to make exotic wines and aphrodisiac drinks.

Investigations by Earth League International—an ICAIE Advisory Council member—have found strong Mexican cartel links with criminal syndicates in China who smuggle totoaba bladders from Mexico and U.S. into Asian black markets.[40] These Mexican-Asian criminal joint ventures, that operate as well in the United States, have also been involved in human smuggling, money laundering, and other illicit trafficking areas.[41]

While China has made some good efforts in the past year during the COVID–19 pandemic to curtail the illegal wildlife trade, it remains a country of concern as a source, transit point, or consumer demand market of wildlife products. Chinese banks help to launder the funds of illegal wildlife traffickers and related Chinese triads involved in smuggling, in some ways being complicit in the further financing of other forms of crime as these bad actors have diversified their illicit portfolios, especially in the Golden Triangle in Southeast Asia.[42]

Illegal and predatory fishing, logging of rainforests, and mining of natural resources by Chinese criminal syndicates and facilitators also harm our natural world, contribute to climate change, and converge with other illicit activities such as corruption, forced labor, human smuggling, and sex trafficking.

HUMAN TRAFFICKING AND FORCED LABOR

Human trafficking and modern slavery are among the world's fastest growing criminal enterprises, generating an estimated $150 billion in illicit profits every year.[43]

Human smuggling is also a major source of illicit trade. The U.S. Department of State has continually called China a source, destination, and transit country for

[36] World Trademark Review, "Counterfeit automotive parts increasingly putting consumer safety at risk," May 13, 2019, accessible at *https://www.worldtrademarkreview.com/anti-counterfeiting/counterfeit-automotive-parts-increasingly-putting-consumer-safety-risk.*

[37] Richard Brown, "Fighting back against counterfeit parts," Automotive Logistics, January 28, 2021, accessible at *https://www.automotivelogistics.media/service-parts-logistics/fighting-back-against-fake-parts/40052.article.*

[38] Global Environment Facility (GEF), "Illegal Wildlife Trade," accessible at *https://www.thegef.org/topics/illegal-wildlife-trade.*

[39] World Wildlife Fund (WWF), "Living Planet Report 2020," WWF, September 9, 2020, accessible at *https://livingplanet.panda.org/en-us/.*

[40] Earth League International (ELI), "Operation Fake Gold—The Totoaba Cartels and the Vaquita Extinction," ELI, accessible at *https://earthleagueinternational.org/operations-reports/. See also* National Geographic's "Sea of Shadows," accessible at *https://films.nationalgeographic.com/sea-of-shadows.*

[41] *Ibid.*

[42] TRAFFIC, "Illegal Wildlife Trade and the Banking Sector in China," TRAFFIC Report, April 14, 2021, accessible at *https://www.traffic.org/publications/reports/the-illegal-wildlife-trade-and-the-banking-sector-in-china-the-need-for-a-zero-tolerance-approach/.*

[43] International Labour Organization (ILO), "ILO says forced labor generates annual profits of U.S.$ 150 billion," ILO Report, May 20, 2014, accessible at *https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_243201/lang--en/index.htm.*

men, women, and children subjected to forced labor and sex trafficking. In its most recent 2021 Trafficking in Persons report,[44] the State Department noted that in China there continue to be "reports of law enforcement officials benefiting from, permitting, or directly facilitating sex trafficking and forced labor, [while] the government did not report any investigations, prosecutions, or convictions of law enforcement officials allegedly involved in the crime."

In this 2021 report, there was also mention of state-sponsored forced labor as part of China's mass detention, political indoctrination, and labor transfer campaign against the Uyghurs and other members of Muslim minority groups.[45] Chinese nationals reportedly are suffering forced labor in several countries in Asia, Africa, and Europe that are hosting Belt and Road Initiative (BRI) projects.

Human smuggling from China to the United States—both by land and by sea—is reported to be on the rise. The going rate per person smuggled is believed to be $50,000 or more.[46] From a crime convergence perspective, Chinese criminal syndicates are expanding their ties with the Mexican cartels and other criminal organizations in Latin America and diversifying into other illicit markets. According to the Polaris, human trafficking and massage parlors involving Chinese organized criminals are also a significant concern to the United States especially related to illicit massage businesses (IMBs), which generate $2.5 billion annually.[47] The vast majority of women reported to have been trafficked in IMBs are from China, with a relatively high number coming from the Fujian province.[48]

CHINA'S MONEY LAUNDERING, TBML, AND CROSS-BORDER ILLICIT FINANCE ACTIVITIES

On the Chinese threats related to money laundering including trade-based money laundering (TBML), John Cassara, Global Financial Integrity (GFI), and board member of ICAIE, has been doing some innovative research on the breath and scale of China's involvement in money laundering and trade-based money laundering operations globally.[49] Mr. Cassara characterizes Chinese criminals' cross-border illicit finance activities as the biggest money laundering hub in the world, introducing and laundering approximately $1.5 to $2 trillion of illicit proceeds into the world's licit economy every year.[50] In other words, according to Mr. Cassara, China is responsible for approximately one-half of the money laundering in the world today, as measured by China's/the CCP's involvement in predicate offenses for money laundering.[51]

The U.S. Department of State similarly recognizes China as a global center for money laundering for criminals in the country and from around the world, and notes that "corruption is a major factor in money laundering."[52] An estimated $2 trillion representing proceeds in corruption alone have been laundered out of China since 1995.[53] Given the illicit enrichment from the numerous criminal activities that

[44] U.S. Department of State, "2021 Trafficking in Persons Report," Office to Monitor and Combat Trafficking in Persons, June 2021, accessible at *https://www.state.gov/reports/2021-trafficking-in-persons-report/.*

[45] *Ibid.*

[46] Michael Lipin, "U.S. Media Scrutinize Wave of Chinese Migrants Illegally Crossing From Mexico," Voice of America, June 28, 2016, accessible at *https://www.voanews.com/usa/us-media-scrutinize-wave-chinese-migrants-illegally-crossing-mexico.*

[47] Polaris, "Human Trafficking in Illicit Massage Businesses," Polaris, 2018, accessible at *https://massagetherapy.nv.gov/uploadedFiles/massagetherapy.nv.gov/content/Resources/FullReportHumanTraffickinginIllicitMassageBusinesses.pdf.*

[48] *Ibid. See also United States of America v. Zongtao Chen a.k.a. Mark Chen, Weixuan Zhou, Yan Wang a.k.a. Sarah, Ting Fu, Chaodan Wang,* November 15, 2018, retrieved August 5, 2019, accessible at *https://www.justice.gov/usao-or/press-release/file/1124296/download.* Department of Justice, U.S. Attorney's Office, District of Oregon, "Nationwide Sting Operation Targets Illegal Asian Brothels, Six Indicted for Racketeering," January 16, 2019, retrieved August 5, 2019, accessible at *https://www.justice.gov/usao-or/pr/nationwide-sting-operation-targets-illegal-asian-brothels-six-indicted-racketeering.*

[49] John Cassara, "Money Laundering and Illicit Financial Flows: Following the Money and Value Trails," @John Cassara, 2020, accessible at *https://www.uscc.gov/sites/default/files/Research/Fentanyl%20Flows%20from%20China.pdf.*

[50] John Cassara, "China Is the Biggest Money Laundering Threat," August 21, 2020, accessible at *http://www.johncassara.com/articles.html.*

[51] *Ibid.*

[52] U.S. Department of State, "International Narcotics Control Strategy Report, Volume II, Money Laundering," Bureau of International Narcotics and Law Enforcement Affairs (INL), March 2021, accessible at *https://www.state.gov/wp-content/uploads/2021/02/21-00620-INLSR-Vol2_Report-FINAL.pdf.*

[53] Christine Duhaime, "$2,000,000,000,000 in Proceeds of Corruption Removed from China and Taken to U.S., Australia, Canada and Netherlands," Duhaime Anti-Money Law in China, Janu-

I have already mentioned here today, when you include corruption and illicit financial flows, it should not come as a surprise that trillions of dollars in illicit proceeds are being generated from the predicate offenses for money laundering that touch China's jurisdiction and markets.

In both the 2016 report by the Organisation for Economic Co-operation and Development (OECD) on counterfeit and pirated goods as well as the 2017 GFI report "Transnational Crime and the Developing World" that outlined some of the top illicit markets, China seems to be the common denominator, with Chinese illicit proceeds dwarfing all others.[54]

Building on earlier illicit finance methodologies such as the Black Market Peso Exchange (BMPE)—where drug proceeds were used to purchase trade items such as electronics, garments, and toys—money launderers today import cheaply manufactured Chinese goods or counterfeits at overvalued prices to wash criminally derived dirty money.[55] There have been major multi-billion-dollar investigations showing that Chinese authorities actively obstructed justice and did not work with law enforcement counterparts in jurisdictions where money laundering predicate offenses have occurred.

Shadow banking, Chinese underground banking systems (CUBS), the use of mirror accounts, Chinese capital flight, and alternative remittance systems such as "fei-chein" (flying money) all sometimes use trade-based value transfer. Trade fraud is the largest component of TBML. Trade-based value transfer is a perfect vehicle to transfer money/value in the form of trade goods out of the country by importing goods at overvalued prices or exporting goods at undervalued prices.

China is the biggest trading nation in the world. The magnitude of international trade masks the occasional illicit trade transaction, making it very difficult for Customs and law enforcement to identify individual instances of TBML, Yet, according to a 2020 GAO report on TBML, Homeland Security Investigations notes that China is one of the countries of most concern.[56]

According to FATF,[57] China has not effectively enforced their anti-money laundering laws which has enabled corrupt officials and criminals to launder cash through anonymous shell companies and other methods. For example, recent reporting has highlighted how Chinese citizens are leveraging the "flying money" informal value transfer systems to circumvent the current strict foreign currency controls and personal foreign exchange transaction limits (U.S. $50,000) or smurfing of lesser amounts of the thresholds.[58]

Cybercrime, virtual currency, and online e-commerce have enabled some criminals to convert electronic funds in China into hard currency overseas.[59] There has been discussion in China on easing of capital controls and whether it will further accelerate money laundering and TBML activities in China. This is difficult to answer given the growing influence of cryptocurrency and other value transfer systems in licit and illicit transactions, the lack of transparency in China, and continued weaknesses in fighting corruption and predicate crimes to money laundering. But it is

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ary 2, 2017, accessible at *https://www.antimoneylaunderinglaw.com/2017/01/qa-on-the-2-trillion-in-proceeds-of-corruption-removed-from-china-and-taken-to-us-australia-canada-and-netherlands.html.*

[54] Channing (May) Mavrellis, "Transnational Crime and the Development World," Global Financial Integrity, March 27, 2017, accessible at *https://www.gfintegrity.org/report/transnational-crime-and-the-developing-world/*. Organisation for Economic Co-operation and Development (OECD) and European Union Intellectual Property Office (EUIPO), Trends in Trade in Counterfeit and Pirated Goods, March 2019, accessible at *http://www.oecd.org/gov/risk/trade-in-counterfeit-and-pirated-goods-9789264252653-en.htm.*

[55] John Cassara, "China Is the Biggest Money Laundering Threat," August 21, 2020, accessible at *http://www.johncassara.com/articles.html.*

[56] U.S. General Accounting Office (GAO), "Trade Based Money Laundering: U.S. Government Has Worked With Partners to Combat the Threat, but Could Strengthen Its Efforts," GAO–20–333, April 2020, accessible at *https://www.gao.gov/assets/gao-20-333.pdf.*

[57] Financial Acton Task Force (FATF), "China's progress in strengthening measures to tackle money laundering and terrorist financing," FATF Mutual Evaluations, Follow-Up Report China, September 2020, accessible at *https://www.fatf-gafi.org/publications/mutualevaluations/documents/fur-china-2020.html.*

[58] Vaishali Basu Sharma, "China emerging as a global hub for money laundering operations," *The Week Magazine,* September 18, 2020, accessible at *https://www.theweek.in/news/world/2020/09/18/china-emerging-as-a-global-hub-for-money-laundering-operations.html.*

[59] *Ibid.*

possible that the easing of capital controls across borders could "encourage money laundering and asset-stripping" through the commingling of licit and illicit funds.[60]

In addition to TBML, Chinese criminal syndicates and their money facilitators have laundered great sums of dirty money through the use of anonymous shell companies and the purchasing of expensive real estate in the United States, Canada, Europe, UAE, luxurious resort islands, and top offshore destinations such as the British Virgin Islands, Singapore, Cook Islands, and Panama. According to the National Association of Realtors (NAR), China has continued to exceed all other buyers in the United States both in units and dollar volume of residential housing.[61] Despite capital flight controls in China, many of the purchases are made in cash. There is also a lack of beneficial ownership information.

Canada, in particular Vancouver, has also been a favorite place for Chinese organized crime and corrupt officials to launder their "hot money" through real estate and other investments such as luxury sports cars and apparel.[62] Chinese Organized Crime in Canada is connected to a global network and "has strong linkages to Hong Kong and China, which is a source country for counterfeit goods, contraband tobacco, and chemicals used to produce synthetic drugs, as well as migrants who are smuggled into this country."[63]

Finally making matters worse, China has shown little cooperation with the international law enforcement community in combatting many of the criminal activities and corresponding money laundering that I have been underscoring at this hearing. Here let me take a moment to thank Senator Cassidy for his leadership in the Congress in elevating the importance of fighting trade-based money laundering, as a critical tool in our arsenal to protect our national security.

FREE TRADE ZONES AND BELT AND ROAD INITIATIVE: THE EXPANSION OF ILLICIT ECONOMIES

A few points on the abuse of free trade zones and how China leverages the Belt and Road Initiative to expand illicit economies around the world.

Free Trade Zones (FTZs) can have a catalytic effect on economies, including attracting Foreign Direct Investment and helping to expand economic growth.[64] But in too many parts of the world, those FTZs that are unregulated or unmonitored are exploited on a daily basis by criminals to facilitate illicit activities that produce broader market reputational harm and put the physical security of many communities in danger.[65]

The FATF has identified FTZs as posing a high risk for money laundering and a threat to the integrity of global financial regulatory standards. For example, as recently reported by the U.S. State Department in this year's Country Reports on Terrorism, the free trade zones in the Tri-Border Area of Argentina, Brazil, and Paraguay remained regional nodes for money laundering and are vulnerable to terrorist financing.[66]

The reality is that criminals are diligently moving illegal products from FTZs into surrounding markets, evading customs, not paying excise duties, and putting locally

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[60] Yu YongDing, "The Temptation of China's Capital Account," Project Syndicate, March 27, 2013, accessible at *https://www.project-syndicate.org/commentary/the-risks-of-easing-china-s-capital-controls-by-yu-yongding.*

[61] National Association of Realtors (NAR), "Realtor Survey Shows Decline in Foreign Investment in U.S. Residential Real Estate," NAR Press Release, July 17, 2019, accessible at *https://www.nar.realtor/newsroom/realtor-survey-shows-decline-in-foreign-investment-in-u-s-residential-real-estate.*

[62] Stephen Schneider, Ph.D., "Money Laundering in British Columbia: A Review of the Literature," report submitted to The Cullen Commission of Inquiry into Money Laundering in British Columbia, May 29, 2020, accessible at *https://www.researchgate.net/profile/Stephen-Schneider-3/publication/343655967_Money_Laundering_in_British_Columbia_A_Review_of_the_Literature/links/5f36ae4992851cd302f44852/Money-Laundering-in-British-Columbia-A-Review-of-the-Literature.pdf.*

[63] *Ibid.*

[64] The Economist Intelligence Unit (EIU), "The Global Illicit Trade Environment Index: Free Trade Zones," EIU and Transnational Alliance to Combat Illicit Trade (TRACIT), 2018, accessible at *https://www.tracit.org/uploads/1/0/2/2/102238034/eiu_ftz_illicit_trade_paper.pdf.*

[65] OECD, "Trade in Counterfeit Goods and Free Trade Zones," OECD Task Force on Countering Illicit Trade (TF–CIT), March 15, 2018, accessible at *https://www.oecd.org/gov/trade-in-counterfeit-goods-and-free-trade-zones-9789264289550-en.htm.*

[66] U.S. Department of State, "Country Reports on Terrorism," Office of the Coordinator for Counterterrorism, accessible at *https://www.state.gov/country-reports-on-terrorism-2/.*

manufactured and legitimately imported goods at a competitive disadvantage.[67] Payments for counterfeits being trafficked through the UAE from China and on to Africa may eventually wind up in Panama or Europe, where they then help to fund other types of illegal activity, be it more illicit trade or other forms of criminality.[68]

China's Belt and Road Initiative (BRI) is an ambitious multi-trillion-dollar economic development assistance program that is funding massive projects across the developing world including roads, ports, pipelines, electrical power grids, mining, telecommunications, railroads, and other infrastructure.[69] The licit trade channels and supply chains that the BRI is constructing are also creating illicit pathways exploited by kleptocrats, furthering market penetration by criminals, and contributing to the expansion of illicit economies globally.[70]

The BRI global footprint tracks some of the biggest illicit trade routes known for corruption, money laundering, and the trafficking of narcotics, weapons, counterfeits, humans, illegally mined natural resources, and other contraband. The use of AI and data mapping can show overlays of illicit routes and criminal networks and how China is helping to expand and bridge a super highway of illicit economies globally, exporting forced labor practices, and violating human rights of both Chinese and local workers.[71] China's economic exploitation, reliance on cheap labor, and unfair trade practices in BRI projects are against the spirit of free trade, puts U.S. competitiveness at a disadvantage, and the ability of U.S. firms to compete in these markets.[72]

In Africa, Southeast Asia, and other parts of the world, China's BRI saddles recipient countries with long-term loans. These serve as debt-traps that impoverish communities, as kleptocrats line their pockets and pad their offshore accounts while enabling China to expand its influence and control of these countries' natural resources and strategic critical infrastructure.[73] Through its BRI leverage, China's investments have increased their influence and control of key ports in Latin America and the Caribbean.

Over the past 15 years, Chinese state-owned policy banks have provided close to $150 billion in loan commitments in Latin America, exceeding lending of the World Bank, the Inter-American Development Bank (IDB), and CAF Development Bank of Latin America combined.[74] China's overall investments and expenses related to the BRI could reach $1.2–1.3 trillion by 2027.[75] At the June 2021 G7 summit, President Biden and other G7 leaders announced a new "Build Back Better World (B3W)" to

[67] Royal United Services Institute (RUSI), "Criminal Risks in Free Trade Zones," April 26, 2021, accessible at *https://rusi.org/explore-our-research/projects/criminal-risks-in-free-trade-zones.*

[68] The Economist Intelligence Unit (EIU), "The Global Illicit Trade Environment Index: Free Trade Zones," EIU and Transnational Alliance to Combat Illicit Trade (TRACIT), 2018, accessible at *https://www.tracit.org/uploads/1/0/2/2/102238034/eiu_ftz_illicit_trade_paper.pdf.*

[69] Judy Woodruff, "China's massive Belt and Road initiative builds global infrastructure—and influence," PBS News Hours, September 27, 2019, accessible at *https://www.pbs.org/newshour/show/how-historic-belt-and-road-infrastructure-project-is-building-chinas-global-influence.*

[70] Will Doig, "The Belt and Road Initiative Is a Corruption Bonanza: Despots and crooks are using China's infrastructure project to stay in power—with Beijing's help," *Foreign Policy (FP) Magazine,* January 15, 2019, accessible at *https://foreignpolicy.com/2019/01/15/the-belt-and-road-initiative-is-a-corruption-bonanza/*. Elaine Dezenski, "Below the Belt and Road—Corruption and Illicit Dealings in China's Global Infrastructure," Foundation for Defense of Democracies (FDD), May 6, 2020, accessible at *https://www.fdd.org/analysis/2020/05/04/below-the-belt-and-road/*.

[71] Jennifer Hillman and Alex Tippett, "Who Built That? Labor and the Belt and Road Initiative," Council on Foreign Relations (CFR) Blogs, The Internationalist, July 6, 2021, accessible at: *https://www.cfr.org/blog/who-built-labor-and-belt-and-road-initiative.*

[72] *Ibid.*

[73] Anna Gelpern, Sebastian Horn, Scott Morris, Brad Parks, and Christoph Trebesch, "How China Lends a Rare Look into 100 Debt Contracts with Foreign Governments," joint publication by Georgetown Law and Peterson Institute for International Economics; Kiel Institute for the World Economy; AidData, William and Mary, and Center for Global Development; and Kiel Institute, Kiel University, and CEP, March 2021, accessible at *https://docs.aiddata.org/ad4/pdfs/How_China_Lends__A_Rare_Look_into_100_Debt_Contracts_with_Foreign_Governments.pdf.*

[74] Pepe Zhang, "Belt and Road in Latin America: A regional game changer?", The Atlantic Council, October 8, 2018, accessible at *https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/belt-and-road-in-latin-america-a-regional-game-changer/*.

[75] Andrew Chatzky and James McBride, "China's Massive Belt and Road Initiative," Council on Foreign Relations, January 28, 2020, accessible at *https://www.cfr.org/backgrounder/chinas-massive-belt-and-road-initiative.*

counter China's BRI and to help developing countries on their infrastructure needs and address some of their sustainable development national priorities.[76]

CONCLUSION: FORWARD ENGAGEMENT, HONEST DIALOGUE, AND PPP VIGILANCE

The risks and gravity of China's cross-border support for illicit trade, corruption, and criminality are impacting market stability, the integrity of the international financial system, the competitiveness of our industries, the rule of law, and the public health and safety of people across societies.

Given the scale of today's illicit economies, the U.S. Congress and the Biden administration, working with the business community and our international partners, must engage China constructively, honestly, and cooperatively to address many of the illicit trade threats that I have outlined today.

- We need to elevate the fight against illicit economies and crime convergence in Congress as a national security and foreign policy priority, including through a strong bipartisan congressional caucus and/or an Advisory Commission. Such a platform can send a strong and united message to China, and others, urging them to work with the United States towards collective action and high visibility to shut down illicit markets, investigate and prosecute corrupt and criminal actors and their complicit facilitators, and to confiscate their dirty money.
- We must find ways to further empower our law enforcement agencies with new legal authorities and the necessary resources to disrupt illicit markets and anonymized criminal communications, prosecute illicit actors and threat networks, and combat corruption and money laundering safe havens.
- We must develop a national security strategy to combat trade-based money laundering (TBML) and to confiscate criminally derived proceeds; promote information sharing, coordinate actionable intelligence across borders; leverage blockchain, AI, and innovative technologies; and to develop more innovative and smarter global supply chain solutions to combat illicit pathways and illicit financial flows.
    - We also need to build greater awareness on the threats posed by TBML and threat finance through training, education, and outreach. As the Co-Director of the Anti-Illicit Trade Institute (AITI, *https://traccc.gmu.edu/projects/current/anti-illicit-trade-institute/*) of the Terrorism, Transnational Crime and Corruption Center (TraCCC, *https://traccc.gmu.edu/*), Schar School of Policy and Government, George Mason University, AITI-TraCCC has embarked on an innovative executive program to combat TBML and illicit trade.[77]
- We urge Congress to pass the Shop Safe Act[78] and other laws that stipulate all on-line items for sale must list in the product description clearly identifiable country or origin; sanction high-risk violators that are shipping and receiving illicit contraband through international mail facilities and express consignment hubs; establish trademark and contributory liability for online marketplace platforms when a third-party sells a counterfeit product that poses a risk to consumer health or safety, and other harms, and where platforms do not follow best practices; incentivize through best practices and due diligence the verification and vetting of such third-party sellers to ensure their legitimacy, removing counterfeit listings, and removing sellers who repeatedly sell counterfeits.[79]

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[76] Steve Holland and Guy Faulconbridge, "G7 rivals China with grand infrastructure plan," Reuters, June 13, 2021, accessible at: *https://www.reuters.com/world/g7-counter-chinas-belt-road-with-infrastructure-project-senior-us-official-2021-06-12/*. *See also,* The White House, "FACT SHEET: President Biden and G7 Leaders Launch Build Back Better World (B3W) Partnership," June 12, 2021, accessible at *https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/12/fact-sheet-president-biden-and-g7-leaders-launch-build-back-better-world-b3w-partnership/*.

[77] Anti-Illicit Trade Institute (AITI) of the Terrorism, Transnational Crime and Corruption Center (TraCCC), Schar School of Policy and Government, George Mason University, accessible at *https://traccc.gmu.edu/*.

[78] The Shop Safe Act 2020, accessible at *https://judiciary.house.gov/uploadedfiles/shop_safe_-_bill_text.pdf*.

[79] John H. Zacharia and Kari Kammel, "Congress's Proposed E-Commerce Legislation for Regulation of Third-Party Sellers: Why It's Needed and How Congress Should Make It Better," *Business Law Journal,* 21 U.C. DAVIS BUS. L.J. 91, February 8, 2021, and accessible at *https://blj.ucdavis.edu/archives/vol-21-no-1/zacharia-and-kammel.html*.

We should also explore more effective cooperative partnerships between China, Mexico Canada, and the United States through a new four-way framework—a Quadrilateral Commission against Illicit Trade and International Organized Crime—to halt this deadly commerce, and the flooding of illicit goods into the United States. Such a four-party confidence-building process would reinforce the homeland security of each country.[80]

- There are no global problems that can be solved by any one partner working alone or in any one sector.
  - We need more holistic whole-of-society approaches in dealing with China in order to strengthen their political will, including dynamic public-private partnerships, to end illicit economies including those that the BRI is aiding. That's why ICAIE is proud to support the United to Safeguard America from Illegal Trade (USA–IT) public education initiative, and other public and private sector partnerships such as the U.S. Council for International Business (USCIB)-led efforts with the OECD, G20, and APEC, working to protect American security and prosperity from black markets, illegal trade, and criminal entrepreneurs.[81]

As long as China continues to aggressively build a "great wall of steel" as President Xi recently said during the celebration of the 100th anniversary of China's ruling Communist Party,[82] the United States must be vigilant of its own national interests and hold China accountable.

The U.S. must also confront and constructively engage China to be a more responsible market driver and citizen of the world in addressing a multitude of the illicit threats that harm U.S. national security, and the collective security of all nations.[83] Working with China, we must end the corruptive influence of today's bad actors who are exploiting today's illicit economies and are sabotaging legitimate commerce and the economic sustainability of nations who play by the global trade system of rules, and by the rule of law.

Through shared responsibility, the United States must find common ground with China on mutually shared interests of economic growth, shared prosperity, and cross-border law enforcement cooperation to combat the multidimensional threats posed by illicit economies harming both countries and other nations across the globe, thereby helping to ensure greater market security, safer communities, and sustainable peace.

Thank you, and I look forward to your questions.

Question Submitted for the Record to David M. Luna

Question Submitted by Hon. Bill Cassidy

Question. The Chinese Government imposes strict capital controls on its citizens, which may cause some who would otherwise rather stay within the rules to use illicit means such as trade-based money laundering (TBML), sometimes through cryptocurrencies, to move money out of China, facilitating illicit finance and organized crime in the United States and Latin America. It seems like there is room for us to cooperate here, since both countries have an interest in stopping TBML and other similar crimes. Is there some way that we can suggest that we work together?

Answer. If China wanted to stop the hundreds of billions of dollars in illicit financial flows related to illicit trade, corruption, and money laundering, it could easily do so. The failure to constructively engage China will continue to have long-term impacts to U.S. national security if unaddressed. This is why it is critical that the United States hold China accountable and ensure that it is a more responsible part-

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[80] Earl Anthony Wayne and David M. Luna, "Attack Fentanyl Flows Across Borders: A Real Emergency," The Wilson Center, March 18, 2019, accessible at *https://www.wilsoncenter.org/article/attack-fentanyl-flows-across-borders-real-emergency.*

[81] United to Safeguard America from Illegal Trade (USA–IT), accessible at *https://www.usait.org/.*

[82] Ben Westcott and Steven Jiang, "Foreign countries that 'bully' China will meet a 'great wall of steel,' says Xi during Communist Party centenary," CNN, July 1, 2021, accessible at *https://www.cnn.com/2021/07/01/china/ccp-100-beijing-china-xi-celebration-intl-hnk/index.html.*

[83] Congressional Research Service (CRS), "China's Engagement With Latin America and the Caribbean," July 1, 2021, accessible at *https://crsreports.congress.gov/product/pdf/IF/IF10982.*

ner. The United States must bring China to the negotiating table towards more effective enforcement actions to counter cross-border trafficking threats harming U.S. national security.

CONSTRUCTIVE DIPLOMATIC ENGAGEMENT FOR MORE FRUITFUL COOPERATION

On specific ways to harness political will and work together, we must:

- Elevate the fight against illicit economies globally in Congress through the creation of a bipartisan Congressional Caucus Against Illicit Economies (CCAIE) including democratic transparency and a strong rule-of-law playing field for constructive engagement with China.
- Halt the illicit commerce of deadly fentanyl, synthetic opioids, and other dangerous illegal goods from China into our country, and create a new four-way framework—a Quadrilateral Commission against Illicit Trade and International Organized Crime between Canada, China, Mexico and the United States. The U.S. should aim to strengthen law enforcement coordination with other Five Eyes (FVEY) partners. It should also engage in constructive dialogue with China bilaterally, and multilaterally through the G20, APEC, and other relevant diplomatic fora.
- Require greater transparency from China on its financial regulatory system, capital controls, beneficial ownership, anonymous shell companies, high-value asset purchases, cryptocurrencies, underground financial systems, use of offshores, Chinese underground banking (CUBS) and flying money, and third-party payment systems, and other methods.
- The U.S. may want to work with China and provide mutual legal assistance examining money laundering methodologies especially when licit and illicit funds are commingled related to financial controls and capital flight.
- Pass the CROOK ACT and TBML legislation to counter corrosive corruption, kleptocracy, and illicit finance in China, and other authoritarian states.
- A strong TBML legislation should leverage diplomatic engagement to strengthen the political will in China and other jurisdiction, and the development of a TBML national security strategy. Such a strategy would mobilize a TBML Interagency Task Force to prioritize, investigate and counter TBML threats; enhance information and intelligence sharing across sectors; harness distributed ledger technologies that help secure tracking of trade and standardized export data and invoices; support increased trade data for private-sector and academic research that help to better understand the challenges and inform further policy reforms; and help foreign partner countries strengthen their technical expertise and capacities to identify, prosecute, and curtail TBML across borders.
- Support public-private partnerships such as those being advanced by ICAIE that leverage information sharing and federated machine learning to illuminate illicit networks in the shadow economy, and enable actionable intelligence to law enforcement communities for judicial action against illicit economies and crime convergence finance.

SANCTIONS AND HOLDING CHINA ACCOUNTABLE

If diplomacy does not work, or if the Chinese Government is not committed to confidence-building measures to work with the United States to counter illicit economies, we must not shy away from sanctioning China, including blacklisting it for the continued flooding of U.S. markets with deadly opioids and counterfeits, stealing trade secrets, infringing on American intellectual property rights, the global laundering of dirty money, and cybersecurity crimes.

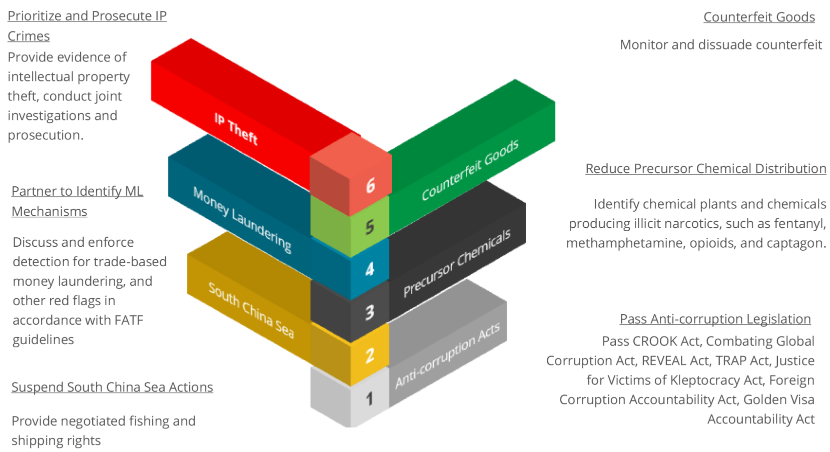
- Building on policies denying safe haven to, and tracking illicit financial flows of, kleptocrats and designated criminals and terrorists, the U.S. may also want to consider banning entry [1] into U.S. ports maritime ships that fly flags of convenience (FoC) that do not provide beneficial ownership information to CPB prior to entering U.S. waters and which contravene the spirit of the Corporate Transparency Act and Anti-Money Laundering Act of 2020, where such

[1] The United States has similarly done after 9/11 to enhance port security to protect against a dirty bomb being delivered by a ship; and when the US banned entry for any single-hulled tanker after the Exxon Valdez oil spill.

ships may be involved in facilitating illicit activities, trafficking counterfeits, smuggling contraband, bribery, and evading sanctions.

ATTACHMENT 1.

Visualizing U.S. Constructive Diplomatic Engagement with China



PREPARED STATEMENT OF JANE NAKANO, SENIOR FELLOW, ENERGY SECURITY AND CLIMATE CHANGE PROGRAM, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

Chair Warren, Ranking Member Cassidy, and distinguished members of the Subcommittee on Fiscal Responsibility and Economic Growth, thank you for the opportunity to appear before you to discuss the rise of Chinese competitiveness in energy technology sectors and its environmental and climate implications.

China's emergence as a globally competitive force in energy technology sectors is a complex and evolving story. The country is the largest producer and consumer of coal as well as the top official financier and exporter of coal-fired power plants in the world. At the same time, the country is a leading exporter of clean energy technology components, as well as the preeminent force along the supply chains for many minerals important for such technologies today. The rise of China as a manufacturer and exporter of a range of energy technologies has been fueled by their government's long-term commitment towards investing in public research and development capacity, and nurturing manufacturing clusters in these sectors. The lagging state of environmental protections as well as weak climate considerations have also aided China's emergence in various energy technology fields. While China may continue to manufacture and export carbon-intensive energy projects, the country is also a major manufacturer and exporter of energy technologies that have more limited emissions profiles. My testimony focuses on the status of the Chinese position in select energy technology sectors and their climate implications.

COAL-FIRED POWER GENERATION

In his speech to the United Nations General Assembly in September 2020, President Xi Jinping of China announced the country's intent to achieve carbon neutrality by 2060. Moreover, at the Leaders' Summit on Climate in April, Xi reaffirmed his earlier commitment to peak the country's emissions by 2030, and announced China's intent to begin phasing down coal consumption in the latter half of this decade. These are undoubtedly welcomed developments.

However, coal continues to be a major source of China's energy supply as well as a focus of energy infrastructure exports and financing. While the share of coal-fired power generation has been declining in line with the country's official reduction targets, domestic construction has not ceased. In 2020, China built 38.4 gigawatts

(GW) of new coal-fired generation capacity domestically. What's more, China is a major financier and exporter of high-carbon energy projects in the world. While China has provided its energy-related official development finance to a variety of fuel sources and technologies, the portfolio has historically been carbon-intensive. Since 2000, China's two global policy banks—the China Development Bank and the Export-Import Bank of China—have financed over $51.6 billion worth of coal projects globally, or about 21 percent of their total energy related financing.[1] Although the share of coal financing under the Belt and Road Initiative (BRI) has declined since its peak at 46 percent in 2015, it still accounted for 27 percent in 2020.[2]

A combination of the desire of the Chinese Government to address excess manufacturing capacity at home, the capacity of leading Chinese policy banks to support coal-fired power plant exports, as well as a wave of coal-finance bans/restrictions by multilateral development banks and other major investors have propelled Chinese banks to become a major source of financing for coal-fired power plants in the world. Coal-fired power plant export has allowed China to find work for its laborers and export plants that no longer met domestic environmental regulations.[3] Unlike its peers in the advanced, industrialized countries, China's leading policy banks are not obligated to abide by the Organization of Economic Cooperation and Development (OECD) Sector Understanding on Export Credits for Coal-Fired Electricity Generation Projects that restricts coal-fired power finance. In fact, these official Chinese institutions merely subject their coal-fired power official development finance to existing host market environmental regulations.[4] Moreover, Chinese policies governing the environmental aspects of their overseas investments are much weaker than those governing their domestic investment.[5]

SOLAR AND WIND POWER[6]

China's strong export position has come to extend to other energy technologies including those with much more limited emissions profiles, such as solar and wind power. The government's support to develop these industries included generous feed-in-tariffs and robust credit to new equipment makers by China's development finance institutions. By the early 2010s, Chinese manufacturing of solar and wind equipment was booming, driving down the equipment prices and facilitating their deployment in advanced, industrialized economies.

In solar PV value chains, China leads the world in the manufacturing of polysilicon and wafers, accounting for two-thirds of the global polysilicon manufacturing capacity (regardless of factory location) and over 90 percent of the global wafer manufacturing capacity today. Even in the segments where China is less dominant, such as solar cell and module manufacturing, leading Chinese companies are vertically integrated, allowing them to exert better cost control and manage output certainty. For example, Chinese companies own about 72 percent of the world's module manufacturing capacity (regardless of factory location) today.

Chinese presence is less dominant in wind power supply chains as the industry preference for larger projects to drive down costs has led the components to be heavier and costlier to ship, thus encouraging supply chains to grow near demand centers. Nonetheless, China is home to about 40–60 percent of the global manufacturing capacity for key wind power components, such as nacelles, wind towers, turbines, and gearboxes.

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[1] Boston University Global Development Policy Center, "China's Global Energy Finance," *https://www.bu.edu/cgef/#/all/EnergySource.*

[2] Christoph Nedopil Wang, "China Belt and Road Initiative Investment Report 2020," The Green Belt and Road Initiative Center, January 21, 2021, *https://green-bri.org/china-belt-and-road-initiative-bri-investment-report-2020/.*

[3] Council on Foreign Relations, "China's Belt and Road: Implications for the United States," Independent Task Force Report No. 79, Council on Foreign Relations, 2021, p. 57.

[4] Bo Kong and Kevin P. Gallagher, "The New Coal Champion of the World," *Energy Policy* 155 (2021) 112334, March 11, 2021.

[5] Kelly Sims Gallagher and Qi Qi, "Chinese Overseas Investment Policy: Implications for Climate Change," *Global Policy* (2021) doi 10.1111/1758–5899.12952.

[6] Portions of this section are adapted from Sarah Ladislaw, Ethan Zindler, Nikos Tsafos, Logan Goldie-Scot, Lachlan Carey, Pol Lezcano, Jane Nakano, and Jenny Chase, "Industrial Policy, Trade, and Clean Energy Supply Chains," February 2021, a report by the CSIS Energy Security and Climate Change Program and Bloomberg NEF, *https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/210224_Ladislaw_Industrial_Policy.pdf?DRja.V6axwyBE_PV6Chmdi5k2VqOq33n.*

ELECTRIC VEHICLES AND BATTERIES[7]

China is beginning to establish a commanding position in the electric vehicle (EV) sector too. Today, the country is the largest EV market in the world. Notably, China has been focused on expanding local manufacturing capacity in every phase of lithium-ion battery and EV production, rather than overall EV sales numbers the way many western leaders in the EV industry have. As a result, China has also emerged as a leading producer of key EV components, such as cathodes, anodes, and separators. While the market is more diverse in the final stages of battery production given the legacy production capacities in Japan and South Korea for battery cells, and new facilities in Europe and the United States, cell manufacturing remains concentrated in China.

A host of policies and actions, including demand and supply incentives, public procurement, and R&D (research and development) funding, has propelled the rise of China's EV sector. Since EVs were identified as one of seven "strategic emerging industries" in 2010, and as a key target industry under the Made in China 2025 plan, China has deployed multiple measures to support the sector. For example, under the Energy-Efficient and New-Energy Vehicles Industrial Plan 2012–2020, China focused both on research and development work on EVs, especially to drive down battery costs as well as to improve performance, and on a mass rollout of EVs. The Chinese government spent a large sum of public R&D funding through national labs and universities, developed a few leading companies in each stage of EV battery value chain so as to avoid overcapacity issues, accelerated EV demonstration, and led the development of charging infrastructure. While China has rebalanced its spending towards R&D and government procurement in the recent years, direct purchase subsidies also played a major role in expanding EV sales.

MINERALS[8]

A key factor underpinning China's competitiveness in these clean energy technologies is its commanding position along the supply chains for rare-earth minerals and other minerals as well as metals that are vital to clean energy technology components, such as wind turbines, photovoltaic cells, and EV batteries. China has cultivated its mineral wealth and developed mid- and down-stream capabilities through various industrial policies. For example, China accounts for roughly two-thirds of global production of rare-earth elements. Where it lacks access to minerals, China has invested in mining and upstream projects abroad. For example, limited in cobalt resources, China has invested in cobalt mines and participated in cobalt smelting projects in the Democratic Republic of the Congo, which accounts for nearly two-thirds of cobalt production in the world; China has come to account for about 70 percent of the global cobalt refining capacity.

China made it a priority to "develop research and production of advanced rare-earth applications and new materials (*e.g.,* permanent magnets and lasers) for domestic consumption and export" as early as in the mid 1980s, under the seventh National Five-Year Plan for Rare Earth Industry (1986–1990). By 1985, there already were more than 300 public research institutes and university research centers in China working on research projects related to rare-earth mining, smelting, and applications. Moreover, export and production quotas were among the measures that helped to grow their materials industry.[9]

As China's own demand for minerals for advanced energy technology production rises, China has introduced plans, such as the National Mineral Resource Plan for 2016–2020, to establish the country's capabilities to safeguard its supply chains against various causes of potential supply disruptions. More recently, in January 2021, China introduced draft Regulations on Rare Earth Management. The regula-

[7] Portions of this section are adapted from Sarah Ladislaw, Ethan Zindler, Nikos Tsafos, Logan Goldie-Scot, Lachlan Carey, Pol Lezcano, Jane Nakano, and Jenny Chase, "Industrial Policy, Trade, and Clean Energy Supply Chains," February 2021, a report by the CSIS Energy Security and Climate Change Program and BloombergNEF, *https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/210224_Ladislaw_Industrial_Policy.pdf?DRja.V6axwyBE_PV6Chmdi5k2VqOq33n.*

[8] Portions of this section are adapted from Jane Nakano, "The Geopolitics of Critical Minerals Supply Chains," March 2021, a report by the Center for Strategic and International Studies, *https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/210311_Nakano_Critical_Minerals.pdf?DR03x5jIrwLnNjmPDD3SZjEkGEZFEcgt.*

[9] The export quota, introduced in 1999, ended following a World Trade Organization (WTO) dispute settlement panel ruling against China. China's rare earth production quota, introduced in 2006, remains in effect.

tions would reinforce the protection of what the government regards as the "prized resources [with] irreplaceable significance for the upgrade of traditional industries, and the development of emerging industries,"[10] by strengthening the approval process for mining and processing projects, as well as the rare-earth trade.

The country's preeminence in the mineral supply chains came with a high environmental cost, however. The mining and processing of rare earth elements use a variety of chemical substances and generate significant quantities of waste. In China, rare-earth ore is commonly laced with radioactive materials, such as thorium, and the separation process requires large amounts of carcinogenic toxins, such as sulphates, ammonia, and hydrochloric acid.[11] Without proper environmental protections, such mineral extraction and process can be a source of soil and water contamination. There have been a numerous Chinese and western academic and journalistic accounts of environmental and health damages from these mining activities in China. While China began a large-scale mining of these minerals in the mid-1980s, it was not until the mid-2010s that the government introduced stringent environmental regulations, including technical standards and specifications for rare-earth mining processes.[12]

NUCLEAR[13]

Nuclear energy is also a sector where China is emerging as a global technology supplier, following a remarkable expansion of its domestic nuclear power generation fleet. Between 2011 and 2019, China brought 35 reactor units online at home, 10 units more than all of non-Chinese new units combined worldwide. Although the Fukushima accident tempered its original, robust expansion vision, China's installed nuclear capacity targets remain strong. Per the country's 14th 5-year plan (2021–2025), China will have a total installed capacity of 70 GW by 2025, overtaking France (61 GW), as the second largest in the world behind the United States (96 GW).

Thus far, China's only destination for its nuclear power plant exports is Pakistan. China is pursuing multiple deals in its effort to become a global leader in nuclear power, however, by combining "good enough" technologies with attractive financing. Again, not bound by OECD regulations, China has offered financing that is large (in total amount provided), cheap (with low interest rates) and long-lived (with long repayment periods). China's most active export efforts underway in the United Kingdom and Argentina suggest that China uses financing and a willingness to execute projects others find unattractive as a lever to land additional nuclear projects that can advance its interest. China's rise as a global supplier of nuclear energy technology has profound implications from nuclear safety and nonproliferation, as well as geopolitical perspectives.

CONCLUSION

More needs to be done to address China's financing practices for energy exports that have market distorting effects against cleaner energy sources and technologies, as well as energy technologies that are manufactured by advanced, industrialized democracies like the United States. The United States should work more closely with multilateral development banks and fellow OECD member governments to remedy the lack of international mechanisms to reign in China's public high-carbon financing and export practices.

Also, while China's contribution to reducing the costs of low-emission technologies is undeniable, their practices in mining and processing minerals that are key to clean energy technologies warrant closer evaluation from the environmental, social, and governance perspectives. Concurrently, our over reliance on Chinese supplies of these minerals and metals needs to be remedied.

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[10] Liu Zhihua and Liu Yukun, "China to step up protection of rare earth resources," *China Daily,* January 16, 2021, *https://global.chinadaily.com.cn/a/202101/16/WS60023d3aa31024ad0baa3039.html.*

[11] Jonathan Kaiman, "Rare earth mining in China: The bleak social and environmental costs," *The Guardian,* March 20, 2014, *https://www.theguardian.com/sustainable-business/rare-earth-mining-china-social-environmental-costs.*

[12] Hongqiao Liu, et al., "Rare Earths: Shades of Gray," *China Water Risk,* June 2016, pp. 37–38, *https://chinawaterrisk.org/wp-content/uploads/2016/08/China-Water-Risk-Report-Rare-Earths-Shades-Of-Grey-2016-Eng.pdf.*

[13] Portions of this section are adapted from Jane Nakano, "The Changing Geopolitics of Nuclear Energy," Center for Strategic and International Studies, March 2020, *https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/200416_Nakano_NuclearEnergy_UPDATED%20FINAL.pdf.*

Fundamentally, however, the United States needs to do more to enhance its energy technology competitiveness. The effort to promote American global competitiveness will benefit from the U.S. government playing a strategic role in creating more demand for these technologies, investing in research and innovation, and providing a supportive environment for their manufacturing to thrive. The government also has an essential role to play in strengthening the supply chains for minerals and metals that underpin our clean energy economic activities.

Being competitive in energy technology sectors means preserving a strong innovation eco-system, rebuilding a manufacturing base, and securing supply chains. Moreover, being competitive in clean energy technology sectors is not simply about doing our share in reducing emissions. These technologies are no longer niche and they already account for hundreds of billions of dollars in investment and consumer spending, with strong outlook for further growth.[14] The endeavor therefore has a strategic value to our Nation as competitive clean energy sectors can augment the U.S. position in the global economy.

PREPARED STATEMENT OF HON. WILLIAM E. SPRIGGS, PH.D., PROFESSOR OF ECONOMICS, HOWARD UNIVERSITY; AND CHIEF ECONOMIST, AFL–CIO

Thank you, Chair Elizabeth Warren and Ranking Member Bill Cassidy, for this invitation to give testimony before your committee today on the issue of our Nation's crisis. I am happy to offer this testimony on behalf of the AFL-CIO, America's house of labor, representing the working people of the United States; and based on my expertise as a professor in Howard University's Department of Economics.

My testimony today will discuss gaps in U.S. infrastructure compared to our leading trading partners. Many of these gaps do not require Federal fiscal resources but do require updating our institutions and legal structures to meet the challenges of the 21st century. The current crisis of the COVID pandemic highlights our need to improve. While Congress has reacted swiftly and admirably with aid to support the economy, on many dimensions the U.S. was less resilient than our leading trading partners and is set to have major challenges ahead we can avoid.

Because of Congress, and now the leadership of President Biden, the American Rescue Plan (ARP) has been well received by those who compare global economic activity. The International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD) revised their forecast upward for this year and next based on the passage of the ARP. And, given the importance of the U.S. economy to global economic growth, this changed their optimism for a faster global recovery. Yet, they both still see a full recovery more than a year away.

Thanks to the rapid deployment of vaccines in the U.S., American hospitalization and death rates from COVID plummeted, and after being far above the rest of our trading partners, we have finally now surpassed them in having lower rates of severe outcomes from COVID. That has allowed U.S. economic activity to accelerate, and buoyed by the ARP's support of American households, helped accelerate our job growth. But, even if we maintain this current record setting pace of hiring, it will still be more than a year to get employment back to normal levels.

So, given we are still in the path of recovery, we should focus on lessons learned and make changes to sustain the recovery and make our economy more resilient. Several of the changes that Congress improvised to fix our labor market safety net show key gaps the U.S. faces relative to our competitors. Our labor market regulations are clearly out of date. The scale at which we needed our labor institutions to work only highlight how on a regular basis the resiliency we need is not present.

Among our leading trading partners, we have a lower level of workers covered by collective bargaining agreements. Last year, during the pandemic, while we lost jobs across almost all industries, within industry, relatively more non-union than union jobs were lost, so the share of workers in unions rose. The presence of a collective bargaining agreement helped firms in two ways. One is that by having a partner with whom they could negotiate, firms could retain workers and share the responsibility of making decisions on how to adjust hours and pay and safety conditions. The other is that for some industries, like the airlines, it meant management and work-

[14] Nikos Tsafos, Lachlan Carey, Jane Nakano, and Sarah Ladislaw, "Reshore, Reroute, Rebalance: A U.S. Strategy for Clean Energy Supply Chains," Center for Strategic and International Studies, May 2021, *https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/210519_Tsafos_Reshore_Reroute.pdf?oIS49QNCeuHW43Hqwm83aOuBEuxfVqbx.*

ers could present a consensus view to Congress and policymakers on the best way forward to maintain an orderly slowdown of business and keep maximum flexibility to allow for the fastest restart. Within the trade context itself, researchers have found that similarly, the response of industries with stronger collective bargaining structures led to fewer jobs lost in the face of the China trade shock of this century, than in industries with lower union density.[1] Union workers are, generally, more satisfied with their working conditions than non-union workers,[2] and this helps with worker retention; a problem firms are struggling with as the economy reopens. And when comparing labor market performance of OECD nations, the OECD's research shows that stronger central bargaining systems outperform weak systems in wages, employment and gender and younger workers labor outcomes, primarily because they are better at smoothing economic shocks and reducing inequality.[3] Updating our National Labor Relations Act to address changes in the workplace since the 1940s, such as by passing the PRO Act, is key.

Our unemployment insurance system was clearly outdated and overwhelmed. It was designed primarily to deliver income support to manufacturing workers during business cycles prompted by inventory cycle busts. Yet, in February 2020 we had roughly the same number of restaurant workers as manufacturing workers and lost more restaurant jobs than the size of our nondurable manufacturing workforce in 2 months. But in a normal economy, fewer than 10 percent of restaurant workers receive unemployment benefits.[4] Going forward, losing the changes Congress enacted on this temporary basis, the system will be more fragile, exposing greater risk on the macroeconomy and reducing the resilience of individual households to economic shocks.[5] The low wages of too many workers made them too precarious, and additions to State benefits were necessary. Several studies show the extra benefits did not slow people returning to work,[6] but did help ensure cash balances for all households by income quintile and race.[7] Those steps are key to the economy having a speedy recovery. The U.S. stood out among our trading partners because they leveraged their stronger labor market institutions to implement job retention programs, keeping workers and employers attached.[8] A higher minimum wage, as most of our trading partners have, would make more families resilient.

Another shortcoming the U.S. labor market faced is our lack of paid leave, either paid sick days or paid family leave. With the recent resurgence of COVID in many States, dealing with lost pay from hospitalizations will continue to be a challenge for too many Americans. And our lack of paid family leave will continue to keep too many workers out of the labor market. Labor force participation for women fell to 54.6 percent in April 2020, its lowest level since late 1985, and has only rebounded

[1] Robert Baldwin finds that during the Japanese import boom, 1977–1987, trade impacted less-than-college-educated union workers more than non-union workers, but from 1987 to 1997, trade had no different impact on jobs losses for union or non-union workers. Robert Baldwin, *The Decline of U.S. Labor Unions and the Role of Trade* (Petersen Institute: Washington, 2003). Alhquist and Downey find that between industries, those with higher union density fared better than lower union density industries in the face of the China trade shock. Though within manufacturing, union workers suffered more losses. John S. Ahlquist and Mitch Downey, "Import Exposure and Unionization in the United States," *https://ccd.ucsd.edu/_files/papers/AhlquistDowneyTradeUnionsApril2019.pdf.*

[2] Richard Freeman, David Blanchflower and Alex Bryson, "Unions Raise Worker Well-being," *https://european.economicblogs.org/voxeu/2020/blanchflower-bryson-unions-wellbeing.*

[3] OECD, *Negotiating Our Way Up: Collective Bargaining in a Changing World of Work* (OECD Publishing: Paris, 2019).

[4] U.S. Bureau of Labor Statistics, *Characteristics of Unemployment Insurance Applicants and Benefit Recipients News Release,* November 7, 2019, *https://www.bls.gov/news.release/archives/uisup_09252019.htm.*

[5] Josh Bivens, Melissa Boteach, Rachel Deutsch, Francisco Díez, Rebecca Dixon, Brian Galle, Aliz Gould-Werth, Nicole Marquez, Lily Roberts, Heidi Shierholz and William Spriggs, *Reforming unemployment insurance: Stabilizing a system in crisis and laying the foundation for equity* (Economic Policy Institute: Washington, June 2021), *https://files.epi.org/uploads/Reforming-Unemployment-Insurance.pdf.*

[6] Arindrajit Dube, "Aggregate Employment Effects of Unemployment Benefits during Deep Downturns: Evidence from the Expiration of the Federal Pandemic Unemployment Compensation," NBER Working Paper 28470 (National Bureau of Economic Research: Cambridge, February 2021), *https://www.nber.org/system/files/working_papers/w28470/w28470.pdf?orgid=197&utm_att1=moneyorgid=197&utm_att1=money.*

[7] JPMorgan Chase and Co. Institute, Financial outcomes by race during COVID–19, Research Brief (JPMorgan Chase Institute: Washington, June 2021) *https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/institute/pdf/financial-outcomes-by-race-during-COVID-19.pdf.*

[8] OECD, *OECD Employment Outlook 2021: Navigating the COVID–19 Crisis and Recovery* (OECD Publishing: Paris, July 2021).

to its levels of 1988. Coupled with our lack of a Federal policy ensuring access to child care, the U.S. sticks out among our trading partners for remaining to have labor regulations designed for a male dominated manufacturing world. In 2018, the U.S. ranked 10th among G20 economies for women's labor force participation, and 6th among the G7 economies, only ahead of Italy.[9] Given the aging of the American population, it is imperative that the U.S. adopt the leading recognized policies that support women's labor force participation, or our economic growth will stall faster.

These shortcomings were laid bare by the COVID crisis. They show on the macroeconomic level how destabilizing our labor market institutions are. To be competitive on a global level, we need to understand how, on a local labor market level, crises have been occurring throughout this century. In addition to updating our labor regulations, we need to expand our vision of what we need for trade adjustment assistance. A consensus has developed from research that trade in this century has had a devastating impact on those local labor markets that faced the greatest low wage and low labor standard competition from trade.[10] This was true of workers in those communities, and the destabilizing of sources of high wage jobs had a bigger impact on Black workers. Trade Adjustment Assistance needs to give additional focus to supporting communities that are impacted by trade with the tools to engage active labor market policies, especially adding youth job and training programs.

And, to remain competitive in the 21st century, the U.S. needs to go back to find its future. In the middle of the 20th century, the U.S. made massive investments in supporting American students getting broader access to, and completing, higher education. It propelled us to be number one among OECD nations, and yielded American dominance of computer technology innovations at the end of the 20th century. In the 20th century, America pioneered in free college education or highly subsidized financing of higher education loans, including substantial loan forgiveness, to achieve that competitive advantage.[11] But, in the 21st century we reversed course, raised the cost of student borrowing, and dramatically cut public support of higher education transferring the bulk of financing higher education from State provided funds to instead burden student tuition revenue. The result is a crisis of student debt for Black and Latino students and low-income students that are now most of America's potential college students.[12] To maintain U.S. leadership we must increase our college graduates among the groups with the lower the college attainment.

I have emphasized American workers in my testimony. Clearly, to be competitive America must have 21st-century physical infrastructure: safe roads, bridges, reliable clean energy public transportation and clean drinking water, up-to-date school and university buildings and laboratories. But, as we look to the 21st century, we cannot forget America's true competitiveness lies in its people and our ideals as a Nation. This century sees old challenges of American democracy on the rise: fascism and the state-controlled economy of China. Our previous leadership was attained by having a government that bet on the American people and invested heavily in Americans. Unfortunately, not always all Americans and not all Americans equally. But this century we must strive to do better, and this time invest in all Americans.

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[9] OECD and ILO, Women at Work in G20 countries: Progress and Policy action [Paper prepared under Japan's G20 Presidency (2019)], *https://www.oecd.org/g20/summits/osaka/G20-Women-at-Work.pdf.*

[10] *See for example:* David Autor, David Dorn and Gordon Hanson, "The China Syndrome: Local labor market effects of import competition in the United States," *American Economic Review* 103, No. 6 (October 2013): 2121–2168; and William Spriggs, Nyana Browne and Bethel Cole-Smith, "China Import Penetration and U.S. Labor-Market Adjustments" (May 2021), *https://economics.howard.edu/sites/economics.coas.howard.edu/files/2021-06/Impact_of_China_Trade_Shock_on_Black_Employment___May_2021.pdf.*

[11] John Bound and S. Turner, "Going to War and Going to College: Did World War II and the GI Bill Increase Educational Attainment for Returning Veterans?", *Journal of Labor Economics* 20 No. 4 (October 2002): 784–815; K.W. Olson, "G.I. Bill and Higher Education: Success and Surprise," *American Quarterly,* 25 No. 5 (December 1973): 596–610; P.E. Flattau, J. Bracken, R. Van Atta, A. Bandeh-Ahmadi, R. de la Cruz and K. Sullivan, *The National Defense Education Act of 1958: Selected Outcomes* (Science and Technology Policy Institute, Institute for Defense Analysis: Washington, 2006), *https://d1wqtxts1xzle7.cloudfront.net/8411877/NDEA%20D3306-FINAL.pdf?1328607798=&response-content-disposition=inline%3B+filename%3DThe_National_Defense_Education_Act_of_19.pdf&Expires=1624918411&Signature=QcoluWInYlBJNs~SytaaindfPmeNyLVNkIv~0-M92kzq2wO~jQn.*

[12] M. Mitchell, M. Leachman and M. Saenz, *State Higher Education Funding Cuts have Pushed Costs to Students, Worsened Inequality* (Center on Budget and Policy Priorities: Washington, 2019); J. Bound, B. Barga, G. Khanna and S. Turner, "A Passage to America: University Funding and International Students," *American Economic Journal: Economic Policy* 12 No. 1 (February 2020): 97–126.

And we must lead by being the beacon on human and labor rights, as the global champion of democracy. To be competitive in this century we must advance and broaden the right to vote: those States that have started attacking the right to vote are the States that are not investing in K–12 public education or reversing course to invest in higher education or in this pandemic crisis ensure expanding access to health insurance. Here at home democracy is important to economic growth, as it is globally.

And we must protect and lead in labor rights, to show other nations that is the way to more sustainable economic growth. That means paying those incarcerated the Federal minimum wage, at least; and adopting far more ILO conventions so we can pull other countries forward in our trade agreements to raise the global floor instead of getting us all in a race to the bottom. And that means, again raising the global floor, by insisting there is level playing field between nations and corporations when it comes to paying a fair share of taxes. Without that revenue, we cannot have all nations make the investments in health, education and labor standards we need so the rules of global competition are rules that raise the world, instead of lowering American standards.

So, to be competitive, let us build our roads, but let us not lose focus on strengthening Americans. Let us lead by example as a Nation, to define the rules of global competition.

QUESTIONS SUBMITTED FOR THE RECORD TO HON. WILLIAM E. SPRIGGS, PH.D.

QUESTIONS SUBMITTED BY HON. RON WYDEN

Question. In the past, U.S. infrastructure policies focused on short-term repair and bare-bones maintenance of our physical infrastructure, instead of smart, bold, long-term investments. When it comes to human services infrastructure, we have seen a similar lack of investment in the safety net programs and training programs that support our workforce.

Can you discuss the importance of the U.S. taking bold action to invest in both physical and human services infrastructure, and how these significant investments today can pay off in the future?

Answer. Since the 1950s when the United States made a significant investment in laying out a commitment to a Federal interstate highway system and in a massive increase in the infrastructure of select universities' science and research capacities, our investments have been concentrated on the maintenance of what was cutting-edge 20th-century infrastructure. We are now in the 21st century. That means we must have the backbone of 21st-century infrastructure.

Infrastructure is government investments that increase the efficiency of the marketplace by increasing the return on private investment. Government investment is complimentary to private investment. The government investment ensures that there is a universal "on ramp" for key investments the private sector can build on to get people and products to market. In the 21st century, the backbone is different than in the 20th century. Our challenges are different.

In the mid-20th century, we made a massive increase in human capital investments. In 1946, fully half of all our college students attended a small set of our finest institutions free, because of the huge investment in the human capital of the "greatest generation" made using the GI Bill. We followed by making it possible for students to attend college by creating a capital market for student loans, including forgiving the debt of those who pursued careers in public education in the sciences and foreign languages. This gave our business community a huge leg up. They could benefit from a significant pool of highly trained workers that let them develop and implement new technologies to scale. With a large pool of highly educated workers, the United States had a workforce that could invent, develop and manufacture the transistors, printed circuits, and solid-state electronics that fueled the computer age and America's advantage in those technologies.

Today, we must continue that commitment. But we must do more. That 20th-century investment was heavily slanted to developing a workforce of white males. We need to fully develop our entire workforce.

The United States ranks sixth of the seven largest economies in women's labor force participation. Our businesses need access to the talents of what has become half our workforce. That means in the 21st century we cannot ignore the need to

invest in the care economy that can make it possible for more people to be active in the paid labor force. On their own, businesses cannot make the investment to create childcare and elder care options available to scale. That "on ramp" to access the human resources of our Nation is as necessary as a deep-water port is to accommodating modern ocean freighters.

Further, our Nation's commitment to opportunity and equality that was the hallmark of the post-World War II economy, meant we could freely rely on the market to function for the details of human capital investment for the specifics. Labor unions could negotiate workplace specific skills training and reward systems. This makes passage of the Richard Trumka Protecting the Right to Organize Act imperative. Public investment at the State and local level made educational opportunity affordable to the emerging middle class created by a host of policies that included easy access to education and training. This was combined in the middle of the 20th century with our aggressive steps to dismantle the barriers that white supremacists constructed through then legal segregation that denied equal educational resources.

Our reversal to our commitment to equality has resulted in a much smaller purchasing power for the middle class and the shrinking of the middle class and our cutting investment in public higher education has revealed that in the 21st century we are on a path to scarce, not abundant, supplies of highly skilled workers. So, we must also expand the set of institutions where we invest. And correcting that by investing in the Historically Black Colleges and Universities that were passed over is part of that strategy. We also now know, the vital role of the care economy in providing the kick-start to elementary school education. So, we must invest in early childhood education to both level the playing field that will increase our supply of skilled workers, and to free women to enter the paid workforce.

Clearly, in the middle of the 20th century we realized that the 12th grade education that was needed to produce autoworkers, flight mechanics, x-ray technicians would not be adequate for an age of computers. That is more abundantly clear today. So, we must expand and renew our vision of the basic skills needed for a 21st-century workforce. That means expanding the affordability of higher education and increasing access points to help education and training beyond high school. This is merely a renewal of commitment made from 1940 to the 1970s to previous generations.

In the 20th century, an interstate highway system was needed to increase the efficiency of our transportation network. The "last mile" problem of getting goods to people and markets, required a highway system for trucks. But, in the 21st century the new highway is an information highway. Businesses need a fast thoroughfare to get high speed Internet information to and from consumers, and the potential to tap into workforces that can be spread across the country. So, we must commit to a massive increase in our investment in broadband Internet.

Finally, we clearly understand the result of building up carbon emissions threatens human life. The earth will continue, but humans will be like dinosaurs, unable to sustain the species with life as we know it on planet with higher temperatures, greatly reduced arable land for crops and livestock, and rising sea levels that will remove large, populated areas. Businesses will not be able to absorb the huge uncertainties of more frequent and powerful storms and flooding, and the ever-present threat of wildfires.

We must make investments that can let us transition to a new economy that is sustainable. This investment must be done in a coordinated way to allow for a just a transition. Only through government action can the change in the economy be engineered to accommodate the reallocation of resources from carbon dependent industries so workers and communities can get the investments they need to keep good jobs and economically viable communities. Those "wiser" investments include investment in public and mass transportation, that expands job opportunities, including rural communities. Failure to act will doom farmers, rural America, those living in coastal communities and those in the path of hurricanes, tornadoes and drought caused disasters to lose. Workers who make their living in food processing, farming, timber products and fishing will all lose jobs as the environment stresses the land and sea. People living in our coastal cities will lose their properties to rising seas. We must engineer a transition that can stall, and hopefully reverse global warming, to create clear paths for those who produce carbon to benefit most from new technologies and new energy sources. This can all be done with proper vision and proper investment choices.

Question. The coronavirus pandemic has illustrated critical faults in our economy. It has shown how an unexpected crisis or economic downturn can set workers back in ways that can be difficult to recover from. Your testimony focused on the gaps in U.S. policy that, if filled, could make our economy more resilient and supportive for American workers.

Please expand on the top three policy actions the Federal Government could take to ensure workers are better supported during the next crisis. How will those actions ensure a more resilient economy going forward?

Answer. The most glaring problem Congress confronted was our inadequate unemployment insurance system. Touted as being an "automatic stabilizer," clearly our unemployment system, when confronted with a large influx of unemployed workers, was wholly inadequate. It covered too few workers and had an income replacement rate that could hardly be called "insurance." Our States had failed to make the proper investments to create an information infrastructure adequate to the size of our workforce. The system currently contains incentives for States to retreat from making the system robust. Instead, the current system rewards States for making the system less "automatic" and encourages them instead to reduce those covered and to limit their "insurance." Several States ahead of this crisis had already limited their programs, and more have legislation pending to reduce coverage and benefits more.

Congress should be congratulated for its rapid response to this crisis and its transformation of the program. A very key element was increasing the replacement rate of benefits. For those workers who have low savings levels this was crucial. Workers with low cash savings, use less of their unemployment checks to keep up their buying power. Instead, they increase their savings to try and stretch the unemployment checks. The lack of savings is disproportionately a burden for Black and Latino households. This is a direct effect of Black and Latino workers lower earnings and higher probabilities of being unemployed during economic downturns; and the substantial racial wealth gap—true for Black and Latino households of all income levels. In this downturn, because the disproportionate share of the unemployed were Black or Latino, the added benefit was crucial to sustain the buying power in low-income neighborhoods and protect the cash flow of businesses in those communities. The result was that employment in businesses in low-income neighborhoods was protected better than in the past. When the economy takes a huge downturn, and the key function of the unemployment insurance is to be an automatic stabilizer of aggregate demand, it is important that the unemployment insurance system adopt to account for the liquidity problems of low-income and low-wealth households.

The unemployment system also fails to adequately cover part-time employees. The use of an earnings test, instead of an hours worked test, to determine who is eligible to receive benefits left too many workers outside the regular State unemployment insurance system benefits. This has clear racial and gender equity issues, that have been well documented, and were glaringly clear this downturn.

The second glaring inequality was the painfully slow recovery of Black employment. Though Black workers did not suffer the same proportionate loss of jobs as some other communities, they did suffer such a slow recovery, that they quickly became the set of workers left most vulnerable. For most of the recovery, the unemployment rate of high school dropouts has been lower than the Black unemployment rate (averaged for all education levels) and lower than the Black unemployment rate for Black workers with associates degrees. Despite claims that companies were desperately looking for workers, the Black unemployment rate climbed 2 months at the beginning of this summer. Our national enforcement of anti-discrimination in employment must take clear center. And it is vitally important to bolster anti-discrimination in hiring for infrastructure projects to ensure we do not repeat the way that highway construction in the 1950s exacerbated racial inequality.

Finally, a major problem encountered in helping Americans was the uneven level of access to banking that was revealed. This was true among small businesses trying to access the Payroll Protection Plan, and to families that needed to receive their various benefits through the IRS. It was also clear that the Federal commitment to a robust information infrastructure for the IRS was almost as woeful as the State level investment in the unemployment insurance system. A bigger investment is needed in the IRS's data infrastructure. We will continue to have needs to deliver timely aid to Americans as wildfires threaten America's great Pacific Northwest, and hurricanes ravage our Gulf Coast states. Improved access to banking, whether through Postal Savings Banks, improved Community Reinvestment Act en-

forcement or other means and a better infrastructure at the IRS would make implementing programs that could prevent fraud could be implemented quickly and efficiently. Unfortunately, as we see the painfully slow implementation of the renters' assistance program to prevent evictions, there are serious consequences to these gaps.

PREPARED STATEMENT OF HON. ELIZABETH WARREN,
A U.S. SENATOR FROM MASSACHUSETTS

Good afternoon. Welcome to the hearing before the Subcommittee on Fiscal Responsibility and Economic Growth. I am very pleased to be working with Ranking Member Cassidy on this hearing on "Defending and Investing in U.S. Competitiveness."

So how does America compete in a global economy? For too long, the answer has been some variation of "help giant corporations make the most money."

Big multinational corporations have no loyalty to our Nation. They say quite openly their loyalty is to their shareholders, and about 40 percent of the shareholders of publicly traded companies aren't Americans. These multinational corporations pursue profits—even if those profits come at a cost to American workers or to our environment.

It is not the job of the United States Government to work to boost profits of big multinationals that have no particular loyalty to the United States. Instead, the goal of economic competition should be to make our domestic economy strong and to raise the standard of living for the American people. That means investing in American jobs and American workers. And here's the best part: if we give American workers the tools they need, they can compete with anyone, including global economic rivals like China.

Economic competition is also political competition. Fair competition can produce and spread the best ideas. We have a chance to show China and the whole world that an American approach that invests in and empowers workers is the most effective way to compete.

There are two aspects of global competitiveness that I'd like to focus on in this hearing. The first is that, in order to compete in a global economy, American workers need to have a fair set of trade rules—which they do not have right now. Our existing trade rules have undercut our workers, promoted offshoring and a global race to the bottom in labor and environmental standards, and that is because, for decades, the U.S. Trade Representative has represented big multinational corporations while workers, environmentalists, and other parts of the diverse American economy were pushed to the side, with their interests and concerns given second-class status. That needs to stop. U.S. trade policy needs structural reforms to ensure that it reflects the interests of all Americans, not just a handful of corporations trying to maximize short-term profits.

The second reason why workers are struggling against international competition is that we have failed to make critical domestic investments in our workforce. We know that American workers—given the right tools—can out-compete China and every other country in the world.

China offers a clear counter-approach. It fundamentally devalues and disempowers its workers by barring them from organizing, by pressing ethnic minorities into forced labor camps, by making migrant workers second-class citizens, and by leaving working families to go it alone on child care. This has helped China cut production costs in the short term, but there are long-term costs. The Chinese Government recognizes that such an approach cannot build an innovative workforce, a strong middle class, or sustainable economic growth. Now China is desperately trying to invest in its human capital to fuel development, especially given its aging population, recognizing that these investments are crucial to China's future.

This is the moment for the United States to step up. We can and we must do better for our workers. It is the right thing to do, it is the competitive thing to do, and it is the only way to build a strong future for our Nation and our people.

Specifically, our investments in green technology should center on good jobs and building a top-quality workforce. My Build Green and Buy Green bills would do exactly that. These bills and other clean energy investments with strong labor provisions should be included in the infrastructure package that Congress is working on

now. Doing so is good for the environment, good for the economy, good for workers and their families.

Similarly, we need to give American workers the security they need to be able to do their jobs and care for their families. Universal, high-quality, affordable child care and early education is an investment in our current and our future workforce—working parents and their children—and a far better way to compete with China than endless expansion of our spending on the U.S. military. We need $700 billion for child care in the infrastructure bill. It is a critical way to improve our global economic competitiveness.

Finally, I was glad to see President Biden's executive order last week which takes critical steps to promote competition, strengthen antitrust enforcement, and tackle consolidation and anticompetitive practices. Reigniting competition will make markets work better for American families and workers, at the same time that it bolsters U.S. competitiveness.

I am looking forward to discussing these issues today and working with my colleagues and the administration to make sure that America's workers can compete in a global economy.

Communications

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Statement of Michael G. Bindner

Chairman Warren and Ranking Member Cassidy, thank you for the opportunity to submit these comments for the record to the Committee on this topic.

For many years, trade policy has focused mostly on cheap prices over plentiful jobs. Selling products gathers income while making them incurs cost. Advocating for or against tariffs provides campaign chairs a valuable resource to cultivate donors and hold them hostage in the face of changes.

The status quo will continue until the Dollars and Treasury Notes lose their status as world money and the premium investment for bond holders. Unless action is taken to raise taxes on those who we would otherwise borrow from, they will continue to privately be fine with increasing debt. The actual obligation to repay the debt is a function of income tax paid (FICA creates assets, not debt). Please see the first attachment for more information on who owes and owns the debt and why it qualifies as class warfare.

Replacing tariffs with border-adjustable value-added taxes is also donor bait. Unless VAT enactment is broad-based as part of a tax reform that leaves most families off of the tax rolls, industries will pour money into campaign coffers to try to get exemptions for their products. Please see the second attachment for more about how trade policy and tax reform interact.

VAT enactment's advantage is that incurring such taxes without inviting retaliation. Raising tariffs invites trade wars, as our recent experience proves. The biggest improvement in our trade policy is the recent change in Administrations. Our current President will not pursue gunboat trade policy and will make infrastructure happen without having an elusive infrastructure week.

Trade is an area where climate change must be addressed. Global warming requires a global solution. On warming in general, there is no doubt that it is man-made. While there was a warm period around the first millennium, we came to it gradually.

Industrialization may have ended what is called the Little Ice Age, but that warming is sudden and has dire consequences. We do not know that it will stop the way it did in the Middle Ages, indeed, it is not likely to, which makes these hearings vital. Starting with the coasts, there will be sea level rise. The flooding shown in Vice President Gore's latest film shows how bad it is getting.

The wealthy don't seem to care about sea level rise, because they have flood insurance. The most basic step to at least get wealthier taxpayers on board (including the upper-middle class) is to cap flood insurance benefits to a level where beach houses properties can no longer be insured. Even that small step could never be enacted. Too many donors have beach houses.

Our economic system is the problem. Until we move to something more cooperative, the well-off will turn their economic power into political power.

Without a technical solution (like fusion, which Koch et al. are slow-rolling) all the incentives in the world will not stop plutocrats from scuttling every attempt at regulating emissions. Historically, unless people start dying from the air, as they are in

China and did in Pennsylvania from the smog, nothing gets done. The river had to be actually burning in Cleveland before anything was done.

Expanding freight rail should be a big part of that story. It saves energy and emits less carbon. While this will impact long-haul trucking, a growing economy, fueled by families with more money, will more than make up the difference in short-haul delivery.

Many ports will need to change configurations to expand freight rail and reduce reliance on long-haul trucking. This is a luxury problem. Such problems are a perfect object for expanded federal assistance to our railroad infrastructure. Either loans or grants should fit the bill. Higher motor vehicle fuel taxes can help transport goods as well as people.

A carbon value-added tax (rather than a simple carbon tax embedded in the price) will better allow consumer choice for both consumers and distributors. Polluters will only accept carbon taxes as an alternative to direct regulation. If we dropped fuel efficiency standards and imposed carbon taxes instead, I suspect that car makers and the energy industry would jump on board.

Some level of regulation, like some level of social welfare, helps save business owners from themselves. One need only remember the smog that blanketed Beijing during their Olympics to see what happens from minimal regulation. China is now going all in on renewable energy. Will we learn the same lesson?

We have the capacity to do both. Regulations need to be ramped up AND Carbon Value-Added Taxes need to be enacted to fund infrastructure and research into technical solutions like Helium-3 fusion and electric cars which receive computer control and power from a covered roof deck—preferably one topped with grass.

I use the term carbon value-added tax (CVAT) because energy prices are tax inelastic. When energy is needed, it is purchased, especially for transportation. Unless gasoline taxes approach $4 per gallon, people simply fill up their SUV's and cope with the price changes. There is plenty of space to increase gas taxes before consumers change their behavior.

Because energy expenses are inelastic, price information needs invoicing to help make intelligent choices and to educate the public on the necessity for these taxes. Nothing wakes people up like seeing something on an invoice.

The Fair Tax, the Green New Deal, Carbon Taxes, and Goods and Services (Credit Invoice) Taxes all assume some sort of subsidy to hold poor families harmless—some kind of rebate or prebate. Many even believe that levying such taxes could be a good way to increase household income to for poorer families, which would also produce economic growth. I agree that subsidizing families will increase growth, however I submit that the best way to do so is through either existing subsidies or wages.

Recent changes to the Child Tax Credit are the best trade infrastructure we can hope for, although a higher minimum wage is even more desirable. People need more money to buy imported goods and to go back into the labor force. There are many discouraged workers, some of which turn to less than legal means to earn an income. It is time to allow them back into the light. Work does not meet the needs of many workers. Now is the time to change this.

Increasing the Child Tax Credit, making it permanently refundable and establishing a carbon VAT should all be elements of comprehensive tax reform. The nation has already taken steps on the journey to reform in passing the *American Rescue Plan Act.* Reform should be bipartisan so that it has staying power. One possible point of compromise is to end the requirement for all but the wealthiest to file income tax.

Our tax reform plan is designed to provide adequate income and services to families (both with increased minimum wages and child tax credits) through employer-paid taxes, funding government services through a goods and services tax, separating out taxation of capital gains and income from income to an asset value added tax and higher tier subtraction VAT collections on wage income up to the $340,000 level and above, with additional personal income taxation for incomes over $425,000. Please see our third attachment for details.

Thank you for the opportunity to address the committee. We are, of course, available for direct testimony or to answer questions by members and staff.

Attachment One—Debt as Class Warfare, September 24, 2020

Visibility into how the national debt, held by both the public and the government at the household level, sheds light on why Social Security, rather than payments for interest on the public debt, are a concern of so many sponsored advocacy institutions across the political spectrum.

Direct household attribution exists through direct bond holdings, income provided by Social Security payments and secondary financial instruments backed with debt assets. Using the Federal Reserve Consumer Finance Survey and federal worker and Social Security payment and tax information, we have calculated who owes and who owns the national debt by income quintile. Federal Reserve and Bank holdings are attributed based on household checking and savings account sizes.

Responsibility to repay the debt is attributed based on personal income tax collection. Payroll taxes create an asset for the payer, so they are not included in the calculation of who owes the debt. Calculations based on debt held when our study on the debt was published, distributed based on the latest data (2017) from the IRS Data Book show a ratio of $16.5 of debt for every dollar of income tax paid.

This table shows a summary level distribution of income, national debt and debt assets in three groupings based on share of Adjusted Gross Income received, rather than by number of households. This answers the perennial question of who is in the middle class.

Descending Cumulative Percentiles	Millions of Returns Filed	Millions of Returns Paying Tax	Amounts (Billions)							
			AGI	Income Tax Paid	Gross Debt (Factor) 16.55	Held by Federal Reserve and Banks	Held in Bonds	Held in Personal Accounts	Held in Government Debt	Assets Net of Debt Liability
All returns total	**143.3**	**99.4**	**10,937**	**1,601**	**26,500**	**5,238**	**4,222**	**3,854**	**5,384**	**(7,802)**
Top 5% IRS, 8.5% CPS, $208,053	7.2	7.2	3,995	947	15,671	2,926	3,693	2,411	294	**(6,347)**
5%–25% IRS, 8.5%–37.2% CPS, $83,682	28.7	28.3	3,566	432	7,146	1,399	529	1,046	1,238	**(2,934)**
Bottom 75% IRS, 62.8% CPS, $0	107.5	63.9	3,375	223	3,683	913	–	397	3,852	**1,479**

The bottom 75% of taxpaying units hold few, if any, public debt assets in the form of Treasury Bonds or Securities or in accounts holding such assets. Their main national debt assets are held on their behalf by the Government. They are owed more debt than they owe through taxes.

The next highest 20% (the middle class), hold few bonds, a third of bond-backed financial assets and a quarter of government held retirement assets.

The top 5% (roughly 8.5% of households) own the vast majority of non-government retirement holdings and collect (and roll-over) most net interest payments. This stratum owns very little of retirement assets held by the government, hence their interest in controlling these costs. Their excess liability over assets is mostly attributable to internationally held debt. Roughly $4 Trillion of this debt is held by institutions, with the rest held by individual bond holds, including debt held by members of this stratum in off-shore accounts.

Source: Settling (and Squaring) Accounts: Who Really Owes the National Debt? Who Owns It?, available from Amazon at *https://www.amazon.com/dp/B08FRQFF8S*.

Attachment Two—Trade Policy

Consumption taxes could have a big impact on workers, industry and consumers. Enacting an I–VAT is far superior to a tariff. The more government costs are loaded onto an I–VAT the better.

If the employer portion of Old-Age and Survivors Insurance, as well as all of disability and hospital insurance are decoupled from income and credited equally and personal retirement accounts are not used, there is no reason not to load them onto an I–VAT. This tax is zero rated at export and fully burdens imports.

Seen another way, to not put as much taxation into VAT as possible is to enact an unconstitutional export tax. Adopting an I–VAT is superior to it's weak sister, the Destination Based Cash Flow Tax that was contemplated for inclusion in the TCJA. It would have run afoul of WTO rules on taxing corporate income. I–VAT, which taxes both labor and profit, does not.

The second tax applicable to trade is a Subtraction VAT or S–VAT. This tax is designed to benefit the families of workers through direct subsidies, such as an enlarged child tax credit, or indirect subsidies used by employers to provide health insurance or tuition reimbursement, even including direct medical care and elementary school tuition. As such, S–VAT cannot be border adjustable. Doing so would take away needed family benefits. As such, it is really part of compensation. While we could run all compensation through the public sector.

The S–VAT could have a huge impact on long term trade policy, probably much more than trade treaties, if one of the deductions from the tax is purchase of employer voting stock (in equal dollar amounts for each worker). Over a fairly short period of time, much of American industry, if not employee-owned outright (and there are other policies to accelerate this, like ESOP conversion) will give workers enough of a share to greatly impact wages, management hiring and compensation and dealing with overseas subsidiaries and the supply chain—as well as impacting certain legal provisions that limit the fiduciary impact of management decision to improving short-term profitability (at least that is the excuse managers give for not privileging job retention).

Employee owners will find it in their own interest to give their overseas subsidiaries and their supply chain's employees the same deal that they get as far as employee ownership plus an equivalent standard of living. The same pay is not necessary, currency markets will adjust once worker standards of living rise. Attachment Three further discusses employee ownership.

Over time, ownership will change the economies of the nations we trade with, as working in employee-owned companies will become the market preference and force other firms to adopt similar policies (in much the same way that, even without a tax benefit for purchasing stock, employee-owned companies that become more democratic or even more socialistic, will force all other employers to adopt similar measures to compete for the best workers and professionals).

In the long run, trade will no longer be an issue. Internal company dynamics will replace the need for trade agreements as capitalists lose the ability to pit the interest of one nation's workers against the others. This approach is also the most effective way to deal with the advance of robotics. If the workers own the robots, wages are swapped for profits with the profits going where they will enhance consumption without such devices as a guaranteed income.

Attachment Three—Tax Reform, Center for Fiscal Equity, March 5, 2021

Individual payroll taxes. These are optional taxes for Old-Age and Survivors Insurance after age 60 for widows or 62 for retirees. We say optional because the collection of these taxes occurs if an income sensitive retirement income is deemed necessary for program acceptance. Higher incomes for most seniors would result if an employer contribution funded by the Subtraction VAT described below were credited on an equal dollar basis to all workers. If employee taxes are retained, the ceiling should be lowered to $85,000 to reduce benefits paid to wealthier individuals and a $16,000 floor should be established so that Earned Income Tax Credits are no longer needed. Subsidies for single workers should be abandoned in favor of radically higher minimum wages.

Wage Surtaxes. Individual income taxes on salaries, which exclude business taxes, above an individual standard deduction of $85,000 per year, will range from 6.5% to 26%. This tax will fund net interest on the debt (which will no longer be rolled over into new borrowing), redemption of the Social Security Trust Fund, strategic, sea and non-continental U.S. military deployments, veterans' health benefits as the result of battlefield injuries, including mental health and addiction and eventual debt reduction. Transferring OASDI employer funding from existing payroll taxes would increase the rate but would allow it to decline over time. So would peace.

Asset Value-Added Tax (A–VAT). A replacement for capital gains taxes, dividend taxes, and the estate tax. It will apply to asset sales, dividend distributions, exercised options, rental income, inherited and gifted assets and the profits from short sales. Tax payments for option exercises and inherited assets will be reset, with prior tax payments for that asset eliminated so that the seller gets no benefit from them. In this perspective, it is the owner's increase in value that is taxed. As with any sale of liquid or real assets, sales to a qualified broad-based Employee Stock Ownership Plan will be tax free. These taxes will fund the same spending items as income or S–VAT surtaxes.

This tax will end Tax Gap issues owed by high income individuals. A 26% rate is between the GOP 24% rate (including ACA–SM and Pease surtaxes) and the Democratic 28% rate. It's time to quit playing football with tax rates to attract side bets. A single rate also stops gaming forms of ownership. Lower rates are not as regressive as they seem. Only the wealthy have capital gains in any significant amount. The de facto rate for everyone else is zero.

The mutual fund exemption will be repealed. It is the biggest tax shelter is the use of money market funds to accumulate capital gains and income without taxation. This practice must end if salary surtaxes no longer include non-salaried income. 75% of such funds are held by the top 10% of households as measured by the 2019 Survey of Consumer Finance by the Federal Reserve. I suspect the other 20% are held by high income retirees. The working class will not be harmed. Applying the Pareto Rule to higher income households leaves the top 1450 households with 30% of wealth. The proof of this proposition is the shareholders list of Berkshire Hathaway.

Subtraction Value-Added Tax (S–VAT). These are employer paid Net Business Receipts Taxes. S–VAT is a vehicle for tax benefits, including

- Health insurance or direct care, including veterans' health care for non-battlefield injuries and long-term care.
- Employer paid educational costs in lieu of taxes are provided as either employee-directed contributions to the public or private unionized school of their choice or direct tuition payments for employee children or for workers (including ESL and remedial skills). Wages will be paid to students to meet opportunity costs.
- Most importantly, a refundable child tax credit at median income levels (with inflation adjustments) distributed with pay.

Subsistence level benefits force the poor into servile labor. Wages and benefits must be high enough to provide justice and human dignity. This allows the ending of state administered subsidy programs and discourages abortions, and as such enactment must be scored as a must pass in voting rankings by pro-life organizations (and feminist organizations as well). To assure child subsidies are distributed, S–VAT will not be border adjustable.

The S–VAT is also used for personal accounts in Social Security, provided that these accounts are insured through an insurance fund for all such accounts, that accounts go toward employee-ownership rather than for a subsidy for the investment indus-

try. Both employers and employees must consent to a shift to these accounts, which will occur if corporate democracy in existing ESOPs is given a thorough test. So far it has not. S–VAT funded retirement accounts will be equal-dollar credited for every worker. They also have the advantage of drawing on both payroll and profit, making it less regressive.

A multi-tier S–VAT could replace income surtaxes in the same range. Some will use corporations to avoid these taxes, but that corporation would then pay all invoice and subtraction VAT payments (which would distribute tax benefits. Distributions from such corporations will be considered salary, not dividends.

Invoice Value-Added Tax (I–VAT). Border adjustable taxes will appear on purchase invoices. The rate varies according to what is being financed. If Medicare for All does not contain offsets for employers who fund their own medical personnel or for personal retirement accounts, both of which would otherwise be funded by an S–VAT, then they would be funded by the I–VAT to take advantage of border adjustability. I–VAT also forces everyone, from the working poor to the beneficiaries of inherited wealth, to pay taxes and share in the cost of government. Enactment of both the A–VAT and I–VAT ends the need for capital gains and inheritance taxes (apart from any initial payout). This tax would take care of the low-income Tax Gap.

I–VAT will fund domestic discretionary spending, equal dollar employer OASI contributions, and non-nuclear, non-deployed military spending, possibly on a regional basis. Regional I–VAT would both require a constitutional amendment to change the requirement that all excises be national and to discourage unnecessary spending, especially when allocated for electoral reasons rather than program needs. The latter could also be funded by the asset VAT (decreasing the rate by from 19.5% to 13%).

As part of enactment, gross wages will be reduced to take into account the shift to S–VAT and I–VAT, however net income will be increased by the same percentage as the I–VAT. Adoption of S–VAT and I–VAT will replace pass-through and proprietary business and corporate income taxes.

Carbon Value-Added Tax (C–VAT). A Carbon tax with receipt visibility, which allows comparison shopping based on carbon content, even if it means a more expensive item with lower carbon is purchased. C–VAT would also replace fuel taxes. It will fund transportation costs, including mass transit, and research into alternative fuels (including fusion). This tax would not be border adjustable.

Summary

This plan can be summarized as a list of specific actions:

1. Increase the standard deduction to workers making salaried income of $425,001 and over, shifting business filing to a separate tax on employers and eliminating all credits and deductions—starting at 6.5%, going up to 26%, in $85,000 brackets.
2. Shift special rate taxes on capital income and gains from the income tax to an asset VAT. Expand the exclusion for sales to an ESOP to cooperatives and include sales of common and preferred stock. Mark option exercise and the first sale after inheritance, gift or donation to market.
3. End personal filing for incomes under $425,000.
4. Employers distribute the child tax credit with wages as an offset to their quarterly tax filing (ending annual filings).
5. Employers collect and pay lower tier income taxes, starting at $85,000 at 6.5%, with an increase to 13% for all salary payments over $170,000 going up 6.5% for every $85,000—up to $340,000.
6. Shift payment of HI, DI, SM (ACA) payroll taxes employee taxes to employers, remove caps on employer payroll taxes and credit them to workers on an equal dollar basis.
7. Employer paid taxes could as easily be called a subtraction VAT, abolishing corporate income taxes. These should not be zero rated at the border.
8. Expand current state/federal intergovernmental subtraction VAT to a full GST with limited exclusions (food would be taxed) and add a federal portion, which would also be collected by the states. Make these taxes zero rated at the border. Rate should be 19.5% and replace employer OASI contributions. Credit workers on an equal dollar basis.
9. Change employee OASI of 6.5% from $18,000 to $85,000 income.

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We appreciate the opportunity to provide comments on the hearing before the Senate Finance Committee, "Defending and Investing in U.S. Competitiveness," particularly as these goals implicate tax and economic policies that stand to impact the U.S. business community domestically and abroad. We offer our commentary in the hope that it will assist the Committee in its ongoing efforts to draft tax revisions, provide additional context as to how certain proposals will impact Fortive Corporation ("Fortive," "We"), and highlight the impacts of the proposals on the Committee's goal of promoting U.S. competitiveness.

Furthermore, we refer to the proposals issued thus far in the White House's American Jobs Plan (released March 31, 2021) and the Treasury Department's General Explanation of the Administration's Fiscal Year 2022 Revenue Proposals, commonly referred to as the Green Book (released May 28, 2021), collectively throughout the following as the "Administration's Proposals."

Fortive is a provider of essential technology for business customers that helps them accelerate progress in their critical workflows across diverse set of global industries. Headquartered in Everett, Washington, Fortive earns approximately $5 billion in annual revenue and proudly employs over 11,000 highly skilled individuals in all U.S. states and the District of Columbia.

Fortive businesses are leaders across their respective industries, driving breakthrough innovation in three segments: Intelligent Operating Solutions, Advanced Healthcare Solutions, and Precision Technologies. Fortive's Intelligent Operating Solutions segment provides software and advanced instrumentation solutions to ensure safety and compliance, improve energy efficiency, and optimize performance. Our Advanced Healthcare Solutions segment provides advanced technologies to help healthcare providers ensure critical safety standards are met, medical instruments are operating at peak performance, and complex procedures are followed accurately in a dynamic environment. The Precision Technologies segment provides precise and reliable solutions to technical challenges in food and beverage production, semiconductor and electronics manufacturing, next-generation communications, and clean energy.

Recognizing how critical robust infrastructure is to the U.S. economy, we support the current legislative efforts to invest in necessary improvements. We appreciate such investments will provide opportunities for U.S. businesses, like Fortive, that provide essential technologies utilized in infrastructure projects. We recognize that to invest in infrastructure, revisions to tax and economic policy must be considered. With that in mind, we firmly believe that the Congress and its Committees should maintain focus on broad goals that will benefit the community of highly innovative, U.S.-headquartered companies with an approach of "Keep, Create, and Capture". Such an approach to potential U.S. tax revisions will ensure the U.S. will continue to support domestic economic prosperity by enhancing business growth, creating jobs, stimulating innovation, and expanding the United States tax base, to the benefit of the country and its citizens.

To that end, Fortive proposes to the Committee the following principles, which we believe will help achieve the purported goals identified by this hearing of investing in and defending U.S. competitiveness:

(i) Ensure the U.S. keeps or retains valuable assets and activities, including U.S.-based intellectual property (IP), critical manufacturing, high-value-added services, research and development (R&D), and supply chain.

(ii) Incentivize the creation and growth of valuable, domestic IP and associated high-value jobs and services.

(iii) Foster an environment that supports the ability of U.S. businesses to capture high value assets and activities that are currently outside of the U.S. in a cost-effective manner.

With that approach in mind, we provide the following comments and suggestions in connection with certain aspects within the proposed themes for tax revision released thus far.

I. Foreign-Derived Intangible Income (FDII) and Other R&D Incentives

Our experience as a taxpayer is that the FDII deduction has provided a compelling incentive for keeping and expanding within the United States valuable, taxable economic activities that otherwise might not have remained in the United States. To that end, the FDII regime has proven to be an effective tool for keeping economic activities in the United States, including R&D conducted by highly skilled U.S. employees, which has been one of the long-standing, bipartisan goals of Congress.

The Administration's Proposals have questioned the effectiveness and incentives created by FDII, focusing on certain fact patterns that have been perceived as creating undesired results. The Administration's Proposals would repeal FDII and replace it with a much narrower incentive for R&D; leaving behind current incentives to other types of activities and functions that can be equally valuable to R&D (*e.g.,* highly skilled services provided to support global operations).

We agree that R&D incentives, such as an enhanced credit, will be effective in creating new value-driving assets. FDII and R&D incentives should complement each other to keep and create value, while protecting the United States tax base.

Fortive's position: Retain FDII and the valuable incentives that keep investment in highly valuable functions and assets in the United States. Where necessary, Congress should consider implementing targeted, limited revisions to the FDII regime addressing fact patterns perceived as undesired. Additional R&D incentives must be considered by Congress to further create taxable valuable activities in the United States.

II. On-Shoring of IP and Other Value-Driving Assets

In addition to maintaining the FDII regime, Fortive also identifies the need to address both policy that imparts penalizing action for positive behavior and other effective incentives that could assist in greater capture of value-driving assets and subsequent taxable income in the United States.

Specifically, certain elements of existing tax law penalize U.S.-headquartered multinationals like Fortive for taking proactive steps to onshore to the United States high-value assets and functions. For example, a foreign income "exit" tax related to tested income-generating activities (*i.e.,* subject to the GILTI) may not be fully creditable in the United States, thereby resulting in double-taxation and creating barriers to the inbounding of high-value assets and functions to the United States.

Fortive's position: With the purpose of capturing an increased tax base, Congress should consider creating measures to facilitate efficient distributions of IP and other high-value assets and functions into the United States; for example, allowing for such distributions to be a return of basis and utilizing an available tax attribute. Further, Congress should consider including such transactions in the general basket, when they would otherwise be captured in the GILTI basket. This proposal would address the current unintended penalty a U.S. company faces when they do not receive full foreign tax credit, thus facing double-taxation, when on-shoring valuable assets.

III. Global Intangible Low-Taxed Income (GILTI)

The GILTI was enacted in 2017 as part of the TCJA, enhancing the United States' anti-deferral regime and capturing the great majority of foreign earnings of certain foreign corporation of U.S.-headquarter multinationals.

The GILTI is currently determined on an annual basis, without any opportunity for adjustments based on timing differences and without any opportunity for the carryforward of foreign taxes to prevent double-taxation. Considering the wide base of the GILTI, certain changes in the Administration's Proposals can exacerbate the competitive disadvantages faced by domestic companies relative to their foreign competitors.

Under the Proposal, GILTI would be calculated on a jurisdiction-by-jurisdiction basis. For Fortive (and other U.S.-headquartered multinationals), this would result in added complexity and increased compliance cost. Further, the year-by-year calculation requirement of the GILTI and disallowance of adjustments for timing differences (related to earnings (losses) and foreign taxes) are expected to result in double taxation and an increased tax cost to U.S.-headquartered corporations in doing businesses in most foreign countries, reducing competitiveness of U.S.-headquartered corporations.

Fortive's Position: The country-by-country determination of the GILTI must be reconsidered and properly weighted against its costs to taxpayers and expected adverse impact on the competitiveness of U.S.-headquartered corporations relative to their non-U.S. peer companies. In addition, Congress should consider allowing for adjustments related to timing differences within the GILTI regime.

IV. SHIELD

The Administration's Proposals would repeal the TCJA's Base Erosion Anti-Abuse Tax (BEAT) and replace it with a regime named "stopping harmful inversions and ending low-tax developments" (SHIELD). The SHIELD would apply to financial reporting groups with greater than $500 million in global annual revenues. The SHIELD would disallow deductions by reference to all payments made or deemed made to "low-taxed members" of the taxpayer's financial reporting group. Notably, the SHIELD does not carve out cost of goods sold (COGS), effectively treating it as a deduction rather than a reduction to gross revenue. If captured by the SHIELD, the COGS disallowance can result in double taxation by effectively recasting U.S.-headquartered companies as inverted companies.

Fortive's position: Congress should minimize the potential for double taxation when considering the SHIELD. COGS should be treated as a reduction to gross revenue and not as a deduction that may be subject to disallowance. In addition, deductible payments that are included in income under the subpart F or GILTI regimes should be carved out from the SHIELD regime.

V. Interest Deduction Limitations

Existing tax law, found under § 163(j), includes provisions that limit the deductibility of interest expense over certain thresholds. Companies, like Fortive, face strategic cash-management decisions when making significant investments, such as building new manufacturing sites, investing in large-scale R&D, or making business acquisitions. Given the anticipated increase in the baseline U.S. federal income tax rate, taxpayers will face a direct impact to their cash position that will complicate and potentially deter such investment decisions.

Fortive's position: Congress should consider offering relief on interest deduction limitations to provide taxpayers with treasury management flexibility to make U.S. investments in light of the cash impact of an incremental federal tax rate.

VI. Conclusion

In sum, our aforementioned suggestions are rooted on the principles to keep, create and capture IP and other high-value assets and functions in the United States. These suggestions are respectfully intended to assist the Committee and Congress in achieving their objective to strengthen the global competitiveness of U.S.-headquartered companies like Fortive who continue to invest in innovation, high-skilled jobs, and services within the United States. We believe this principled approach will facilitate economic growth, whilst increasing the U.S. tax base and collections for Treasury. We sincerely thank the Senate Finance Committee for taking the time to consider our principled approach to tax policy of keep, create, and capture.

If you have any questions regarding our comments or need more information, please contact Jenn Bowers, VP Tax at jenn.bowers@fortive.com or 425–446–5000.

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