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MADE IN AMERICA: EFFECT OF THE U.S. TAX CODE ON DOMESTIC MANUFACTURING

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MADE IN AMERICA: EFFECT OF THE U.S. TAX CODE ON DOMESTIC MANUFACTURING

TUESDAY, MARCH 16, 2021

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, DC.

The hearing was convened, pursuant to notice, at 10:06 a.m., via Webex, in the Dirksen Senate Office Building, Hon. Ron Wyden (chairman of the committee) presiding.

Present: Senators Stabenow, Cantwell, Menendez, Carper, Cardin, Brown, Bennet, Casey, Warner, Whitehouse, Hassan, Cortez Masto, Crapo, Grassley, Cornyn, Thune, Portman, Cassidy, Lankford, Daines, Young, and Sasse.

Also present: Democratic staff: Robert Andres, Professional Staff Member; and Joshua Sheinkman, Staff Director. Republican staff: Gregg Richard, Staff Director; and Andre Barnett, Senior Tax Counsel.

OPENING STATEMENT OF HON. RON WYDEN, A U.S. SENATOR FROM OREGON, CHAIRMAN, COMMITTEE ON FINANCE

The CHAIRMAN. Well, thank you all. And this is the first of three hearings this week in the Senate Finance Committee, and we are now going to—I will have an opening statement, and then Senator Crapo will have an opening statement, and then, as part of the introduction of our five witnesses, we would like to turn to our colleague Senator Brown to introduce his friend and Ohioan, Mr. Blatt.

The Finance Committee has worked hard over the last year to tackle the public health and jobs crises brought on by COVID–19. Today, the committee meets to discuss another challenge the pandemic exposed: the fragility of our supply chains, and the need to boost manufacturing in America.

Now when COVID–19 exploded, factories around the globe shut down, and supply chains were cut. Most Americans would recognize the effect of the supply chain crisis as something that I call "a toilet paper problem." It seemed like the supply ran out in the blink of an eye, and overnight nobody could get their hands on a package of toilet paper. Some sellers raised prices. Others restricted the marketplace to compensate for the shortages, but the shelves still emptied and Americans were facing a panic.

Now, household paper products are one thing, but the reality is, huge and vitally important parts of the economy are suffering from their own version of a toilet paper problem. For example, over the last year there have been concerns about the supply of batteries

and medicines and minerals that are used in electronics. There are still shortages of protective equipment that doctors and nurses need.

Domestic producers, including one in Oregon, have been making high-quality respirators and other PPE, but it is still a market dominated by producers in China.

The supply chain crisis set off the most alarm bells particularly as it related to semiconductors. They are obviously an important component of cars, medical devices, appliances, phones and computers, defense technologies, you name it. Americans do not roll out of bed in the morning without flipping some switch or checking some device that relies on semiconductors.

Disruptions at a single Taiwanese producer of semiconductors has caused major headaches for manufacturers across the country, as well as our consumers. Factories here in the United States have gone quiet as a result of the shortage. The shock waves of this blow to the modern global economy continue to ripple out.

It is a recipe for trouble when one single pandemic, natural disaster, or terrorist attack can sever brittle supply chains, hobble the economy, threaten our jobs, as well as put at risk our national security.

So I will close by saying, we do have bipartisan interest now in addressing this issue: building up our domestic manufacturing to bolster the supply of semiconductors and other critical components and products. The President ordered a comprehensive review of supply chains in several different areas of our economy and national defense. The Biden administration has made it clear that nothing is off the table when it comes to strengthening our supply chains and our economy.

In addition to America's national and economic security, fundamentally—and we will come back to this again and again—this is about high-skill and high-wage jobs for American workers. A lot of communities across the country endured a steady decline in manufacturing decades ago. Our manufacturing economy never fully recovered from the Great Recession before the pandemic hit.

So we have a big opportunity to turn this around. This is an area where my home State of Oregon is a national leader. Intel is one of our biggest employers. Our State is known for innovation that comes out of the Silicon Forest. Oregonians know that investments in R&D and advanced manufacturing bring those high-skill, high-wage jobs that are going to be the lodestar for this committee. Those are exactly the kind of jobs we want more of.

The committee has a host of economic tools in the kit that can help shore up domestic manufacturing. For example, Senator Stabenow and Senator Daines are working with Senator Manchin on the advanced manufacturing credit. Senators Warner and Cornyn and others are working on the issue of chips. In my view, it is going to be critically important to look at the changes to the 2017 Trump tax law, which in fact created a disincentive for research and development. Fixing that issue and creating strong and reliable incentives is going to be key. Because the United States must out-compete China and other countries, and you cannot do it with short-term legislation and uncertainty.

So I look forward to working with all the members on the committee, on both sides of the aisle, because this is a premiere economic challenge and, as stated, a job-creation opportunity.

I am happy we are joined by a panel of witnesses who can examine the issue from just about every angle. We are now going to turn to Senator Crapo, and then we will have Senator Brown introduce Mr. Blatt.

Our friend and our neighbor, Senator Crapo.

[The prepared statement of Chairman Wyden appears in the appendix.]

OPENING STATEMENT OF HON. MIKE CRAPO, A U.S. SENATOR FROM IDAHO

Senator CRAPO. Thank you, Chairman Wyden. And thank you to all of our witnesses for being here with us today. And, Mr. Chairman, thank you and your staff for collaborating with us on this bipartisan hearing. There are many areas within the Finance Committee's jurisdiction that are ripe for bipartisan support in this Congress, and I look forward to working with you on those through regular order.

Today's hearing will focus on the role of tax incentives for domestic manufacturing. The manufacturing sector is critical to the U.S. economy. In 2019, the manufacturing sector accounted for 11 percent of our GDP.

The United States has experienced a net loss of manufacturing plants in every year from 1998 through 2018. The decline in domestic manufacturing jobs may be attributable to a number of factors, including increased automation and productivity, labor costs, and taxes. Taxes can play a significant role in a company's site selection process.

Prior to the Tax Cuts and Jobs Act of 2017, the United States had one of the highest corporate income tax rates among developed countries. Also, before TCJA, the U.S. confronted pressures for domestic firms to invert or be acquired by foreign companies, leading to U.S. headquarters and jobs going abroad.

Today, as a result of the TCJA, the United States now has a flat 21-percent corporate income tax rate. Pressures for inversions and acquisitions have abated. Yet, despite the decreased rate, the U.S. still holds the 11th highest corporate tax rate among developed countries. The statutory corporate income tax rate is critical to the U.S.'s competitiveness in the global markets.

Another key aspect to our competitiveness is capital investment. The Internal Revenue Code has a number of tax incentives for capital investment which, when paired with a competitive corporate tax rate, are essential to promote domestic manufacturing.

This is an area of bipartisan interest, and I welcome the opportunity to work with Chairman Wyden on this. For example, last year Senators Cornyn and Warner introduced S. 3933, the Creating Helpful Incentives to Produce Semiconductors for America Act, known as the CHIPS Act, which would create a 40-percent refundable investment tax credit for qualified semiconductor equipment or any qualified semiconductor manufacturing facility investment expenditures. This bill had seven Republicans and five Democrats as co-sponsors.

Another example: just this month, Senators Manchin, Stabenow, and Daines introduced S. 622, the Creating Helpful Incentives to Produce Semiconductors for America Act, which offers an $8-billion increase to the section 48C Advanced Manufacturing Tax Credit available to manufacturers and other industrial users to retool, expand, or build new facilities that make or recycle energy-related products.

Micron, Intel, and other American semiconductor manufacturers are operating in an increasingly competitive and sometimes unscrupulous market. Only a couple of years ago, Chinese state-owned companies stole trade secrets from Micron in an effort to gain an advantage against leading producers of a sought-after technology.

Helping U.S. companies strengthen their supply chains to better protect these critical technologies is vital to safeguarding our national security and the health of our economy.

Chairman Wyden, we have a great panel here, representing a comprehensive range of perspectives from the business community, academia, as well as labor. I look forward to hearing their thoughts as we consider various tax proposals that can help to address the global semiconductor shortage, supply chain issues, and encourage domestic manufacturing activity.

Thank you, Mr. Chairman.

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

The CHAIRMAN. Thank you, Senator Crapo. This is obviously a premiere issue for bringing both sides together: creating more American jobs and manufacturing. We thank you for it.

Senator Brown is juggling a tight schedule, and what we are going to do is have him give an introduction for his constituent, and then we will start our witnesses with George Davis.

Senator Brown?

OPENING STATEMENT OF HON. SHERROD BROWN, A U.S. SENATOR FROM OHIO

Senator BROWN. Thank you, Mr. Chairman, and also Senator Crapo. Thanks for getting to continue with you, not just on the Banking and Housing Committee, but also in Finance. I am thrilled you are doing this hearing. It is really important.

It is a privilege to introduce my long-time friend, Donnie Blatt, who is director of United Steelworkers District 1 and a member of the USW international executive board out of Pittsburgh.

Donnie is from Hannibal, OH. He has been a member of USW Local 5724 for 40 years. He worked in the aluminum plant for 22 years in eastern Ohio before it closed. He knows what it is like to lose a good job with a good wage and good benefits to unfair foreign competition, and to a trade policy and tax policy that, putting it bluntly, sold out American workers.

He knows what those job losses do to an entire community in a place like Hannibal. Donnie never gave up. He spent his life fighting for the dignity of work in Ohio and across the country, serving the members of Local 5724 in many roles, including two terms as its chair. And together we have worked to make progress to build and level the playing field for Ohio steelworkers.

In his current role as director of USW District 1, he was instrumental in establishing the free college benefit. Donnie Blatt has been a member of the Ohio AFL–CIO, or on the executive board, since 2006. He became chairman of the legislative committee in 2019. We are lucky to have him here today. I am proud and lucky to have him as a constituent.

Thank you, Mr. Chairman. Donnie, welcome.

The CHAIRMAN. Thank you, Senator Brown. We look forward to working with you on these issues.

Let me now give the background on the other witnesses in their order. Our first witness will be Mr. George Davis, executive vice president and chief financial officer at Intel.

Our next witness will be Jonathan Jennings, vice president of global commodity purchasing and supplier technical assistance at the Ford Motor Company.

Our third witness will be Jay Timmons, president and CEO of the National Association of Manufacturers.

Our fourth witness will be Dr. Michelle Hanlon, who is the Howard W. Johnson professor at the Sloan School of Management at MIT.

And our final witness has just been introduced by our friend Senator Brown, Donnie Blatt, who is the director for the United Steelworkers District 1.

We will be glad to hear from you, Mr. Davis.

[Pause.]

The CHAIRMAN. You are on mute.

Mr. DAVIS. How about now?

The CHAIRMAN. Perfect.

STATEMENT OF GEORGE S. DAVIS, EXECUTIVE VICE PRESIDENT AND CHIEF FINANCIAL OFFICER, INTEL CORPORATION, SANTA CLARA, CA

Mr. DAVIS. Perfect. Too many mute buttons, apparently.

Chairman Wyden and Ranking Member Crapo, thank you for the opportunity to address the committee today.

Semiconductor technology and Intel's domestic R&D and manufacturing operations provide a critical foundation for U.S. economic and national security. More than 50 years ago, Intel invented the world's first commercial microprocessor. This fueled job growth and development of new technologies, with major economic benefits.

Today, Intel remains the only American semiconductor company that still designs and manufacturers the most advanced logic chips, and is the only company that has built leading-edge logic fabs in the U.S. in the past 5 years. I am proud that the majority of our manufacturing is conducted in Oregon, Arizona, and New Mexico, and that the majority of Intel's intellectual property still resides here at home.

Unfortunately, U.S. leadership in semiconductor manufacturing is at risk. Global demand for semiconductors has increased dramatically and is projected to grow 5 percent annually until 2030. However, only 12 percent of global semiconductor manufacturing is in the U.S., and just 9 percent is from American companies. Currently, 80 percent of the world's semiconductor manufacturing is concentrated in Asia.

U.S. manufacturing must regain its competitiveness. President Biden's executive order reinforces the urgency of funding the bipartisan CHIPS for America Act led by Senators Cornyn and Warner. Their legislation recognizes the importance of using Federal grants to support American workers and to strengthen the domestic semiconductor industry.

Congress must now work to fully fund the grant program and enact its proposed investment tax credit. An investment tax credit would encourage long-term domestic semiconductor manufacturing. A single advanced logic manufacturing facility cost tens of billions of dollars to build and operate. Every advancement in chip design requires retooling and reinvesting in new equipment.

Over the last decade, the average rate of chip manufacturing has grown five times faster overseas than in the U.S., due to robust incentive programs offered by other countries. In fact, U.S. companies face up to a 40-percent cost disadvantage compared to Asian competitors, due largely to government incentives. Investment in research and development is critical to advanced manufacturing.

As President Biden acknowledged in his executive order, R&D is essential to sustain leadership in the development of critical goods and materials. However, without congressional action, 67 years of pro-R&D growth policy is about to be reversed.

Starting next year, businesses will be required to amortize their R&D expenses over several years. Removing this deduction will make the U.S. virtually the only developed country in the world with this policy. This change will significantly increase the cost to perform R&D in the U.S. We applaud the bipartisan work of Senators Hassan, Young, Cortez Masto, Portman, and Sasse, whose bill, the American Innovation and Jobs Act, would prevent this regressive policy from taking place.

Right now, the U.S. is uncompetitive in attracting new semiconductor investment. Semiconductors are the building blocks of technology, and producers must continually invest in R&D to enable chips to run faster and use less power. This is why Intel reinvests, on average, nearly 20 percent of its revenue into R&D, or about $13 billion annually. The CHIPS Act, along with the ability to fully deduct R&D expenses, will enable American companies to better compete with heavily subsidized foreign companies.

The U.S. is the birthplace of the semiconductor and has always been a leader in semiconductor development. Investments in our industry will bolster manufacturing capabilities needed to strengthen the U.S. economy and national security.

Thank you for your time, and we look forward to working with you to advance these solutions and U.S. technological leadership.

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

The CHAIRMAN. Mr. Davis, thank you.

Our next witness will be Jonathan Jennings.

STATEMENT OF JONATHAN JENNINGS, VICE PRESIDENT, GLOBAL COMMODITY PURCHASING AND SUPPLIER TECHNICAL ASSISTANCE, FORD MOTOR COMPANY, DEARBORN, MI

Mr. JENNINGS. Thank you, Chairman Wyden, Ranking Member Crapo, and members of the committee, for the opportunity to speak to you today.

I am honored to be representing the U.S. auto industry, which accounts for 18 million U.S. jobs. The manufacturers, suppliers, and dealers that make up this complex system pump $953 billion into the U.S. economy each year.

It is especially meaningful to be testifying in front of not one, but both of my home State Senators, Portman and Brown, and Ford's home State Senator Stabenow. Our 53,000 Ford employees and more than 330,000 supplier and community partners are so fortunate to have you champion auto manufacturing in Washington.

My career at Ford started in 1993 as a manufacturing engineer in Cleveland, OH. Since then, I have worked around the world for Ford, focusing on developing a well-tuned global supply chain. I am speaking to you today as Ford's vice president of global commodity purchasing and supplier technical assistance, which purchased more than $48 billion in goods and services from more than 5,000 U.S. suppliers in 46 States in 2019.

At Ford, we see ourselves as America's automaker. We employ the most hourly U.S. autoworkers, assemble more vehicles in the U.S., and export more vehicles from here than any other automaker. So we feel uniquely positioned to speak to the business environment needed to continue our winning strategy.

We have supported communities and families across this country for 117 years. When America has needed us to step up and aid the safety and security of the Nation, we have responded. From World War II to this global pandemic, we have been on the front lines. Starting last year, Ford, along with our UAW partners, produced masks, reusable gowns, test collection kits, face shields, and ventilators to meet the COVID–19 emergency.

Our ability to quickly shift from manufacturing vehicles to manufacturing personal protective equipment was largely because of our unique manufacturing footprint. Many of the suppliers we use to make face masks, respirators, and ventilators were already in our U.S. plants and warehouses. It is a case study in how powerful and responsive our industry can be, if the materials and parts we need to build a new generation of vehicles are easily attainable.

And that brings us to today. The global industry is driving a transportation revolution. The shift to electric vehicles will reduce our carbon footprint and change how auto manufacturers assemble vehicles.

By 2040, more than half of the world's vehicles will be electric, and the vast majority of new cars sold will be electric. Right now, China is home to 73 percent of the worldwide capacity for lithium-ion batteries, followed by the U.S., far behind in second place with 12 percent. This is simply unacceptable.

Over the next few years, the growth in new manufacturing will be faster in Asia than in the U.S., further reducing our share of global battery manufacturing.

Recently, we have seen a semiconductor shortage force production cutbacks throughout the industry. Every auto company manufacturing in the U.S. has had production impacted. Ford workers have seen weeks of suspended production at plants in Louisville, Chicago, and Dearborn, MI.

The semiconductor situation underscores our supply chain risk. There are dangerous parallels to the way that electric vehicle bat-

teries are sourced and developed. In short, we must collectively do more to protect the future of manufacturing in America. Ford has committed $22 billion to develop a new generation of electric vehicles and to reach carbon neutrality by 2050.

Last year, we spent more than $5 billion in research and development in the U.S., representing 15,000 engineers and software developers, vehicle and powertrain prototypes, test labs, and equipment. That investment is reflected in the safety and connected vehicle technology you will see in an all-electric version of our best-selling Transit commercial van, which is built in our Kansas City plant, and an all-electric version of our best-selling F–150 pickup, which is built in Dearborn.

We have been clear and committed. The future is electric, and the future must include America.

For the U.S. auto sector to succeed, we will need Congress and the administration to support market-based consumer and manufacturing incentives, innovative new technology, labor and plant transitions, and supply chain security.

We appreciate Senator Stabenow's leadership, and not just as a champion for expanding the electric vehicle consumer tax credit, but for her recent introduction of the American Jobs in Energy Manufacturing Act. We embrace the proposal by President Biden that would provide a 10-percent advanceable tax credit for companies creating U.S. manufacturing jobs. We also support increasing existing R&D incentives for advanced battery and electric vehicle development, and continued immediate expensing of R&D.

Together, public and private support of electrification will ensure America not only competes as a leader globally, but wins. This is particularly important as Europe and China are already moving forward with robust electric vehicle adoption strategies and policies.

We at Ford stand ready to work with this committee, Congress, and the administration on efforts to not only deliver world-class electric vehicles, but transition the supply chain and infrastructure to assure future economic and transportation stability and security for America.

Thank you.

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

The CHAIRMAN. Thank you very much, Mr. Jennings.

Our next witness will be Mr. Jay Timmons.

STATEMENT OF JAY TIMMONS, PRESIDENT AND CEO, NATIONAL ASSOCIATION OF MANUFACTURERS, WASHINGTON, DC

Mr. TIMMONS. Well, good morning. And thank you, Mr. Chairman.

Of course, I am joining you virtually because of the pandemic that this country has endured for more than a year now. But this pandemic is really far more than a story of economic hardship and painful loss. It is also a story of communities and companies rising to the challenge.

America's manufacturing workers mobilized in ways reminiscent of their resolve during World War II, when manufacturers became

the arsenal of democracy. And the companies joining me today are part of this effort.

We have already heard from Ford and how they remade shop floors to make ventilators and face shields. You have heard from Intel that they accelerated access to technology to combat this pandemic.

From iconic global brands to family-owned shops, manufacturers answered the call. Today, 1 year after health restrictions began, the light at the end of the tunnel is growing brighter by the second, thanks to the innovation of pharmaceutical manufacturers. Their heroic work, combined with the previous administration's Operation War Speed and this Congress and this administration's focus on and investment in vaccine distribution, is now saving about 2 million American lives every single day.

Manufacturing worker achievements are all the more impressive when you consider the disruption that they had to overcome. The pandemic exposed and exacerbated, as you noted, Mr. Chairman, serious supply chain issues that we must now address as we work to build the next post-pandemic world.

In the spring of 2020, the National Association of Manufacturers released our plan for strengthening manufacturing supply chains. And I have had the opportunity to discuss it directly with some of you. Our goal is your goal: ensuring that the next dollar invested in manufacturing is invested right here in America.

This plan is comprehensive, from taxes to workforce. The central premise is that incentives, not punitive measures, will allow us to achieve our shared goal. But let me call out three key recommendations.

Number one, we must recognize the importance of predictability and stability in the tax code. Tax reform made manufacturers more competitive, driving historic job creation, wage growth, and productivity in its immediate aftermath. So let us not undo that progress.

Number two, manufacturers in America can only remain at the cutting edge if our tax code supports innovation. You have already heard this from two of the other panelists. Unfortunately, it will do just the opposite starting next year. And that looming change to the tax treatment of research costs will make it more expensive to perform research and development, potentially costing America its innovative edge.

And number three, let us recognize a simple truth: policies that are successful in growing manufacturing will require significant capital expenditures by the small and medium-sized firms that are truly the backbone of the domestic supply chain. But two other looming changes to the tax code will make those expenditures difficult. More stringent limitations on interest deductions and the phase-out of immediate expenses will take effect in the years ahead. And if not revised, these changes will make it hard to grow manufacturing here at home.

Ultimately, ensuring that the next manufacturing dollar is invested right here in America requires looking at the entire business climate. And that means that this Congress will have to address other pressing questions as well.

Will tax rates for businesses of all sizes remain competitive, or better yet, become more competitive, so that we can keep attracting investment?

Will the regulatory system provide certainty and clarity? Will health care become more affordable without compromising free-market principles?

Will this Nation finally make bold investments in infrastructure that are long overdue? Will energy be abundant, affordable, and reliable? Will export opportunities increase while we enforce our existing trade agreements to protect American workers?

And will we achieve comprehensive immigration reform to ensure that those hidden in the shadows who were brought here as children can become permanent, productive members of our society?

Now if the answer to those questions is "yes," if we tackle these fundamental issues, then I am certain that this next world that we are building in the aftermath of the pandemic will be built by American workers in American factories, restoring American leadership in the world.

Thank you, Mr. Chairman, and I look forward to your questions.

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

The CHAIRMAN. Thank you very much.

Our next witness is Dr. Michelle Hanlon.

STATEMENT OF MICHELLE HANLON, Ph.D., HOWARD W. JOHNSON PROFESSOR, SLOAN SCHOOL OF MANAGEMENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MA

Dr. HANLON. Thank you, and good morning. Chairman Wyden, Ranking Member Crapo, and distinguished members of the committee, thank you for inviting me to participate in this hearing. It is an honor to be here.

I have three points I would like to make, and then I look forward to any questions that you might have.

First, maintaining a competitive corporate statutory income tax rate is an important tax policy objective. As Ranking Member Crapo said in his opening remarks, prior to the Tax Cuts and Jobs Act of 2017, or the TCJA, the U.S. had a 35-percent corporate income tax rate. It was one of the highest rates in the world. That high corporate income tax rate, along with our international tax regime that we had prior to the TCJA, led to many negative economic outcomes.

For example, there were incentives to move profits to foreign locations. There were incentives to retain high-tech holdings in foreign subsidiaries. And in particular for this hearing, in some cases our prior tax system led to strong incentives to manufacture outside of the U.S.

Currently, our Federal corporate statutory income tax rate is 21 percent. According to the OECD data, our rate, including State and local income taxes, is estimated to be 25.8 percent. The OECD average is 23.3 percent, and the G20 average is 26.9 percent. Thus, we now have a competitive domestic corporate income tax rate, but we are by no means a tax haven.

My co-workers and I recently surveyed some U.S. companies about the TCJA. We find that almost 90 percent of the key corpora-

tions that responded to the survey said that the lower corporate tax rate was important to their company. Indeed, the corporate rate reduction was the provision of the TCJA that received the highest importance rating in our survey. Furthermore, of the companies that said that they increased investment in response to the TCJA, many said they did so because of the reduction in the corporate tax rate.

There are certainly tax and non-tax factors that go into company decisions. In terms of tax policy, in my opinion it is very important that we endeavor to maintain a competitive corporate tax rate in order to incentivize economic activity here at home, and to avoid the negative economic consequences from the pre-TCJA era.

My second point is that, in addition to competitive tax rates, targeted tax incentives are often desirable—for example, the R&D tax credit and the immediate expensing of R&D costs, as we just heard. R&D is vitally important in the manufacturing sector.

The latest data from the IRS are for 2014, and those data show that the manufacturing industry claimed nearly 60 percent of the research credits claimed by corporations. The academic research consistently finds evidence that the R&D credit worked, meaning that it increased research and development spending. And moreover, the evidence is consistent with the increased spending being greater than the cost to the Treasury.

There are also other situations where there might be societal or strategic reasons to provide targeted tax incentives for certain activities or industries—for example, green energy tax incentives. Another example are tax incentives to address concerns about the lack of supply in manufacturing of certain goods in the U.S., in particular semiconductors. An investment tax credit has been proposed, as we have heard from other witnesses, as part of the CHIPS Act. It is a sizeable credit: 40 percent in the first year. And based on the academic research of other investment tax credits, it would likely help to incentivize investment in that activity.

However, I want to point out that it is important to remain cognizant that the overall tax system needs to remain competitive for these temporary incentives to be most effective.

Third, and related to what I just mentioned, is that looking forward it is important to consider the entire U.S. tax system in terms of our rescheduled tax changes and proposed tax changes that will affect, and possibly offset, some of the investment incentives that we have in the code.

For example, in terms of changes that are scheduled to occur in the TCJA legislation, foreign depreciation will soon start phasing out, and R&D expenditures will be required to be capitalized and amortized rather than expensed. Both of these changes will weaken the investment incentive in the current tax code.

In terms of proposed tax changes, President Biden's tax plans include raising the corporate tax rate and the resurrection of an alternative minimum tax, this time based on a company's accounting earnings.

I have already discussed some of the risks of an uncompetitive corporate tax rate. The proposed AMT is concerning for several reasons, but most importantly for this hearing is that such a policy can offset the targeted tax incentives.

The investment incentives are not present in financial accounting income because financial accounting income is intended for a different purpose. Thus, enacting an AMT, and beginning an AMT base using financial accounting income, will serve to weaken the investment incentives in the tax code.

Thank you again for inviting me to participate in this hearing. I look forward to your questions.

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

The CHAIRMAN. Thank you very much, Dr. Hanlon.

Our final witness will be Mr. Donnie Blatt.

STATEMENT OF DONNIE BLATT, DISTRICT 1 DIRECTOR, UNITED STEEL, PAPER AND FORESTRY, RUBBER, MANUFACTURING, ENERGY, ALLIED INDUSTRIAL, AND SERVICE WORKERS INTERNATIONAL UNION (USW), COLUMBUS, OH

Mr. BLATT. Good morning, Chairman Wyden, Ranking Member Crapo, and members of the committee. I was very honored to be introduced by my good friend, Senator Sherrod Brown. He has spent his career supporting workers of the United States in support of U.S. manufacturing, and also for trying to repeal provisions of the current tax law that would reward offshoring of good-paying manufacturing jobs. So, I appreciated his introduction.

As a member of the largest industrial union in North America, and representing workers across our Nation's economy, manufacturing jobs are important to a local tax base and to building strong communities. For these reasons, the Congress and the administration should use all the tools available to retain and grow manufacturing jobs and domestic supply chains, including U.S. tax policy.

As the committee considers the effects of the U.S. tax code on manufacturing, we need to make sure the domestic manufacturers and the workers are able to compete globally, and able to make products for our important supply chain. This starts with a better understanding of our supply chains and improving our procurement policies. The tax code can be used strategically to drive investment in industrial facilities. Capital investments in facilities are expensive and are expected to last for decades, but that upfront capital is hard to come by, especially during a recession.

Our union certainly has had success stories where our employers have taken advantage of tax credits to ensure that our members' jobs continue. One example is a company named Rotek in Aurora, OH, which upgraded its facility from the 2009 48C tax credit. Our members there continue to make large-diameter slewing bearings and seamless forged rings for the oil, gas, mining, and wind energy industries. We support the revival and expansion of the 48C tax credit, with an emphasis on the communities with significant job loss.

It is also important that we put our tax code in perspective with the globe, and that we protect against unnecessary tax base erosion. We need to ensure that tax revenues allow the government to rebuild our infrastructure, invest in our workers, and provide for our security.

Meanwhile, we need to improve our tax code to discourage outsourcing and profit shifting to low-tax jurisdictions. We should also increase transparency. The quest to build out domestic supply

chains for critical technology will only be successful if we also use policy levers to ensure that domestic manufacturers have customers who make long-term commitments to source domestically.

Our union can provide many examples of U.S. companies whose prices are illegally undercut by foreign competitors. Our trade laws need reform, but so do our industrial policies that have not successfully created markets for domestic manufacturers on a large enough scale.

For example, the bulk components of new energy technologies come from overseas. Yet companies like USW-represented Sharon Tube and Thomas Strip Steel can make components for solar and battery technology, despite both being nearly 100 years old.

I am confident that U.S. manufacturers can and would innovate as long as they have customers.

As we look at the expansion of these new technologies, the Federal Government has a big role to play in the build-out of supply chains, and making sure that we retain existing supply chains. For example, USW members at Warren Coke have long provided product to Cleveland-Cliffs, where our members make lightweight steel that goes into fuel-efficient automobiles. As car companies work to meet their climate commitments, Federal policy should ensure that we gain rather than lose jobs in the auto supply chain.

The USW has been a long supporter of Buy America policies in Federal procurement or infrastructure as a way to build markets and to ensure that Federal money is spent to support American workers. It only makes sense that American workers benefit from projects funded by American tax dollars.

These principles are broadly popular. We encourage Congress to ensure that Federal spending in the form of tax credits is used to benefit industries and companies that drive economic recovery in America and grow our manufacturing base.

In conclusion, well-paid union, American manufacturing workers are critical to our economy. We can see that evidenced in hometowns across our country.

I thank you for the opportunity to share how important it is for Congress to use many tools, including tax policy, to grow a globally expanding manufacturing base. And I look forward to your questions. Thank you.

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

The CHAIRMAN. Thank you, Mr. Blatt. And I want to thank all our panel members. I think we are going to have a good discussion with the committee.

Let me start with you, if I might, Mr. Blatt. It seems to me you do not grow high-skill, high-wage jobs by osmosis. And the situation here is really urgent. If there is more kind of dawdling around, we are not going to see those good jobs in Oregon and Ohio and all the States that my colleagues represent.

So the way we are looking at it is, there is a real job-creation tool kit for reshoring and bolstering American manufacturing. What would be the most important step, in your view, that the Finance Committee could take as it tries to use that tool kit to shore up American jobs?

Mr. BLATT. Well, thank you for that question, Senator Wyden. I believe that, in our view, one of the most important steps that we

can do is to make sure that we create incentives for manufacturers to create jobs here in this country and keep people from moving offshore with the tax policies that we currently have.

If we do not take action to bolster manufacturing in the U.S., that just means more jobs are going to be in China and not in Ohio, or in Oregon, or other parts of the country.

The CHAIRMAN. Good. Let me go to you, Mr. Davis, if I might. I want to start by talking about the short-sightedness of American tax policy. Because if you look at the recent past, Congress will throw another tax extender out there. We create all these fiscal cliffs. But it does not make it possible for you, as a company, to have the certainty and predictability you need to grow jobs.

And this short-sightedness includes what I consider to be a truly bizarre decision made by my Republic friends who nearly 4 years ago decided to put incentives for research and innovation on the chopping block so they could squeeze out their 2017 tax bill through something called "reconciliation."

So here is my question: I think the last thing we need for Intel, which employs so many Oregonians and other Americans, is more short-term tax policy. I think our competitors can really lap us in this competitive race if we go that route. And we will just keep bleeding if we keep throwing these short-term band-aids at it and end up in a kind of cul-de-sac where we are in even worse shape than we are now.

Would it be fair to say that it is the position you are talking about today that our chip manufacturers need to have a long-term strategy if we are going to get out of this cul-de-sac?

Mr. DAVIS. Thank you, Senator, for the question. I think you are spot-on, and I also thank you for your support in Oregon. It is a wonderful place to have so much of our activity based.

You know, I think both of the issues that we are talking about today, both the R&D issue around deductibility and the investment tax credit, are very important issues for long-term stability and for attracting investment. R&D is about 2.8 percent of GDP today. For every $1 billion—and there is about $500 billion of R&D spent in the U.S. today, over 70 percent of which is from the private sector—but every billion dollars equals about 17,000 jobs.

So, I think the American Innovation and Jobs Act is very aptly named. We agree that changing R&D from deductibility to amortization is a very regressive step, and one we would very much discourage. It would also reverse 67 years of policy that has allowed the deductibility of R&D and, as you know, this is in no small part a major contributor to why the U.S. leads in so many areas of technology. And we cannot take for granted the impact this would have on both jobs and the continuing innovation in the country.

On the investment tax credit, for semiconductors—but for so many other industries as well—the investments that we have to make are in the billions of dollars. And they take place over many years.

So if we have a policy that encourages long-term investment and is stable so people can have confidence that if they make the decision to invest more in critical areas in the U.S.—in our case in semiconductors—then we can count on the same types of incentives

that are allowing our foreign competitors to operate at a much lower cost.

The CHAIRMAN. All right; thank you, Mr. Davis.

I want to ask one other question really quickly. Mr. Jennings, you all and other automakers are making a transition to electric vehicles, a very constructive step. I do not want us to end up being reliant on China for batteries. And you know, a lot of people were looking at the big challenge, that as we shift to an all-electric future, what can we do to make sure that we are going to have those batteries? Because I think they are going to play an enormously important role in the future.

Can you give us a quick answer?

Mr. JENNINGS. Yes. So, thank you for the question, Chairman Wyden. I would say there are really three key steps that we could take, the first of which has been mentioned earlier, and that is, we need to ensure that we do not disincentivize companies from pursuing this R&D, because it is so critical, by taking away the ability to deduct those R&D expenses.

The second is actually doubling down on those targeted areas for incentives around electrification, around advanced mobility.

Thirdly, and probably most importantly in this area of batteries, how do we also look at cash back for the credits that have been identified? This especially is true for companies that are going through start-up, and the companies that actually need the money now. How can they actually get the cash back for those credits now to enable them to, again, pursue further investment in reference to R&D, again at a time when they need it at this point.

The CHAIRMAN. Thank you. I am over my time.

Senator Crapo?

Senator CRAPO. Thank you, Mr. Chairman.

Professor Hanlon, I will start out with you today. In your testimony, you noted that targeted tax credits for strategic industries can be effective, and that we should protect them. But you made a very strong case, I think, that using a relatively high corporate tax rate to offset them would not be good policy.

Could you elaborate on that?

Dr. HANLON. Sure. And thank you for the question.

The corporate income tax is generally thought to be an inefficient tax in the sense that it causes a lot of distortion. In fact, the OECD has called the corporate income tax the most harmful form of taxation for economic growth, because it discourages job creation and investment.

So, having a competitive corporate tax rate is important so those distortionary effects are not too large or too detrimental. And I think, you know, we already ran the experiment to some degree of having the highest tax rate in the world, and the outcomes were not good.

Senator CRAPO. Well, thank you very much.

And, Mr. Davis, let me move to you on the same question. You have noted very effectively the power of targeted industries' specific tax incentives and the dangers that we see of some of those expiring soon. And my chairman, Senator Wyden, correctly noted that they are expiring because of the reconciliation act, which has a 10-

year limitation on it, or other provisions that were required in order to meet the requirements of the reconciliation act.

I think there is bipartisan agreement that we should not see those expire. In fact, some of the legislation I referenced in my opening statement does exactly that, on a very bipartisan basis.

But could you comment on the notion that we are hearing that making those tax credits permanent, and adding maybe even additional tax credits that are needed and important on an industry-specific basis, could be offset, or should be offset by increasing the general corporate tax rate?

Mr. DAVIS. Senator Crapo, first off, thank you for your leadership for many years in the semi-industry; and certainly the success of Micron is in no small part due to your leadership, and we appreciate that.

You know, the idea of having an incentive to create outcomes that you want is a pretty accepted concept. And we certainly want to ensure that we have incentives for R&D in the U.S. to be competitive with R&D anywhere else in the world. And we have, for 67 years. We have assured that in the way we have approached it. And I think it is very encouraging to see bipartisan support for not ending that—and for getting that in the areas that we are talking about.

For investment tax credits, I can speak to the semiconductor industry—and I know you have seen it as well over the years—we have not had a stable incentive for manufacturing semiconductors in the U.S. for a very long time. Whereas, it has been a significant focus of a number of countries, particularly in Asia, who view semiconductors as a foundational technology, both for economic expansion and their own national security.

So in 1990, semiconductor manufacturing in the U.S. was about 37 percent of the worldwide manufacturing. Today, it is 12 percent, and it is on a path by 2030 to be 10 percent.

At the same time, you have seen a massive expansion in Asia, and China has gone from 1 percent to 15 percent of the world's semiconductor manufacturing over that same period. And they are on a track to be at roughly 25 percent by 2030. And these trends really reflect the difference of having stable, long-term incentives to grow capability in the foreign locations that create a significant cost advantage for semiconductor expansion in Asia, as opposed to in the U.S.

So I think, as we think about investment tax credits, it would be great to be able to have a sustainable strategy to reverse the trend.

Senator CRAPO. Thank you very much. And you make a strong case for having sustainable, long-term tax policy in the tax credit system.

Mr. Timmons, we are running short on time, but could you just respond to the notion that as we seek to have that stable, long-term investment policy in our tax credit system, that we not make the mistake of thinking that we should raise the corporate tax rates at the same time?

Mr. TIMMONS. Well, Senator, I can tell you that one of the strongest actions that Congress has taken in the last few years has been to reduce the corporate tax rate, as well as pass-through rates for S corps. And what I hear when I talk to manufacturers all

around the country is that that tax reform actually supercharged these companies' ability to invest in America, hire American workers, and raise wages and benefits.

Senator CRAPO. Well, thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Crapo.

Senator Stabenow?

Senator STABENOW. Well, thank you very much, Mr. Chairman, for hosting what I consider to be an incredibly important hearing. And I do not believe that we have an economy unless somebody makes something and somebody grows something, and that is what we are talking about here: our capacity to make things in America. And there is no reason, if we have the right set of policies, that we cannot do that.

That is incredibly important in Michigan, as you can imagine, as well as the whole country. And it is an area where it is a very, very high priority for me, what we are talking about today.

I also want to thank all of the wonderful witnesses who are testifying today, and particularly Jonathan Jennings from Michigan's own Ford Motor Company, known for their commitment to U.S. manufacturing. And a big thank you, Jonathan, for the incredible work when Ford stepped up to really help us deal with the medical supply chain needs, PPE and so on, during the pandemic. Really, really extraordinary.

The U.S. is a global clean-energy country that is in a race right now. We are in a race. We know $100 billion has already been put in that race by China for electrification. We know the investments that are going on around the world.

We have already talked about, today, the capacity of China now around lithium-ion batteries, as well as solar panels and other things, because of the investment that they have made. And also, our U.S. supply chain vulnerabilities really are happening right now, today. In Michigan, there are layoffs right now as a result of this semiconductor chip that comes from one plant in Taiwan. And we certainly cannot allow that to continue. So I appreciate all of my colleagues' and, Mr. Chairman, your comments.

We have a lot to do together, and I just want to, before asking a question, throw out the 48C, which I was proud to author a number of years ago. So pleased to see everyone embracing the bipartisan effort we have to reconstitute the 3-percent tax credit for clean energy manufacturing in the United States. I appreciate Senator Manchin and Senator Daines partnering on this.

Also, Mr. Chairman, I am anxious to work with you and all of our colleagues on the bipartisan efforts for other incentives to invest in U.S. manufacturing of semiconductor components, batteries, solar panels. There is just no reason that we cannot have those things made in America.

And finally, I do have to put in a plug, when we are talking about electrification, that we need to be passing new legislation to expand and reform the consumer tax credit 30D, which is based on what Senator Alexander and I did in a bipartisan bill last Congress. So we have to be doing that as well.

So, Mr. Jennings, two questions. With EVs only accounting for about 2 percent of the vehicle market today, can you talk about

why it is so important to continue and expand the consumer tax credit?

And also, secondly, how does that work in tandem with domestic manufacturing incentives like 48C to increase the component parts we need here in the U.S.?

Mr. JENNINGS. First, Senator Stabenow, it is again a pleasure to see you, especially in this forum. Specific to the question around the reference to the 2 percent, we know that Americans are taking advantage of the EV consumer tax credit today. And we believe, in order for us to keep that momentum, that we have to look at that additional 400,000 units that I believe your 2019 legislation had proposed.

So for us, that is a key item that we need to continue on to continue to grow on that 2 percent that you have mentioned.

In reference to the consumer tax credit and the manufacturing credit, we actually see that as a one-two punch, right? In order to enable us to really continue on with the innovation, with the investment that we have in the infrastructure, that again, aligned with those other incentives, really puts us in a position to be more competitive globally.

Senator STABENOW. Great. Thank you so much for all your leadership.

And then quickly, before my time runs out, Mr. Blatt, thank you. Mr. Blatt, you are a wonderful leader of our steelworkers, so I am so grateful for your endorsement of our 48C bill, and for all that our steelworkers do in America. And we need more jobs, as you know, for our skilled workers—good-paying jobs. But I wonder if you might speak a little bit more about making things in America. I am pleased to have introduced a bipartisan bill called the Make It in America Act to close the loopholes in America's laws so we can be using our purchasing power to a great extent to help drive the market.

Could you take just a moment to speak about why you think it is so important that we do that?

Mr. BLATT. Absolutely, Senator Stabenow. Thank you very much for your question. And by the way, we support that Make It in America Act as a union, and we appreciate your work in that area as well.

Look, investing in America and investing in American manufacturing creates jobs. And it allows for our manufacturers to not only hire more people, but expand their businesses. And whenever our manufacturers expand, it helps our communities. It creates other jobs within the community. You know, when I worked at Ormet, I know that for one job at Ormet, it supplied six other jobs out in the community and the county where that manufacturing was done.

And that is true everywhere in this country. So having a buy America provision is—there is no sector that cannot be touched by that and cannot be made better because we have these jobs here.

Senator STABENOW. Thanks so much.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Stabenow.

Senator Grassley?

Senator GRASSLEY. Thank you, Mr. Chairman. I am going to ask one question of Dr. Hanlon and Mr. Timmons, but I want to say something.

First of all, I appreciate your holding our hearing. It is very important that we have strong domestic manufacturing, and that is very important for our economy. It is very important for our national security. This was a significant motivation behind our pro-growth tax reforms in 2017.

These reforms were designed to encourage business investment at home, and to increase our competitiveness abroad. The key features included reducing our corporate tax rate from 35 percent, because it was the highest in the developed world. We moved that down to 21 percent. For those who like to point to Scandinavian economies as a model, our 21 percent is just 1 percentage point lower than Denmark and Norway, and less than one-half point lower than Sweden.

Just as important for many manufacturers that operate in pass-through form, the individual rates were lowered, and an innovative deduction for qualified business income was enacted to help those people.

In the 2017 tax reductions, we also modernized America's international tax system to bring it more in line with other developed countries. These rules make U.S. companies more competitive in the worldwide marketplace and incentivize them to grow their businesses here at home.

This means more jobs, better wages, and increased investment. And central to our mission to encourage greater investments in the United States, enhanced expensing rules were included. This encourages our manufacturers to invest in new equipment and machines that help boost productivity.

Combined, these and other reforms have made the U.S. a more attractive place to locate a new facility and expand an existing one. As a result, in 2018 manufacturers created the most new jobs in over 20 years. And in 2019, manufacturing capital expenditures reached an all-time high. Our mission must be to build on the success through a continuation of our pro-growth tax policies.

And with that being said, I want to ask the one question that I said to Dr. Hanlon and to Mr. Timmons.

The administration has proposed tax increases on U.S. businesses: increasing the corporate tax rate to 28 percent, raising taxes on pass-through businesses through raising the individual rates, imposing a corporate alternative minimum tax, doubling the tax rates on foreign subsidiaries, and I could make a much longer list. But to speed things up, I want to refer to something that members of the Biden administration have said, particularly Secretary of the Treasury Yellen, to justify these tax increases on producers, by arguing that, when coupled with other parts of the administration's economic agenda, such as investments in infrastructure, their proposals will, quote, "make our economy more productive," end quote.

In your view, is spending on infrastructure a fair substitute for low tax rates and an overall internationally competitive tax system?

Whichever of the two of you wants to start, and then when that person is done, just go to the other person.

Mr. TIMMONS. Sure. I am happy to start, Senator, and thank you for the question.

As I said in my opening statement, we have seen enormous—enormous—investment and job growth here in this country as a result of tax reform. It is the reason that we supported it, and it was the reason we were calling for it for several decades. In fact, after we achieved and Congress passed that legislation, we said that it is now on us to show that we are keeping our promises to invest, and hire, and grow wages and benefits.

We have a document, "Keeping Our Promises," that I will make sure you have a copy of, that outlines some of the great success stories of tax reform. I think of Jamison Door that gave their 120 employees special bonuses and invested in a new manufacturing space: 50,000 square feet. Marlin Steel Wire Products invested $1.5 million in new technology, and they increased their full-time workforce by 30 percent. Carpenter Technologies Corporation, $100 million investment.

Those are small manufacturers. And there are larger manufacturers that have done some amazing things as well. A $400-million investment from a Midwest manufacturer. Significantly higher wages from manufacturers in Indiana and Ohio. A billion-dollar investment from a beverage manufacturer in a southern State. Those are the types of positive benefits that came from tax reform.

Now there are some issues that have to be resolved. We are here today to talk about some of those on the research and development side, and on the investment deductibility side.

But all in all, Senator, the work that was achieved then has led to some really positive results.

Dr. HANLON. Yes; I will just add a couple things to that. I think raising tax rates now would be a mistake. If we raise our corporate tax rates to 28 percent, then our combined rate will be 32 to 33 percent. That will again be the highest corporate tax rate in the OECD.

And I think that would be a big mistake. It will put us at a competitive disadvantage in many respects, which we have already mentioned, many of us on this panel today. But I think——

The CHAIRMAN. Okay, Dr. Hanlon, it is Senator Cantwell's turn next.

Senator CANTWELL. Thank you, Mr. Chairman. Thank you and the ranking member for holding this important hearing. I wanted to—it is interesting. We have just been in the Energy Committee having a similar conversation about electric vehicles and the United States' competitiveness as it relates to manufacturing.

But I wanted to ask Mr. Jennings: Ford, and obviously other U.S. manufacturers, are trying to fight climate change and be competitive in a basically very international competitive market. But we have this issue with SK lithium-ion batteries in Georgia where Ford was going to do the F–150 program. And obviously, with the USMCA 75-percent threshold mark, that would mean it is practically nearly impossible to meet that without producing those batteries in the United States.

So I wanted to ask you whether—well, actually ask you why that 4 years is not long enough to get the SK batteries actually built there, and what does that mean for the Ford program? What does it mean for your ability to do production in the United States?

Mr. JENNINGS. Thank you for the question. And to your point, the F–150 is a critical product for us. And specifically, in reference to the 4 years—why does it take the 4 years that was referenced?—the batteries are the fundamental foundation of electric vehicles. And the development of those battery cells and battery packs take approximately 4 years. Additionally, the building of a new electric vehicle facility also takes about 4 years.

So we would have to be working with those suppliers, and simultaneously developing that battery cell, that battery pack, along with the building of the actual facility.

In reference to what this is actually doing in light of not having other battery cell providers available in the U.S., we have not been able to confirm that there is capacity currently available.

We will now have to resort to looking at foreign suppliers to potentially import—which is to your exact point—which would not be compliant to the USMC. So that is why we really feel it is critical for us to have a more competitive position within the U.S. footprint.

Senator CANTWELL. Thank you. So literally, we have to get this dispute resolved, really, is what it comes down to.

Mr. JENNINGS. Absolutely. And to that point, what we have consistently stated is that we really encourage the Korean Government to work with these two companies to resolve this, even prior to the 60-day USTR timing. They need to come to an amicable agreement between the two.

Senator CANTWELL. Thank you.

Mr. Timmons, I wanted to ask you about another transportation sector, the aviation transportation sector. We have seen tremendous job loss, tens of thousands of jobs, because of, obviously, the COVID pandemic and the decline of demand in the sector.

Yet, we seem poised, if you have seen the numbers on aviation transportation of late, we seem to be returning to the aviation sector. What do we need to do to make sure that we keep a skilled aviation supply chain in the United States?

Mr. TIMMONS. Well, I would say—Senator, I would say one thing that we need to do to make sure that we get the travel and hospitality industry up and running again overall is to make sure that we are all promoting vaccine acceptance.

This pin [indicating]—you are going to actually receive one fairly soon—this is a red and yellow ribbon that encourages vaccines throughout our country. And we are very proud to be leading that effort.

I will say also that tax incentives that are targeted toward workforce training and development are extremely important—it was part of our onshoring plan that we released last year that I referenced in my opening statements—and other programs that will also help to upskill and future-proof our workforce that can be supported by the government, but also, most notably, are promoted by the private sector.

I think of actually Boeing—and I know that there is a connection there for you—I think of Boeing and the work that they do in supporting community colleges and technical schools where they actually have on-the-ground training for some of their future workforce.

I have had a chance to see some of those programs in action, and they are phenomenal. We can support those types of programs through appropriate tax incentives and other programs.

Senator CANTWELL. Thank you.

And, Mr. Davis, just one last thing on this supply chain as it relates to you. What do we need to do on the material side for the shortage that we are seeing in silicon?

I mean, one of the things we just talked about on the Energy Committee was why DOE needs to do more on actual recycling of material, that that is something the United States could help in the immediate supply effort.

Mr. DAVIS. I think what we have seen this year, Senator Cantwell, is remarkable demand swings, and certainly automotive has been one of the most impacted—first, with a large decrease in demand followed by a very strong ramp-up. But we have also seen in the semiconductor industry a very large expansion in demand, as people are working from home. The way they interact with each other, and the way they purchase has created tremendous pressure on the semiconductor industy, the whole ecosystem, not only materials but component parts like substrates, Wi-Fi elements.

So it is really about incenting the expansion of the supply chain ecosystem to support semiconductors. One of the things that we see today is, like we said, we are at about 12 percent manufacturing in the U.S. for semiconductors. Aerospace is 50 percent in the U.S. And so we are highly dependent on foreign suppliers. And as was mentioned, the supplier in Taiwan has created some of the shortages as well.

So I think incenting the expansion of the supply chain, expansion of manufacturing in the U.S., which I know is being looked at—and I think the CHIPS Act is a really positive step in that regard. It is a good first step.

Senator CANTWELL. Thank you. Thank you, Mr. Chairman. We are definitely very proud of that 50 percent supply chain in the U.S. in aerospace, and we certainly want U.S. manufacturers in the chip fabrication business to have supplies and materials.

Thank you.

The CHAIRMAN. Thank you, Senator Cantwell.

Senator Thune?

Senator THUNE. Thank you, Mr. Chairman. Let me start by saying that tax reform cut taxes for families, doubled the Child Tax Credit, and nearly doubled the standard deduction. It also lowered tax rates across the board for small to medium-sized businesses, farms, and ranches. It lowered the corporate tax rate, which up until January was the highest corporate rate in the developed world. And as a result of that, personal incomes are rising. And up to the pandemic, the economy was on solid footing.

Tax reform also improved the business environment for U.S. manufacturers, in particular with the lower business rate, easier access to foreign cash, and more favorable expensing for capital acquisitions.

So I would like to direct this question to Mr. Timmons and/or Dr. Hanlon. The first question is, has tax reform helped American manufacturers and their workers, namely, when it comes to jobs, wages, and benefits? And then secondly, has tax reform helped U.S. manufacturers better compete against their global counterparts?

Mr. TIMMONS. I went first last time, Michelle, so if you want to go first, you have the floor.

Dr. HANLON. Yes; thank you for the question. I think the tax reform clearly was an improvement. And I think it clearly made our manufacturers more competitive. It provided incentives to not ship manufacturing offshore, but it did help create incentives to maintain manufacturing here.

So I think it is a clear improvement. I think there are things we can do to build upon the TCJA and improve it further. One of those things would be to give manufacturers some certainty that these provisions will stay in place.

So for example, the FDII provisions—if we can give them certainty that something like that will stay in place for a while, and the low tax rate, I think that will help to strengthen these incentives going forward.

Mr. TIMMONS. I would echo that sentiment, Senator, as well. I can give you a couple of examples where manufacturers—and these happen to be smaller manufacturers, small to mid-sized SMEs—have actually brought production back to the United States, or to the United States. Kentucky-based Big Ass Fans, for instance, they moved production jobs from Malaysia to the United States. They are based in Kentucky. I think I may have said that. Tennessee-based Bobrick Washroom Equipment, they moved production for their North American product lines to Jacksonville, TN.

Those are just a couple of examples. But I mentioned before several examples of investments that small, medium, and larger manufacturers have made since tax reform took effect. These resulted in billions of dollars of investment in plants and equipment here in the United States—and in addition, hiring American workers, and raising wages and benefits.

But I think what Dr. Hanlon mentioned is extraordinarily important. Businesses, manufacturers, absolutely need predictability and stability in the tax code. And we would ask this committee and your colleagues to recognize that fact.

And quite honestly, increasing the tax burden, regardless of the objective, will harm the ability of manufacturers to grow and compete in the modern economy. We do have some issues to address, but those that we are talking about today can actually make us even more competitive.

But to your question, Senator: those reforms were very important to supercharging investment and job creation here in the United States.

Senator THUNE. Okay. And just to give an example, I mean if you look at how, back in the early days there were about 40 percent of American workers in ag, and in the beginning of the 20th century, it was about 2 percent. The 2 percent today produce significantly more than the early 40 percent. The same thing has happened, I think, in American manufacturing, which peaked in 1944

at 39 percent of the labor force and has been on decline since then. It was about 8½ percent in 2017.

What that means, obviously, in part at least, is that the United States' manufacturing activities became more productive and specializing in high tech. These advances have potential to transform fundamentally the nature of work, commerce, and manufacturing.

With that in mind, what tax policies can best position America's manufacturers and workers to compete in the modern economy?

I would ask that again to Mr. Timmons and—yes?

Mr. TIMMONS. Sure. So one of the reasons, obviously, that we are here today, Senator, is to talk about the research cost, the amortization that will occur if there are not improvements made. We are very excited about this bill. We want to make sure that research and development costs remain a deduction.

We believe that there needs to be a broad-based investment tax credit. We are talking about some tax credits here today as well. But in our strengthening the manufacturing supply chain proposals that we released last year, we called for a broad-based investment tax credit to encourage new domestic investments in manufacturing. And then, as I mentioned in an earlier question that Senator Cantwell proposed, incentives to help companies recruit, train, and retain skilled workers in order to help build a pipeline of workers with the skills needed for a modern manufacturing facility.

It is hard to believe, after this pandemic, that manufacturers today have 515,000 open jobs that we cannot fill because we cannot find folks with the skills necessary. What we want to do is, we want to train existing workers, train new workers, and upskill those workers to future-proof their jobs.

The CHAIRMAN. We have 17 Senators still waiting.

Senator Menendez?

Senator MENENDEZ. Thank you, Mr. Chairman.

My home State of New Jersey has long been at the forefront of innovation, from telecom to electricity to the pharmaceutical innovations of today. Indeed, one of the three COVID–19 vaccines being used nationwide today comes from a New Jersey-based company.

We manufacture more than $52 billion worth of products a year. We support 247,000 jobs with an average pay of about $92,000. So those are significant. But technology and manufacturing are changing rapidly.

It seems to me that we need to look forward to the future of manufacturing and ensure that America is where that manufacturing occurs. Something I have been looking at is what role Congress can play in fostering the next generation of advanced manufacturing to ensure the jobs of the future are created here in the United States.

And I believe we need to invest in our world-leading university system and develop public-private partnerships between universities and the private sector. I am looking forward to working with my Republican colleagues on the committee to draft legislation that would establish centers of excellence to incubate advanced manufacturing processes that would enable us to out-compete China and the rest of the world.

So, Mr. Timmons, can you speak to the importance of leveraging our research university system to foster advanced manufacturing in order to be competitive in the years ahead?

Mr. TIMMONS. Yes; thank you very much for that question, Senator. You are absolutely correct if you think in terms of the work that we can achieve at our 4-year institutions, and I would say that I have seen some amazing work being done at other schools as well. If you marry that hand-in-glove with the research and development tax credit, and the ability to deduct that on an annual basis, you continue to strengthen our capabilities as the leading innovative nation in the world.

And innovation is, frankly, the lifeblood of manufacturing. You have already heard some statistics coming from Mr. Davis and others about how that research and development truly is the lifeblood of our economy, and that we lead the world. We want to continue to develop our footprint in the R&D space, and we can do that through partnerships with institutions of higher education.

Senator MENENDEZ. It seems to me, hearing the number of jobs that you say exist but, however, are going unfilled, that in addition to the type of training programs you are talking about, we should be marrying our community college and other institutions to look at the skill sets that are needed in this regard in order to fulfill the goals.

Mr. TIMMONS. Yes, sir.

Senator MENENDEZ. Let me turn to the shortages of personal protective equipment that persisted throughout much of the last year, that revealed the vulnerability of our medical supply chain. States were forced into bidding wars against each other, and chaos ensued. The front-line heroes of the crisis are health-care workers who risked their lives day in and day out, who were compelled to use the same PPE shift after shift.

Life-saving drugs and ventilators had to be rationed, creating an impossible choice between hospitals, long-term care facilities, and nursing homes. And so I believe we can never again be held hostage to foreign manufacturers. I understand we are going to live in a global economy and a global supply chain, but for such critical medical supplies, I think that there is a better way.

So I have developed bipartisan legislation with Senator Wicker to incentivize medical supply manufacturing in Puerto Rico, which is part of the United States, as a Commonwealth. Our legislation would provide U.S. companies with a credit against the GILTI tax based on the amount of manufacturing and job creation they undertake in the territories, which would not be a giveaway. Rather, it is tied directly to wages and tangible investment in the territories.

Mr. Blatt, can you speak to how the loss of domestic pharmaceutical manufacturing capacity created supply chain vulnerabilities that the pandemic exposed?

Mr. BLATT. Yes; thank you, Senator Menendez.

Actually, we are losing a pharmaceutical manufacturer that we represent in West Virginia, not in Ohio, that is going out of business. And that is 1,000 jobs that are lost.

We struggled with personal protective equipment all over the State of Ohio, and all over this country, for our members during

the pandemic. And I believe that it is critically important to get that supply chain back and make sure that, not even when we are in this pandemic, but whenever we need protective equipment, our workers and our members can get those supplies.

It is critically important to our economy to make sure that we have a good supply chain for domestic pharmaceuticals and protective equipment supplies.

Senator MENENDEZ. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Menendez.

Senator Portman?

Senator PORTMAN. I appreciate your holding the hearing. It is very timely, and I thank you for inviting so many Ohioans to join us. Jake Timmons, Jonathan Jennings, thank you guys for being here. And, Donnie Blatt, I appreciate your being on today, and I appreciate working with you and your team, and all of your locals, including some good successes with Piketon, with Cooper Tire, most recently with Cleveland-Cliffs, that saved a bunch of jobs. And your support for our made in America bills, including some recent legislation that was introduced on made in America—because I think you are right: that is an opportunity. And our Level the Playing Field Act as well. And then, in our new bill, we are working on leveling the playing field.

This is a really important issue. I want to back up just for a second and talk about how do we ensure that we can be competitive? There has been a lot of good discussion about the tax laws, but I think there is a new emerging consensus that we need to think about competitiveness in terms of what is called "the industrial commons," where you have manufacturers, you have suppliers, you have inventors, and you have skilled workers kind of all together.

And although, as a Republican I am always hesitant to talk about the government being too involved in our market—which has ultimately been very successful in making us strong, with an economy a lot of people envy—I think we have to realize that those kinds of industrial commons that have all those folks together really do matter.

Think of Ohio and Michigan, in terms of the auto industry. Or think of Boston in terms of the pharmaceutical industry.

Here is an interesting statistic: U.S. R&D expenditures in China have grown 13.6 percent annually on average since 2003. In the United States, it has been just 5 percent. So what that means is, the manufacturing is going on in China. What happens? The R&D starts to go over to China. So this is all connected.

And I guess I would just ask my three Ohioans about this notion of keeping manufacturing, innovation, skills, as was just said by Jay—and I agree with Senator Menendez on this: the skilled worker is a critical part of this. And we have some great legislation on that as well.

But you guys agree—my Ohio friends here—that our manufacturing industry and its workers were better off with a healthy industrial commons with a strong supply network, lots of R&D investment, and skilled workers.

Mr. BLATT. Well, this Ohioan from Chillicothe, Senator, does agree. All roads lead through Ohio, I realize, and thank you for that question.

And I will also say that Senator Wyden, the chairman, mentioned that our goal should be to out-compete China when it comes to research and development. I could not agree more. And I think that this is incredibly important, and an incredibly important topic.

Senator PORTMAN. Great. Thanks.

Donnie? Jon?

Mr. BLATT. Yes, Senator Portman; thank you for that. And I appreciate your comments on that. I could not agree more with what you have said in that vein, and definitely this Ohioan, as well as Jay, says "yes" to that.

Senator PORTMAN. Great.

Jonathan, thoughts?

Mr. JENNINGS. Yes; absolutely. And this Ohioan from Steubenville is also fully aligned with the comments. And it is not only for the workers, the consumers, but for America. At the end of the day, we need to make it all healthy.

And to your point, this is one of the ways for us to get there. Thank you.

Senator PORTMAN. Let me ask a specific question. We talked a lot about the importance of the TCJA to investment, and jobs, and I could not agree more with that. With regard to amortization of R&D expenses, we had a good discussion about that. I think that is a big mistake. It is going to have a detrimental impact on innovation, of course.

And so we have to be sure that domestic R&D, not amortizing over 5 years but being able to fully expense, stays in the law. And I am not even going to ask you that question because you all seem to agree with that.

But there is another one that is similar, and that is with the deduction of interest under 163(j). The legislation limited the deduction of business interests based on earings before interest, taxes, depreciation, and amortization, or EBITDA. But at the end of the year, depreciation and amortization will be removed from further limited deduction. You all know about this.

It is interesting, because right now a lot of these companies have taken on debt. So it makes it even more difficult to recover from the pandemic. It increases taxes, basically, by limiting the deductibility of interest.

Can you comment on that briefly, Dr. Hanlon and Mr. Timmons?

Dr. HANLON. Sure; I will start. So you are exactly right. This limitation at section 163(j) now is supposed to move to a limitation based on EBIT and not EBITDA, and will become more binding, meaning that more companies will be limited in their interest deductions.

And you know, I think the important thing about this is that that limitation can be more binding just by making another investment, not by taking on more debt. So if depreciation is not added back to that calculation, that makes the interest deduction limitation more binding. And again, that can happen with a strictly equity-financed investment.

So I think you are exactly right.

Senator PORTMAN. Mr. Timmons?

Mr. TIMMONS. Yes, I think you are correct as well, Senator. Look, we are a highly capital-intensive industry, part of the economy.

And there are times when we need to borrow so that we can invest in new plants and equipment and base that on what our expectations are for future success.

Increasing the costs of anything as it relates to doing business here in the United States, does harm our ability to compete and succeed in the global economy. The——

The CHAIRMAN. We have 16 Senators to go.

Senator PORTMAN. Thank you, Mr. Chairman. I appreciate it. Thank you, guys.

The CHAIRMAN. Thank you both.

Up next is Senator Carper.

Senator CARPER. Thanks, Mr. Chairman.

To our witnesses, welcome. It is great to see all of you. I just want to say to Jay Timmons, and everybody at NAM, we passed legislation last year, strongly supported by NAM, and I just want to thank you. The greatest challenge we face on our planet is climate change; too much carbon in the air. And one piece of legislation, which NAM strongly supported, was a phase-down of hydrofluorocarbons, HFCs. It is worth about half a degree Celsius, which is a huge huge advance. It would never have happened without the support of NAM, Jay, so I just want to say "thank you."

I want to say to our friends at Ford, Ford knows better than anybody that the greatest source of carbon emissions on our planet comes from mobile sources, about 28 percent. The power industry in our country is about 27 percent, and industrial emissions are about 23 percent. But the biggest one of all is the emissions from the mobile sources.

I just want to salute Ford for the great leadership that you are providing in trying to gather a whole bunch of auto companies together in common cause with California, and a bunch of States including Delaware, to join together in reducing global gas emissions from our mobile sources in the coming years.

In that vein, I joined Senator Alexander, Lamar Alexander, last year in amending and extending the 30C. This is a question for Mr. Jennings.

I joined Senator Alexander—sadly, he left us—but we joined forces in amending and extending the 30C investment tax credit for alternative fuel vehicles through the Securing America's Clean Fuels Infrastructure Act. And that legislation, Mr. Jennings, that legislation will better incentivize companies to make investments today in the construction of clean fuel vehicle infrastructure nationwide. It is one thing to build the vehicles. It is another thing to get people to buy them. Unless they have the ability to charge batteries, they are not going to buy them.

So, Mr. Jennings, can you talk a little bit about the importance of tax incentives and amendments to the tax code like our Securing America's Clean Fuels Infrastructure Act to encouraging domestic manufacturing of zero-emission vehicles? What more should we be doing to leverage the tax code to reduce emissions from mobile sources and encourage greater innovation in this space? Thank you.

Mr. JENNINGS. Yes. Thank you for the question. I am absolutely, fully aligned that climate change is impacting us all. I appreciate the comments on the efforts that Ford is doing, with us, again,

being fully aligned with the Paris Accord and also the more stringent greenhouse standards in California.

It is critical for us to continue on and have those tax incentives to give us the opportunity to do the R&D, to ensure that we are continuing on the strategy and on the track to be able to be carbon-neutral by the year 2050.

So that is one of the key areas where we would use the revenue that you referenced, along with the other incentives to, again, put us on that path to be able to achieve that by 2050.

Senator CARPER. My colleagues, I was struck by the witnesses today, a really excellent panel. But there is a lot of interest not in raising taxes, not raising revenues, but we are looking at just an avalanche of debt. I am a recovering State Treasurer from Delaware. We are looking at an avalanche of debt.

We have spent money—the last administration and this administration a little bit remind me of drunken sailors. I am a retired Navy Captain. I have seen drunken sailors spend money, and I am reminded a little bit of that today—and the last administration as well.

There used to be a Senator, Russell B. Long—I think he was from Louisiana. He might have been head of the Finance Committee. But he used to say, "Don't tax you; don't tax me; tax that fellow behind the tree."

And nobody wants to pay more taxes—corporate taxes, personal taxes. But I just would remind us all, about a month ago the Government Accountability Office came out with their high-risk scores—they do this every 2 years—high-risk ways of wasting money. One of the things they called for, again, is making sure that we go after the tax gap. The tax gap is money that is owed to the Treasury. We know that it is owed, and we are not collecting it. And the folks at the IRS have asked us to be responsive to the question of the IRS funding. For the money that we provide, for every dollar—I forget what it is, but it is something like, for every dollar we provide in revenues, or for staffing, for technology at the IRS, they collect something like $5 or $6 in revenue.

And while nobody wants to pay more taxes, I think what is more compelling is when we pay our share, our fair share, and we have other folks, other businesses, that are not. I would ask you to keep that in mind.

Lastly, I probably do not have the time to ask this, but I will for the record. I am going to ask you all, for the record, to let me know where you think this panel agrees. Where does this panel agree with respect to tax incentives that are needed to strengthen, to enhance domestic manufacturing in this country? Where do you agree? Just give me one idea.

And I will stop with that. Thank you very much, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Carper. Fifteen Senators to go.

Senator Lankford?

Senator LANKFORD. Mr. Chairman, thank you. Let me get a chance to be able to jump right into this. Obviously, an issue that has come up over and over again is our supply chain. We are talking about manufacturing, and that is going to be a locomotive that is coming towards us on our supply chain in the days ahead.

So whether it is steel, whether it is producing automobiles, whether it is producing medical equipment, whether it is energy production, supply chain matters on this. That is rare earth minerals, critical minerals, occasionally conflict issues from the Congo in cobalt and lithium and such.

So one of the questions I have is—we have multiple of those minerals that are here. When you start dealing with supply chain issues—and I can bring this up to Mr. Jennings at this point because I know, obviously with a vehicle, you have a lot, especially if you are heading towards an electric vehicle, a lot of issues there.

What can we do in the tax code that you see at this point to attract some of those suppliers to be able to come to the United States? Or what are the barriers that are actually pushing some of that development outside the United States that make vehicle production here, or a lot of our manufacturing, vulnerable to supply issues?

Mr. JENNINGS. I really appreciate the question, and you are spot-on in reference to not only the overall vehicle assembly, but as you get further into the value chain, those raw materials; how do we ensure that we are able to get those localized?

And it goes back to—and I have had multiple discussions with suppliers—making the tax code more incentivized for them to come here, because the true benefit is in that true vertical integration, where it is not just the vehicle itself but all the way through the value chain.

Senator LANKFORD. So is there anything in particular in the tax code that you see right now that is a detriment to actually coming back, or a disincentive to actually bring some of that manufacturing supply chain here?

[Pause.]

Senator LANKFORD. You will have to talk louder, or turn your mic on——

Mr. JENNINGS. I am sorry; that was my fault. That was my fault. I think what we need to do is, again, retain our current competitive tax rate and ensure that we do not step backwards. Because we know that there are other nations that are competitive in that space.

And in speaking with our suppliers, because of that competitiveness, they are actually looking elsewhere outside the U.S. So we need to maintain that competitive tax rate to ensure that we maintain it here in the U.S.

Senator LANKFORD. Okay.

Mr. Timmons, let me ask you that same question as well: things that you see that may be a challenge in our tax code to bring in some of those suppliers and to be able to bring those back to the United States to decrease our vulnerability in mineral production and in some of our basic supplies.

And then also, there is this ongoing conversation about tariffs as well, which is basically a tax issue. If you would be able to make a comment about that. There have been some folks who say, just raise tariffs on everyone else and suddenly, miraculously, they will come back.

We have not seen that to be completely true. What are the tax barriers there to actually coming back?

Mr. TIMMONS. Thank you, Senator. You know, I think Mr. Jennings really hit the points on the tax code. Let me offer one other perspective, and that is: permitting reform.

So some of those critical minerals that you are talking about run into issues when it comes to prompt permitting. And sometimes it can take 3 to 4 years to get the permits in line to do what we need to do to extract those.

As far as tariffs go, obviously they distort the cost of goods and services. At some point, though, there has been some rationale for certain tariffs that have been applied to attempt to level the playing field against, say, countries like China.

What we need to avoid, Senator, is we need to avoid imposing tariffs that would end up causing retaliatory tariffs on our goods leaving the United States. It makes us less competitive. It makes our products less desirable around the world.

We want to be able to reach the 95 percent of customers who live outside of the United States. We need competitive economic policies here at home to grow domestic manufacturing, and we need trade agreements that are enforceable that enable us to reach other markets.

Senator LANKFORD. One of the things I wanted to bring up—Senator Portman brought it up as well—is the 163(j) provision, only because we have changes that are coming on that soon.

What effect does that have for manufacturers and suppliers wanting to be able to come to the United States, to see things like that change? It is a pretty dramatic change at this point. Does that encourage or discourage investment coming back to the United States when they see temporary tax policies?

Mr. TIMMONS. Are you addressing that to me, Senator?

Senator LANKFORD. Yes, sir.

Mr. TIMMONS. Yes. Well, the change that is coming into effect—if we do not do something about it, if Congress does not do something about it—would discourage investment in manufacturing and make it more expensive, obviously, to borrow money.

So we are pleased to see the legislation that is being considered before you all.

Senator LANKFORD. And we are as well. Hopefully we will be able to get that done.

Mr. Chairman, thank you.

The CHAIRMAN. Senator Cardin?

Senator CARDIN. Thank you. Let me thank our witnesses. This has been an incredible panel, and I want to thank you, Mr. Chairman and Ranking Member, for conducting this hearing.

Manufacturing is critically important to Maryland and our Nation. Maryland has over 4,100 companies that participate in manufacturing, and over 112,000 jobs. And in the auto industry, we have heavy trucks at Volvo that employ over 1,500 people.

So this hearing is very important to me. And I am certainly going to be supportive of changes in our tax code to make domestic manufacturing more competitive, whether it is to deal with innovation and research and development, those provisions, or whether it is industry-specific.

But I just want to make one observation. We talk about having a competitive tax structure, and it is virtually impossible for us to

have that if we do not harmonize with the rest of the world. And what I mean by that is, we raise most of our own revenues through income taxes, not through a consumption tax, which is what the rest of the world does. And consumption taxes are border-adjusted, whereas income taxes are not border-adjusted, putting U.S. manufacturers at a distinct disadvantage.

So—and we talk about having predictability in our tax code. Let's be reasonable about this. The tax code has been changed so many times over the last couple of decades, and don't we expect whatever changes were made in 2017 to be changed again?

So I just really want to put on the table that we should be talking about how we can take advantage of the American reliance on governmental services, and have not only competitive but low tax rates compared to the global community. And that means harmonizing and having a progressive consumption tax, or raising some of our revenues here in the United States.

And as the chairman knows, and the ranking member knows, I put that on the table, and I will continue to raise that issue because I think that is the way that we could have the most competitive tax code from the point of view of the issues that we have talked about today.

The second point I want to make—and I am going to go to the floor in a few moments to speak about Mrs. Guzman, who is the Administrator of the Small Business Administration. I hope as we talk about how we can help domestic manufacturing, we recognize there are special needs for the smaller companies, which are where a lot of our job growth takes place, and the innovation takes place.

We need to make sure that we do focus on the needs of smaller companies, smaller manufacturing companies, as we look at the changes in our tax code.

With that, Mr. Chairman, I am going to yield back my time, and I am going to the floor to speak for Mrs. Guzman, and give you a few extra minutes for other colleagues.

The CHAIRMAN. Thank you, Senator Cardin.

Senator Young?

[Pause.]

The CHAIRMAN. Senator Young? We do not have Senator Young. Then do we have Senator Brown?

[Pause.]

The CHAIRMAN. Senator Casey?

Senator CASEY. Thank you, Mr. Chairman.

The CHAIRMAN. Here is Senator Casey.

Senator CASEY. Mr. Chairman, thanks very much. I want to thank you for this opportunity. Let me turn my volume up here. And I thank the witnesses.

I will just have maybe two questions for one witness, and I will maybe submit some others for the record, but I wanted to start with a question for Donnie Blatt. I appreciate his work with the steelworkers, who obviously have a big presence in my home State of Pennsylvania. And I know they care deeply about the manufacturing jobs that we hope to create. And we have suffered through so much loss.

I was just looking at some of the numbers. By one estimate, in Pennsylvania between January of 2005 to January of this year, we

have lost over 147,000 manufacturing jobs. And that is on top of the several hundred thousand jobs we lost in the 2 or 3 decades before that.

So I wanted to ask Mr. Blatt about, first of all—in your testimony, you discussed the power of Federal procurement and the ways it can be used to support American manufacturing. I am also glad to see the administration is focusing on supply chain security, and on revisiting rules around buy American, which are often very complex and riddled with loopholes, including weak rules of origin.

I have legislation to establish supplemental rules of origin for nonmarket economies like China. This will close a back door into our trade agreements, and also into government procurement, for goods that are not produced under competitive market conditions.

So I would ask Mr. Blatt, can you discuss what a measure like that could mean for workers, and particularly steelworkers?

Mr. BLATT. Yes, absolutely, Senator Casey. And thank you for that question.

Look, we have dealt with unfair trade agreements, as people all over the Nation have, probably more than anyone else. And our organization believes that these trade agreements should reflect our values. And we should make sure that these nonmarket economies like China do not have these back doors that they can get into to steal our jobs out of this country.

You know, the buy American provision that we have; again, it creates jobs here in this country. And that is what we are all about. We want to make sure that we create as many jobs as we can to get our manufacturing sector back up to where it should be. And as we do this, it is going to strengthen our communities and strengthen workers, and make sure that our families are taken care of. So again, trade agreements that reflect our values—and that is, taking care of American industry.

Senator CASEY. I appreciate that.

I wanted to talk to you about two bills that focus on some of these challenges that we have when it comes to offshoring jobs and the manufacturing impact on workers. One particular proposal I have would establish automatic economic and fiscal stabilizers to communities that are impacted by trade or by industry transition, or huge job loss. I know that there are communities that fit that description in Ohio, plenty of them in Pennsylvania, really over my lifetime, but especially the last 25 years.

This particular bill would provide $100 million in direct economic support to regions to implement both an economic plan and also to implement support for workers and small businesses. So we have one proposal that focuses on regions that have suffered those kinds of losses by way of transition or job loss.

The second bill I have is the Payback Act, which would direct the revenue—the revenue derived from antidumping and countervailing duties—back to communities impacted by trade.

I would just ask you to comment on those proposals, and then we will wrap up and give time back to the chairman.

Mr. BLATT. I appreciate that. And I remember Mr. Jennings talking about being from Steubenville, OH. I am also from that area in southeast Ohio, and if you look in that area, at one time Pittsburgh Steel employed about 3,000 people. The Ormet Corporation

that I came out of employed 2,250 people when I was hired in 1979. And right beside that plant was the Consolidated Aluminum plant that had 1,700 people who were employed in that as well.

So if you just talk about one area within 50 miles of each other, all those plants are gone, and all those jobs are lost. And so that would be a big boost to that region. It is not unlike any other regions that you have in Pennsylvania or all over this country that need that help. And it is what we ought to be doing for our workers and for our communities in this country.

Senator CASEY. Mr. Blatt, thanks very much. And this is probably the first hearing I have ever been in ahead of Senator Brown in questions. Thank you.

The CHAIRMAN. Very good.

Senator Warner?

Senator WARNER. Thank you. Thank you, Mr. Chairman, and thank you for holding this hearing. And I appreciate the fact that both you and Senator Crapo have already raised the issue of protecting critical supply chains, particularly advanced technology like semiconductors.

I know it was not too long ago that, if we talked about government investment in this category, it would sound like it was industrial policy, and that was a bad name, a bad word. But I think we have to understand that we have to use the tax code and, in certain places, direct government investment to be competitive.

I like to point out, way back in 1979 when the U.S. Government put about $4 billion into a new area called GPS, that really has revolutionized how our economy works—that $4 billion being equivalent to $15 billion today.

I think, as we think about areas where we, America needs to lead, the semiconductor industry is a clear example of that. And unfortunately, we have seen America's share of the semiconductor industry go from 37 percent in 1990, now projected to be about 9 percent by 2030. In the meantime, China has gone the absolute opposite, from about 12 percent of the market to 30 percent expected in 2030.

China, as a matter of fact—as the chairman and I know, sitting on the Intel Committee—is looking at a $150-billion-plus investment in semiconductors.

So there is legislation that was included in the NDAA, the so-called CHIPS Act that Senator Cornyn and I think will probably speak to it. A number of members on the committee have been supportive of it. But I wanted to ask Mr. Davis, this kind of all-of-the-above, both tax incentives as well as direct government investment in semiconductors, how critical is that for not only Intel, but for maintaining America's position in the global challenges around semiconductors, which we all know is "the sauce inside," to paraphrase your logo, of virtually everything that happens in advanced manufacturing and technology development.

Mr. DAVIS. Thank you, Senator Warner. And thank you for your leadership on the CHIPS Act as well. I appreciate that.

You know, I think you pointed out the salient statistic, which is, there is policy activity that is driving a shift in the U.S. competitiveness for attracting semiconductor manufacturing, and semiconductor investment overall. And if you look at China, Taiwan, South

Korea, all of the areas where there has been substantial growth in the percent of semiconductor manufacturing taking place, it has been with a coordinated set of policies to induce investment in those countries.

So it is very much, in some ways, a policy of those countries that semiconductors are so fundamental to their economic base and to their national security that they are going to do things beyond normal tax policy to incent. And really, the U.S. has not taken that position.

And so I think you can point to the success of others as a way of perhaps pointing to—if we took a more direct focus on everything from the grants that have been discussed over time and the investment tax credit that has focused on this, this is really a direct response to what is happening in the rest of the world.

Senator WARNER. Thank you. And I hope—again, I think we will be able to work on this, and I am glad we got it into the NDAA.

I want to turn to my friend Jay Timmons for my last question. And this is a subject, Jay, you and I have worked on and talked about a long time. I frankly think if we look back over the last year, the government, under both the last administration and this administration, has stepped up in a major way to deal with COVID.

The only challenge, I believe—or the biggest challenge, actually—is we have spent about $5 trillion but not nearly enough on workforce retraining. I think a number of the jobs that we have lost are not coming back. This is a move toward a digital economy.

You and I have talked—and I would like you to comment on this. I think we need to create the equivalent of an R&D tax credit for companies that invest in their workforce to increase the quality of that workforce, to alleviate the challenge we have right now where a company, a manufacturing company, goes out and spends $5,000 on a robot, and gets an R&D tax credit. The robot is an asset you can put on your balance sheet. And if you are a public company, you can report it. If you make those same investments in workers to be more efficient, and steelworkers to be more efficient than the robot, you do not get any of that tax accounting or reporting treatment.

Jay, can you speak to how we can make sure that we incent companies with the tax code to make that upscaling investment in the workforce?

Mr. TIMMONS. Just a couple of—I know we have just a couple of seconds, Senator. We have been working on this since "communities and schools" days, and thank you for the question.

So just a brief synopsis. A tax credit in this area can really play an important role in helping train the workforce of tomorrow. We did make recommendations last year on the supply chain. And we know that high-quality "earn and learn" models are really essential to staff manufacturing facilities efficiently.

Deferring the costs associated with these programs, a new deduction could be put in place for items such as—and you mentioned some of them—but items like the initial setup costs, cost of wages for learners and trainers, other direct costs associated with these types of programs.

And then secondly, I would say that employees should not be penalized for investments that employers make in their skills. There is guidance right now from the IRS that allows only $5,200 or so for educational assistance to an employee to be excluded from an employee's gross income. And we think that that should be at least doubled to about $11,500.

The CHAIRMAN. Mr. Timmons, I am very interested in this subject; we just have to move on. Thank you, Senator Warner.

Mr. TIMMONS. Understood. Thank you.

The CHAIRMAN. Senator Young?

Senator YOUNG. Well, thank you, Mr. Chairman. Thank you, Ranking Member, for holding this important hearing. And I also want to thank our five witnesses for lending their time and expertise to the whole committee today.

We are looking forward to building a post-COVID economy and strengthening, even supercharging, our manufacturing sector. And it is critical that, as we think about this, we identify as many ways as possible to increase investment in research and development in this country.

To that end, yesterday I reintroduced a piece of legislation, the American Innovation and Jobs Act, along with Senator Hassan. This would expand the R&D tax credit for innovative startups and ensure companies can continue to expense R&D costs in the year in which they are incurred.

I want to thank Senators Portman and Sasse and Cortez Masto for joining Senator Hassan and me in advancing this important bill.

Mr. Chairman, I would like to request unanimous consent to insert in the hearing record a letter of support for this bill from Mr. Steve Ferguson, who is CEO of Cook Group, a medical device manufacturer in Bloomington, IN; and from Mike Mansuetti of Bosch North America. They have an electric drive facility in Albion, IN.

The CHAIRMAN. Without objection, so ordered.

[The letters appear in the appendix beginning on p. 104.]

Senator YOUNG. Thank you.

Mr. Jennings, since 1954 companies have been able to deduct their R&D expenditures as they incur them. But beginning in 2022, as I know was mentioned earlier, companies will be required to spread out their deductions over a number of years rather than deduct them all in the current year.

If the United States does not preserve immediate expensing, it will become one of only two countries in the industrialized world—the other being Belgium—that require the amortization of R&D expenses. To continue America's global leadership, we have to ensure the next generation of cars, computers, med devices, and other cutting-edge technologies is developed and produced here in the United States.

So, Mr. Jennings, if companies are unable to expense their R&D costs in the year they are incurred, how will that affect Ford's ability to invest in tomorrow's technologies?

[Pause.]

Senator YOUNG. Mr. Jennings?

Mr. JENNINGS. Yes. For some reason, I get double-muted. Hopefully you can hear me now.

Senator YOUNG. Yes.

Mr. JENNINGS. First of all, Senator Young, I appreciate your leadership in this space, along with Senator Hassan. It would specifically affect Ford. For example, we spent $5 billion the past 2 years straight. The ability for us to deduct those expenses allows us to prioritize R&D going forward.

So it is critical that we continue on with the ability to deduct that, because for that R&D, it puts us in a noncompetitive position globally.

Senator YOUNG. And since you would be in a noncompetitive position globally, I presume that also means that your inability to immediately deduct these expenditures would come at the expense of some manufacturing jobs here in the United States and throughout your broader supply chain. Is that indeed the case?

Mr. JENNINGS. Absolutely. Again, with the total of $5 billion, that has a substantial impact to our business plan and bottom line. So it is critical for us to be able to continue to deduct those expenses.

Senator YOUNG. Okay. Well, I know Hoosiers certainly care about that.

Mr. Davis, in the 21st century, the U.S.'s share of R&D investments has fallen dramatically from 39 percent to 29 percent. Meanwhile, we continue to face stiff competition from countries like China. China has aggressively focused on growing its R&D sector and, by some estimates, will surpass American R&D investment just by the end of this decade.

So, Mr. Davis, in your testimony you rightly point out the danger of an anemic domestic R&D sector, not only for economic loss but as a genuine national security risk. If we fail to take our competitor seriously, I have grave concerns about the ability of the U.S. to maintain our role as a global leader in this regard.

So what signal, Mr. Davis, would an expansion of permanent expensing give the companies that are planning their investments over the next few years? Speak to that issue, please.

Mr. DAVIS. You know, I think when it comes to tax policy, predictability and competitiveness cannot be overstated. And when you look at R&D, if we do not go back to deductibility, we will be completely out of step from a competitive standpoint with the rest of the world.

It is handing our competitors overseas, essentially, a gift to compete more effectively with the U.S. and to attract more R&D offshore. And I think one of the reasons why there is great bipartisan support for this—and we appreciate your support, Senator—is, that just makes no sense.

Senator YOUNG. Well, thank you so much, sir. And as the leader of Intel, we worked with your team as we have polished this legislation. So I am aware that passing the American Innovation and Jobs Act would help ensure that Hoosier companies, like our auto assemblers that have been seeing shortages of semiconductors, would have sufficient and steady access to these important components in the future, thus saving Hoosier jobs and jobs for other Americans.

So, thank you so much, Mr. Chairman. My time has expired.

The CHAIRMAN. Thank you, Senator Young.

Senator Whitehouse?

Senator WHITEHOUSE. Thank you very much, Mr. Chairman. If I may, I would like to go back to Mr. Timmons.

Mr. Timmons, last year the National Association of Manufacturers was identified as the worst obstructer of climate action in America. I doubt that was your favorite day. I am also prepared to concede that I actually think the Chamber of Commerce earned that distinction more than the National Association of Manufacturers did. You were in a virtual tie with the Chamber.

But never mind that. My question is, what is the National Association of Manufacturers' position on climate legislation in Congress today?

Mr. TIMMONS. Senator, thanks for that question. This is not a—this is not an unexpected question. You and I have had these conversations before, although I have to say, I have not actually seen that study that you cite. So, look, as you and I have discussed before, manufacturers are very committed to the cause of climate change, and to decarbonizing our environment.

In fact, we have shared this with you and others, "The Promise Ahead," which is our plan on taking action on climate change. And it is true that we have made some great strides as a Nation to reduce emissions that cause climate change. But we have done so oftentimes in spite of policies that come out of Washington, and not because of them.

We have really spent far too long, I think, apportioning blame over climate change, and really too little time working on solutions. And that is why we do call for action, and that is what this plan is all about.

Senator WHITEHOUSE. So let's talk about solutions for a moment.

Mr. TIMMONS. I am happy to do that, sir.

Senator WHITEHOUSE. First of all, do you see a way forward to solve the climate crisis and avert climate pandemonium without Congress stepping in in some significant way?

Mr. TIMMONS. So, look, I think—I think we need a global solution that is binding. And this is something you and I have talked about before as well. And if we can get a comprehensive climate treaty, that really is the foundation of the U.S. response to climate change, to prevent carbon leakage and solve the underlying problems. I think that is where we need to go. And I look forward——

Senator WHITEHOUSE. Which Congress would then need to enforce by laws, correct? That's the way those things work.

Mr. TIMMONS. Sure.

Senator WHITEHOUSE. So now we have gotten through the predicates into the punch line here. Assuming that there must be significant climate legislation in Congress, and that NAM would support that as part of your plan, what are the key attributes that that legislation should have in order to protect and expand domestic manufacturing?

Mr. TIMMONS. Well, as I said, it needs to be enforceable globally. We cannot do this alone.

Senator WHITEHOUSE. Border adjustments?

Mr. TIMMONS. So we need to be able to enforce actions of our trading partners. I think also, Senator, we have some environmental goods agreements with Europe that we have talked about

for a while. We would like to see that get enacted. And I also think the whole purpose of today's hearing has to do with tax policy and how that can incentivize our ability to do all of the things that we have talked about, not only investing in hiring and raising wages and benefits, but also being able to take on new technologies.

The R&D tax credit, for instance, is key to helping us create new technologies that will help us not only clean the air and the water, but decarbonize the environment. Those are things that we know—quite frankly, we know where the world is headed. We know where we want the world to head.

Manufacturers are a key to that. And we have been able to make a lot of progress in the last few years, but I believe tax policy and enforceable trade agreements—pardon me; yes, enforceable trade agreements—but also enforceable climate agreements, are critical to our ability to do that.

Senator WHITEHOUSE. As we try to figure out how to put enforceable climate agreements and enforceable trade agreements together, one of the things that I often hear is that if you do not have the capacity for the United States to apply border adjustments, and you have other countries that are not in step with our climate strategy, you could have leakage of jobs for the very artificial reason that they have put themselves out of step with our climate strategy. Do you agree with that way of looking at the problem that you described?

Mr. TIMMONS. So, Senator Cardin also mentioned that during this hearing. And we are happy to sit down and talk with you and your colleagues about any proposals that will help us incentivize manufacturing in the United States to meet the goals that we share on cleaning the environment.

Senator WHITEHOUSE. But you concede that border leakage is a problem, a potential problem?

Mr. TIMMONS. Yes.

Senator WHITEHOUSE. Okay.

Mr. Chairman, I think my time is just out, and I will yield back. And I thank Mr. Timmons for his conversation with me.

The CHAIRMAN. I thank my colleague.

Senator Hassan, I have to go vote. Why don't you ask your questions, and if Senator Crapo comes back, he will chair until I can get back. All right? So we will recognize you at this time.

Senator HASSAN. Thank you so much, Mr. Chair. I greatly appreciate that. And I certainly appreciate all of the witnesses. And I am grateful for your testimony.

I am going to follow up on a number of questions you have already heard from Senator Young and others about the importance of research and development tax incentives.

So, Mr. Timmons, yesterday I introduced the bill that Senator Young talked about. It is a bipartisan bill with him and Senators Cortez Masto, Portman, and Sasse. It would strengthen research and development tax incentives for domestic manufacturers and innovative startups.

Our bill would expand the R&D tax credit for new and small businesses by doubling the cap on the startup credit. The bill would also strengthen vital R&D incentives for the manufacturing sector by preserving full R&D write-offs. Together, these provisions will

help secure U.S. supply chains, boost the economic recovery from COVID–19, and increase our competitiveness with China.

Mr. Timmons, in your testimony you mention the importance of our bipartisan bill for domestic manufacturers. Could you elaborate on how strengthening R&D tax incentives would help secure our manufacturing supply chain?

Mr. TIMMONS. Thank you very much, Senator. I certainly can, and I thank you so much for your leadership on this very critical piece of legislation, and the leadership of Senator Young and the co-sponsors that you mentioned as well.

Put very simply, research and development is the lifeblood of manufacturing. And manufacturers, as you have already heard today, perform nearly two-thirds of all private-sector research and development in the United States. And that is the most of any sector.

There is fierce, fierce global competition for research and development. And right now, the United States is, frankly, woefully behind the world when it comes to research and development tax incentives. And I worry about amortization.

And as you have already heard, if we allow that to occur, the United States and Belgium would be the only countries that require amortization. I think Belgium is a beautiful country, but I do not think that we want ourselves to be in the same economic class, or the same economic policies as Belgium.

If you look at a study by Ernst and Young, it finds that amortization would reduce R&D spending by about $4 to $10 billion a year. And you have already heard from Mr. Davis that each billion dollars of research and development investment lost could cost about 17,000 jobs right here in the United States.

So we need to get back on track. We need to get rid of the amortization clause. Your bill will help ensure that the tax code continues to support innovation. And it is key to helping America be a competitive location for onshoring.

And we really do appreciate the fact that this is bipartisan, and we really look forward to working with members on both sides to advance this bill and get it signed into law.

Senator HASSAN. Well, thank you, Mr. Timmons. I appreciate that. I want to give Mr. Davis and Mr. Jennings a chance just to comment on it too.

So, Mr. Davis, I would like to ask you about the importance of R&D tax incentives for our country's production of semiconductors, which are obviously critical to our economic and national security. Your testimony discusses how the bipartisan R&D bill would support domestic semiconductor manufacturing. So could you just explain to the committee how these incentives in the bill would promote U.S. leadership on semiconductors?

Mr. DAVIS. Sure. Thank you. First off, thank you for your leadership and for the bill you put forth, which I think is so critical to really avoiding regressing on R&D. The U.S. has been a true leader in R&D and, yes, the rest of the world is investing more over time. But our leadership reflects the 67 years of our treatment for R&D, which understands that encouraging it through deductibility leads to a very positive outcome. And I do not see any reason why we would want to go from what is seen as the world's standard today

to the most regressive treatment of R&D going forward. And we thank you for your support.

Senator HASSAN. Well, thank you very much for that comment. And, Mr. Jennings, could you explain to the committee how strengthening R&D tax incentives, as we do in the bipartisan bill, would help promote domestic production of advanced batteries?

Mr. JENNINGS. Absolutely. And again, Senator Hassan, we appreciate your leadership in this space, along with Senator Young.

As I had mentioned, $10 billion just in the past 2 years, in reference to R&D research within Ford. The ability to have that immediate deduction helps us to prioritize as we continue forward. And we need that to remain competitive globally.

Senator HASSAN. Thank you very much.

And I do not see—oh, there. I do see Senator Crapo, so I will yield back to Senator Crapo. And thanks to all the witnesses for your testimony.

Senator CRAPO [presiding]. Thank you.

And next is Senator Cortez Masto.

Senator CORTEZ MASTO. Thank you, Senator Crapo. Thank you for this conversation. It has been very enlightening,

Let me start with Mr. Jennings, and maybe Mr. Davis, because I think going beyond just incentivizing domestic manufacturing to mining and production of raw materials is a conversation worth having.

In Nevada, lithium mining is occurring. We have companies that either have to obtain it or are seeking to mine lithium there. Being able to obtain these critical minerals and resources domestically, we all know, will help incentivize domestic manufacturing and technology. And it will be key to meeting the rapidly growing need and balancing our environmental concerns at the same time. It can be done.

But let me ask you, Mr. Jennings and Mr. Davis, what incentive strategies do you think we can explore to ensure that these credits are available for efficient and safe raw mineral extraction, and production as well.

You have talked about tax credits for other things, but what about the actual extraction? Have you any thoughts about that?

Mr. JENNINGS. Senator Cortez Masto, I can go ahead and start. We have looked at that because, again, we need to not only look at the vehicle assembly, but all the way through that value chain, because that is how we remain competitive.

So not only are we looking at those credits—again, I would call that tier one and OEM level—but all the way through that entire value chain to ensure that we are competitive, again, globally.

Senator CORTEZ MASTO. Thank you. Anyone else? Yes?

Mr. DAVIS. No; I think I agree with Jonathan's points entirely.

Senator CORTEZ MASTO. Yes. And I do too. I think the conversation we are having today is crucial if we are going to really bring back that manufacturing, bring back and make sure our workforce is strong and a part of this new future innovation economy. And we need to make that investment. I agree with my colleagues that that definitely needs to occur here in the United States at so many levels, and that is why I so appreciate this conversation.

Let me just say also, I am so happy to be on the bill, The American Innovation and Jobs Act, with my Senator colleagues here that have talked about it.

But, Mr. Timmons, let me ask you this. We have a few small companies leading research and development in Nevada, like Dragonfly Energy, and they assemble battery packs for RVs and for domestic manufacturing of the next generation of lithium-ion batteries in Nevada.

And we have talked about some of the options that are available to them through The American Innovation and Jobs Act, but what other options should we be exploring here through the tax code to support small businesses and entrepreneurs to be able to develop new technologies? Do you have any thoughts there?

Mr. TIMMONS. Thank you for that question, Senator, and also again thank you for your leadership on the R&D bill. We appreciate that.

You have a lot of small and medium-sized manufacturers in Nevada. Click Bond, for instance, is on my board of directors, and they too innovate on new solutions for fasteners for aircraft and other products like that.

So I think for small and medium-sized manufacturers, we are going to need to look at—and I realize it is not the focus of today's conversation—but we are going to have to look at making the pass-through rates more competitive. Small and medium-sized manufacturers are at many disadvantages, not the least of which is an outsized burden when it comes to the cost of compliance for regulations, almost twice as much as larger manufacturers.

They also find themselves with a less competitive tax code. The pass-through rates are different for them, as you all know. And I welcome having a conversation about that in the future, because that is where the job creation is really the most energizing and robust in this country: small and medium-sized enterprises. And we need to do everything we can to incentivize them through the tax code to be able to do exactly that, and to invest more in this country.

Senator CORTEZ MASTO. Thank you. I look forward to the work. Thank you all.

Senator CRAPO. Thank you very much.

Next is Senator Daines.

Senator DAINES. All right, Ranking Member Crapo. Thank you.

Senator Stabenow and Senator Manchin and I recently introduced a bipartisan bill called the American Jobs in Energy Manufacturing Act. It dedicates $8 billion to a modified version of the section 48C advanced energy manufacturing tax credit that will track clean energy manufacturing and recycling companies in areas with high unemployment, and in places where coal mines or coal power plants have closed.

Expanding this credit will provide a powerful tool to help create jobs in coal- and energy-producing communities in Montana, as well as across the country. And it will ensure these workers continue to play a big part, as they should, in American energy production.

However, it is also important that we consider how section 48C would interact with other broader provisions, including several Tax

Cuts and Jobs Act provisions that are set to expire this year, if no further action is taken.

Professor Hanlon, how would you expect a targeted provision like section 48C to interact with R&D expensing, the current EBITA calculation of the limitation of interest deductibility, bulk depreciation, and would a failure to extend these provisions go against the very positive effects of the section 48C incentive?

Dr. HANLON. Thank you for that question, Senator. I think you are exactly right in the sense that, if we do not extend the other provisions like R&D expensing, maybe bonus depreciation, and fix the limitation in 163(j), that would cut against these incentives.

In other words, you would be giving on the one hand and taking away on the other hand, essentially, some of the benefits that we would be providing.

And if I can just add, I think the corporate AMT that is being proposed by the Biden administration would also work against these incentives, because financial accounting would not have this incentive embedded in it. And so on the AMT side, you would not get that incentive. And so it would work against the credit.

Senator DAINES. Thank you for those comments.

Mr. Timmons, in your testimony you mentioned that businesses across the country have told you the reduction of tax rates on corporations and pass-throughs that were enacted as part of the 2017 tax cuts have sparked new investment by businesses, helped them add jobs, and increased wages.

One part of the Tax Cuts and Jobs Act that I am particularly proud of is that 20-percent deduction for pass-through businesses. In fact, when I look at my home State of Montana, 99 percent of businesses in Montana are small businesses. As we have seen—remember that debate back in 2017—a lot of the job creation in the economy came from the pass-through side, even versus the C corp side. I was for lowering rates for both, but we have to keep our eye on, certainly, these pass-throughs.

The bill that Senators Cassidy, Scott, and Portman recently introduced would make this tax deduction permanent, which I believe would give businesses the certainty to continue investing in businesses, as well as the workforce.

My question is, in your opinion, would it not be better for Congress to act early to make this deduction permanent, before it expires at the end of 2025? And related to that, what would be the consequences of not extending this very important deduction?

Mr. TIMMONS. Well, thank you for that question, Senator. I think it is a very important question, and it relates to the previous discussion we had about the power of the small and the medium-sized manufacturers in this country.

In fact, of our 14,000 members, 90 percent of them are small and medium-sized enterprises. So we obviously see the tax code as very consequential to small and medium-sized enterprises.

And yes, I would very much agree with you that we need to take that issue on now and not wait until the last minute. As these businesses are trying to figure out exactly what to do in the future, when it comes to expanding their operations or hiring more workers, they need to plan ahead. This cannot be something that happens right at the last minute.

You specifically asked—and in fact, I would say I would like to see even more generous tax policy, quite frankly, for small and medium manufacturers, because they truly do power the economy.

You asked specifically about some of the results of tax reform from 2017; 263,000 manufacturing jobs were created in 2018. That was the best job growth that we have seen in the sector in over 2 decades. We had the fastest growth in wages of 3 percent following tax reform as well.

So we have seen a lot of investment. We have seen a lot of job growth because of those tax policies, and we see it in the data. But I also hear it anecdotally. I know you do too. I know Todd O'Hair of the Montana Chamber of Commerce—that is our State affiliate there. I am sure you and he talk about this a lot. It is anecdotally what you hear from manufacturers all around the country: how they feel empowered and supercharged, even during the pandemic. Even during a time when everything should have gone south, and much of it did clearly, manufacturing was able to weather the storm because of those competitive policies that we had in place.

Senator DAINES. Thank you, Mr. Timmons.

Senator Crapo, I think I am out of time. Is that right?

Senator CRAPO. Yes; that is correct.

Senator DAINES. Okay. All right; thanks.

Senator CRAPO. Sorry, Steve.

Next is Senator Cornyn.

Senator CORNYN. Well, thank you, Senator Crapo. And I am grateful to you and Chairman Wyden for having this hearing.

Really what I would like to do is just first make a confession. I am one of those who, from an economic standpoint, always thought that efficiency and low-cost providers were a good idea, no matter where the manufacturing occurred. But I have reevaluated my opinion in light of the pandemic—and in light of the vulnerability of our supply chains in general. And many of us have mentioned in the course of this hearing and elsewhere the importance of our competition with China, whether it is in 5G, semiconductors, artificial intelligence, quantum computing, or you name it. And so, I do think some sort of industrial policy considerations need to apply.

And the question I have for each of the witnesses is, if you had to choose between an annual appropriations process and a refundable tax credit like the CHIPS for America Act that Senator Warner and I have proposed—and that many others on a bipartisan basis have supported—which would you choose? If you had to choose just one in terms of its predictability and usefulness? Anybody who would like to answer. Maybe start with Mr. Davis.

Mr. DAVIS. Thank you, Senator Cornyn. And thank you for your leadership on the CHIPS Act. I think an annual appropriation is difficult for those of us who make large investments and have to make decisions about what the environment is that we are going to be making those investments in.

So moving away from annual and going back to, as I said, the predictable and competitive—and in our case that is competing with Asia for semiconductor investments. So much more on the intent of the CHIPS Act.

Senator CORNYN. Mr. Timmons, do you have a view on that?

Mr. TIMMONS. Certainly. And I agree completely. An annual appropriation, unfortunately, or an annual decision, if you will, does not make for predictability or stability. And we do need that in order to compete and succeed in a global economy.

And I will say this, Senator: I think you can have both. Products made in America—look, I represent manufacturers in America. I want everything made in the United States. You know, I want American workers to benefit.

We know that that is not possible every time, but we ought to be doing everything we can to attract investment and job creation here. And so I would say you can do that, and you can have low-cost products being made here as long as we have the right tax and regulatory policies in place, which is what this hearing is all about today. And I completely agree with your statement and support that legislation, and I hope that we can see it enacted.

Senator CORNYN. Thank you. If there is one thing that the virus has taught us, it is about the vulnerability of our supply chains, starting with PPE. But it does not end with PPE. And obviously semiconductors—China is building 17 foundries as we are thinking about building one, or having one built in Arizona. So I think this is a critical one. But it is not the only critical one.

So I hope that all of you will help contribute to our thinking about how we prioritize the manufacturing that does have national security implications, in addition to just the economics of the situation.

So thank you for being here, and thanks for your testimony.

Back to you, Mr. Chairman.

Senator CRAPO. All right. I am not sure if we have any Senators who remain back yet. There is a vote going on, and we expect some to come back, but let me go through—is Senator Cassidy available?

[No response.]

Senator CRAPO. And how about Senator Brown?

[No response.]

Senator CRAPO. All right. Well, I have a couple of questions that I did not get to, and so, while we wait for a couple of those Senators to come back, or the chairman to come back, let me go on with the line of questioning that I started out with.

I think many of you very capably pointed out the importance of protecting our tax credits for investment, research and development, and having a stable system in which we do not go through this annual process for the tax extenders, or even the longer process that we got out of the reconciliation bill for some of the tax credit policies. And I agree very much with that.

I am very concerned, however, about some of the reports that we are getting from the White House in terms of its intended proposals for tax policy that would increase the broad base—what I consider to be the very important base of the corporate income tax rate reductions that we achieved in the TCJA.

We reduced it, as you recall, from 35 percent to 21 percent, which still left us, when you look at the averages that Michelle Hanlon pointed out, still left us with one of the higher tax rates, but still competitive, right? Really sort of in the middle of the pack, if you will, with our global competitors.

And so I just would like to ask—I see the chairman is back, so let me just ask Mr. Davis and Mr. Blatt. If you could, just quickly respond to the concern that I have that we should not look at offsetting the needed stability we need in the R&D and investment tax credit arena with a corporate tax rate increase.

Mr. DAVIS. Yes, I think they work against each other. I think, as Michelle talked about earlier, it is giving with one hand and taking with another. And really, as you know, the R&D tax credit is not a give. It is a void moving to a takeaway that would make us completely uncompetitive with the rest of the world. And so, I fully support a focus on a predictable, very competitive corporate tax rate, and then preserving the deductibility for R&D.

Senator CRAPO. Thank you.

And, Mr. Blatt?

[Pause.]

Senator CRAPO. I think he may have stepped away from the camera for a minute. With that—oh, here he is. Did you hear the question, Mr. Blatt?

Mr. BLATT. I did hear the question, Senator Crapo. And I appreciate the question. I probably have more of a unique opinion on R&D than probably the others do, and I think there are probably two types of R&D that we look at as an organization.

First of all, the first part of the R&D is the fact that we are trying to make sure that we stay competitive, and we have more productivity. In that respect, I would be okay with making sure that we keep the tax rate low for that type of R&D.

But if we are doing research and development to try to lower the workforce or take people out of the workplace, then I would have a different view of that. And so that would take people out of the economy, and I think that goes against what we are trying to do here.

Senator CRAPO. Understood. Thank you. And I did want your perspective on that.

Mr. Chairman?

The CHAIRMAN. Yes. Thank you——

Senator CRAPO. Mr. Chairman, I am ready to turn it back to you. And I think Senator Brown is the next one in line.

The CHAIRMAN. Thank you, Senator Crapo. And Senator Brown is indeed the next one in line. I want to thank all my colleagues for their patience. We have had a lot of Senators interested, and understandably so.

Senator Brown?

Senator BROWN. Thank you, Mr. Chairman, Senator Crapo. Just like old times, calling on me. Thank you.

Last week, 81 workers in Bucyrus, OH, saw their jobs outsourced to China. Bucyrus city council and the union offered to find ways to save the jobs. They sent a letter to the company offering to work with the stakeholders to find a solution. GE Savant refused. Now 81 workers face tough conversations at the kitchen table about how their families survive. "What do we do next?"

In this case, GE's lighting plant in Logan, OH makes the glass for remaining assembly lines in Bucyrus. Its workers belong to the USW.

So, Mr. Blatt, briefly, what happens to U.S. workers in factories when parts of a supply chain like that go overseas?

Mr. BLATT. Thank you, Senator Brown. Unfortunately, we see a lot of that within our country, and within our union: companies moving overseas. And in this particular instance with Savant, we just actually got done getting a contract with the company in Logan, OH. But now the fact that they make the glass casings for the LED lights that are finished in Bucyrus, that plant is now looking for a place—what are they going to do with these glass casings that they are making?

That puts pressure not only on the company to find someplace to put their product, but it also puts pressure on the workers to know whether they are going to have a job or not, which then puts pressure on the community to wonder if those jobs are going to be available for workers now or workers in the future?

And so, unfortunately, it puts all kinds of pressure on all kinds of people. And you know, companies like GE are famous for doing that, and it seems that that will put pressure now to maybe lose that facility in Logan, OH as well.

Senator BROWN. Well, thank you. And we will continue to talk to you and to the two communities about it.

Mr. Timmons, it was good talking to you the other day. I also appreciated a chance to talk to a fellow Ohioan. Thank you for that.

What steps can we, as policy-makers, take to halt the closure of plants in towns like Bucyrus?

Mr. TIMMONS. Senator, you missed the Ohio lovefest that we had here just a little while ago. You have three panelists with Ohio ties. So it is always good to be with Ohioans.

Senator, that is a great question, and it is one that we addressed in our proposal on strengthening manufacturing supply chains. I think it really applies to existing facilities that are here as well. And that is making sure that we have a broad-based tax credit that encourages manufacturing investment here and support for workforce training programs. Donnie—I was very happy to hear him talk about the need for ensuring that we are not only training but retraining and future-proofing jobs.

A tax credit would help manufacturers achieve that. We have already talked about ensuring that the tax code supports research and development, protecting interest deductibility, and getting an annual report on American competitiveness. It is something we are not doing. There has been some discussion today of industrial policy, and I know that for years we have kind of avoided that term. I, frankly, am not afraid of that term; it does not bother me, because everything we do should be directed at strengthening manufacturing and increasing manufacturing jobs here in the United States.

But I think all of those things, Senator, as well as infrastructure investment—as I mentioned in my opening statement—and other priorities, can help us do exactly that here in this country to make sure that we are more competitive.

Senator BROWN. Thank you.

I have heard there was bad news in another case today that we just heard, and, Mr. Jennings, as a Clevelander, I want to talk to you about this.

Clevelanders turned on the local news and saw headlines about yet another American corporation deciding to build things in Mexico instead of Ohio. Ford had made a 2019 commitment to invest $900 million in the Ohio Assembly Plant of Lorain in Avon Lake, OH, an investment they promised would create more than 1,500 jobs, where instead now it is deciding to not honor that proffer and instead build the next-generation vehicle in Mexico.

Mr. Jennings, you know how important the Avon Lake facility is to Lorain and northeast Ohio. That decision to turn its back on the community is just unacceptable. Give me your thoughts about that, what a plant—what an investment like that would mean to a community.

Mr. JENNINGS. So, thank you for the question. As you know, Ford employs more hourly workers in the U.S. than any other automaker, and we choose to invest in America more than any other automaker.

Specific to the Ohio Assembly Plant that you referenced, we have actually invested $185 million and created 100 new jobs there at the assembly plant. We are invested at that facility, and we are looking to actually increase the capacity that that facility provides from the Super Duty truck perspective for such a strong demand.

So we are going to continue to invest and support that particular facility there in Ohio.

Senator BROWN. But the $900 million commitment is no longer? Is that what you are saying?

Mr. JENNINGS. We are continuing to work—we are continuing to work and invest in that facility; $185 million has been invested at that site. As we continue to look at other activities for other vehicle programs, we will be looking outside of Ohio.

Senator BROWN. $185 million is less than $900 million. Even people in Washington can do that math. So I am hopeful that your company will step up and do the right thing here. This is not the last time you will hear from us. We have talked to the administration. President Biden has strong feelings, I know, about this, and I am hopeful we can find a way to invest here. I know that kind of investment in an auto plant—I have seen it in Lorain, I have seen it in Toledo, I have seen it in Youngstown—that kind of investment creates huge numbers of good-paying union jobs, and good-paying management jobs too. And we want to continue it.

Thank you so much.

Thanks, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Brown.

Senator Cassidy is next.

[No response.]

The CHAIRMAN. And then Senator Sasse will close for the day.

[No response.]

The CHAIRMAN. Senator Crapo, perhaps you know about the whereabouts of Senators Cassidy and Sasse? You are on mute.

Senator CRAPO. My understanding is that Senator Sasse will not be able to make it back. And since Senator Cassidy is not here now, I am assuming the same is true for him, Mr. Chairman. So I am assuming we can wrap up.

The CHAIRMAN. I am going to wrap up just with a quick statement, because I want you all to know what I am taking away from

this, because I think it has been a very productive session. A lot of constructive thoughts were being offered by Senators of a variety of different philosophies.

And to me, the takeaway is that it is urgent business for elected officials to create the conditions for a home-grown semiconductor industry that employs high-skilled, high-wage workers for a decade, not just for a year. And that is my takeaway. And I will just tell you, as the chair of this committee, I have seen too many short-term tax policy mistakes.

One year I voted against the tax extender package because I said, "I am not going to support any tax extenders with a shelf life shorter than a carton of eggs." So we have had one short-term policy after another, one fiscal cliff after another, and I just want you walking out of here knowing I intend to work with Senator Crapo and all of our colleagues to come up with a strong policy—and I think it can be bipartisan—that creates the conditions for the kind of home-grown industry that ensures that we can out-compete China. That is what this is all about: out-competing China.

So I want to thank all of our guests today, all of our witnesses, and the members. We had a very high turnout among members, which shows how strongly colleagues feel about this.

I guess the hearing is wrapping up, but it is in the "to be continued" department. Because issues like the research and development questions, they cannot afford to wait. Every single day is a mistake to allow that to continue.

So—to be continued. Thanks, everybody.

[Several witnesses say, "Thank you."]

[Whereupon, at 12:47 p.m., the hearing was concluded.]

APPENDIX

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

PREPARED STATEMENT OF DONNIE BLATT, DISTRICT 1 DIRECTOR, UNITED STEEL, PAPER AND FORESTRY, RUBBER, MANUFACTURING, ENERGY, ALLIED INDUSTRIAL, AND SERVICE WORKERS INTERNATIONAL UNION (USW)

Good morning, Chairman Wyden, Ranking Member Crapo, and members of the committee. Thank you for the opportunity to be here today. My name is Donnie Blatt, and I am the district director for United Steelworkers District 1, which covers the State of Ohio. Our union is the largest industrial union in North America, representing workers across the economy, but primarily in energy-intensive, trade-exposed industries that produce a wide array of materials and products, including paper, glass, ceramics, cement, chemicals, aluminum, rubber, oil, mining, and, of course, steel.

INTRODUCTION

I joined the union in April 1979 as a member of Local 5724 at Ormet Aluminum Corp. in Hannibal, OH, which was an aluminum smelter that employed nearly 1,000 workers. I can speak personally about the hard work, pride, and economic security of a union manufacturing job. I can also speak about the devastation that a plant closure has on families and communities because the Ormet facility was idled in 2013, and torn down several years later. At the time, estimated impacts were net job loss of over 3,000 and a loss of $9 million in State tax revenue. While those numbers are terrible by themselves, I want to paint a more human picture. The once bustling downtown with lots of shops is now empty with only a handful of small businesses. Families no longer buy new cars, and many have moved away in search of good jobs. As a kid, I would never have predicted that my hometown would look the way it does today.

My personal experience is not all that different from many of our union's current, and former, members and across the State of Ohio. Those of us in the industrial heartland know the importance of manufacturing jobs in order to support the local tax base and build strong communities. We also see the unraveling of supply chains when good manufacturing jobs are lost. For example, the Economic Policy Institute found that 16.5 indirect jobs are lost per $1 million drop in demand for durable manufacturing, compared with 10.6 indirect jobs lost for the same demand drop in retail.[1] For these reasons, Congress and the administration should use all of the tools available to retain and grow manufacturing jobs and domestic supply chains, including tax policy.

ENSURING AMERICAN WORKERS MAKE PRODUCTS IN CRITICAL SUPPLY CHAINS

As the committee considers the effects of the tax code on manufacturing, we need to make sure that firms and their workers are globally competitive and are able to make the products for important technology, communications, energy, and medical supply chains (including personal protective equipment). This starts with better understanding our supply chains and improving our procurement policies. President Biden's executive order on America's supply chains furthers that process by a review of four vital products: semiconductors, critical minerals, advanced batteries, and

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[1] *https://www.epi.org/press/job-loss-in-manufacturing-has-a-large-ripple-effect-on-other-jobs/*.

pharmaceuticals and their ingredients. The order also initiates a long-term review of the industry basis of six sectors of our overall economy over the next year.[2]

Another important way that the tax code can be used is to strategically drive investment in industrial facilities to upgrade, retool, or install new technologies that ensure the longevity of the facility. Capital investments in manufacturing facilities are expensive and are expected to last for decades, and that upfront capital is hard to come by, especially during a recession like the one we are currently experiencing.

Our union certainly has had success stories where our employers have taken advantage of tax credits to ensure that our members' jobs continue. One example is Rotek in Aurora, OH. The 2009 authorization of the 48C tax credit helped Rotek make investments to upgrade the facility, and our members there continue to make large diameter slewing bearings and seamless forged rings that have applications in the oil, gas, mining, and wind energy industries. Because of this and other successes with 48C in other parts of the country, our union has endorsed the American Jobs in Energy Manufacturing Act of 2021, introduced by Senator Manchin and Senator Stabenow, to revive and expand the 48C tax credit. We particularly support that the legislation directs a portion of the spending to manufacturing facilities in communities with significant job losses in coal, power plants, and manufacturing.

It is also important that we put our tax code in perspective with the globe and that we protect against unnecessary tax base erosion. The fact is that the United States raises less revenue from corporate income taxes as a share of GDP than all other countries in the G7, and almost all other countries in the OECD.[3] While that may sound good to companies in the short term, we often have a saying that management will trip over dollars to pick up a penny. We need to ensure that our tax code allows government to rebuild our infrastructure, invest in our workers, and provide for our security.

Meanwhile, we need to work with our allies while improving our tax code to discourage outsourcing and profit shifting to low tax jurisdictions. We should not allow smaller domestic manufacturers to lose out to larger firms who seek to venue shop across the globe for lower tax rates. There are policies that this union has supported for years now, which would improve transparency and help prevent outsourcing of manufacturing.

USW has supported the Disclosure of Tax Havens and Offshoring Act, which would require multinational corporations to publicly release basic revenue and tax information that they are already required to collect and privately report to the IRS. This concept of country by country reporting will help investors, and prevent multinational corporations from generating artificial profits through risky international tax planning.

Another piece of legislation the union has supported is the No Tax Breaks for Outsourcing Act. The legislation would level the playing field for small and wholly domestic businesses by eliminating the deep discount that multinational companies get for shifting profits offshore and outsourcing jobs. It is counterproductive to the goals of a fair and growing economy to allow U.S. companies to pay a lower tax rate abroad than they pay in the United States.

CREATING DEMAND FOR U.S. MANUFACTURED PRODUCTS

The quest to build out domestic supply chains for critical technologies and materials will only be successful if we also use policy levers to ensure that domestic manufacturers have customers who make long-term commitments to source domestically. Our union can provide many examples of U.S. companies whose prices are illegally undercut by foreign competitors. Our trade laws need reform, but so do our industrial policies that have not successfully created markets for domestic manufacturers on a scale large enough to develop robust supply chains in this country.

For example, the bulk of components for new energy technologies come from overseas. Yet, USW represents Sharon Tube, owned by Zekelman Industries, in Sharon, OH that can make steel tube to the specifications for utility scale solar, among other applications. And Thomas Strip Steel in Warren, OH, makes paper thin steel for battery casings. These companies are both nearly 100 years old and have adapted

[2] *https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/*.

[3] *https://www.taxpolicycenter.org/briefing-book/how-do-us-corporate-income-tax-rates-and-revenues-compare-other-countries.*

over time to produce products needed for the technology of the era. I am confident that U.S. manufacturers can, and would, innovate as long as they have customers.

As we look at the expansion of new technologies, the Federal Government has a big role to play in the buildout of supply chains, and in making sure that we retain existing supply chains. The auto supply chain is a good example. USW members at Warren Coke in Warren, OH, have long provided the coke to Cleveland-Cliffs in Cleveland, OH (formerly ArcelorMittal) where our members make lightweight steel that goes into fuel efficient automobiles. Many car companies have made commitments to make more electric vehicles. As they work to meet those commitments, Federal policy should ensure that we gain, rather than lose, jobs in the auto supply chain.

Our union has long been a supporter of buy America policies in Federal procurement for infrastructure as a way to build markets and to ensure that Federal money is spent to support American workers. The U.S. Federal procurement expenditures are estimated to have been equivalent to 9.3 percent of U.S. gross domestic product (GDP) in 2017.[4] We need to better harness that power. As President Biden said when he signed his executive order on strengthening American manufacturing, we need to "use taxpayers' money to rebuild America. We'll buy American products and support American jobs, union jobs."[5]

These principles are broadly popular. The Alliance for American Manufacturing has found in polling that 80 percent of Americans support requiring that all taxpayer-funded infrastructure projects use American-made goods and materials.[6] We encourage Congress to ensure that Federal spending in the form of tax credits is used to benefit industries and companies that drive economic recovery in America, and grow our manufacturing base.

CONCLUSION

In conclusion, well-paid, union, American manufacturing workers are critical to our economy. You can see the evidence of that in my hometown and many others across the country. Growing a globally competitive manufacturing base with mature strategic supply chains is critical to both our economic recovery and our national security. I thank you for the opportunity to share today how important it is for Congress to use many tools—including tax policy—to meet that goal.

QUESTIONS SUBMITTED FOR THE RECORD TO DONNIE BLATT

QUESTIONS SUBMITTED BY HON. SHERROD BROWN

Question. Are there existing provisions of tax law that, although unintended, provide an incentive for corporations to locate factories or jobs abroad? How should Congress reform these provisions of tax law?

Answer. It has been well documented that the 2017 Tax Cuts and Jobs Act (TCJA) dramatically cut tax rates, but once you get past the top-line numbers, there are several provisions which unfortunately encourage offshoring of profits and still provide incentives to firms that outsource.

The U.S. system of Global Intangible Low-Taxed Income (GILTI) is supposed to address offshore profit shifting in excess of 10 percent, but companies that shift tangible assets (*e.g.,* machinery, factories, stores) can more or less discount those investments from GILTI. This incentive to outsource should be closed.

Finally, if you look at GILTI offshore profits that are subject to U.S. taxes, they are effectively taxed at 10.5 percent, which is half of the current 21-percent corporate tax rate. Steven M. Rosenthal in 2017 wrote a comprehensive piece on the potential outsourcing pieces in TCJA and can be viewed here: *https://www.taxpolicycenter.org/taxvox/current-tax-reform-bills-could-encourage-us-jobs-factories-and-profits-shift-overseas.*

There are a number of legislative proposals which could improve our tax law. The first step is to invest in our country's ability to collect the revenue needed to rebuild

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[4] *https://fas.org/sgp/crs/row/IF11580.pdf.*

[5] *https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/01/25/remarks-by-president-biden-at-signing-of-executive-order-on-strengthening-american-manufacturing/.*

[6] *http://s3-us-west-2.amazonaws.com/aamweb/2019_Slide_Deck_-_Infrastructure_and_Buy_America_FINAL.pdf.*

our country. The Internal Revenue Service has been drained of resources and is estimated to be losing roughly $600 billion per year in revenue from unpaid taxes, including from corporations. Better policing of our tax laws can be unlocked for pennies on the dollar. The Treasury Department has estimated a return on investment for the treasury of nearly $6 in direct revenue for every additional enforcement dollar.

In addition, legislation such as Senator Whitehouse's No Tax Breaks for Outsourcing Act are steps in the right direction.

Question. The threats to domestic manufacturing associated with our reliance on foreign supply chains are not industry-specific. From semiconductors to PPE and other essential medical supplies to pharmaceuticals, our reliance on foreign supply chains threatens not only the health and safety of Ohioans, it impacts their livelihoods and the economic health of our communities.

Members of this committee have put forward some strong proposals to invest in supply chain resiliency right here in the U.S. in order to better support hardworking Americans and our domestic manufacturing facilities. Last year, I introduced the Protecting American Heroes act to increase U.S. production of PPE, both to support our COVID–19 response and to better prepare for future public health emergencies. Senator Portman and I have worked together on our Build America, Buy America Act, which would both strengthen domestic manufacturing and support American workers. And Senator Cassidy and I are drafting legislation to create a domestic API reserve and make our pharmaceutical supply chain more resilient.

With his recent executive order on U.S. supply chains, President Biden has acknowledged how important it is that we act to strengthen the resiliency of our domestic supply chains. We have a once in a generation opportunity to advance policy to strengthen domestic manufacturing.

Beyond tax policy, what are some other legislative concepts that could help support domestic manufacturing and deliver for American workers? Please share a few ideas on policy proposals that would help strengthen the resiliency of our domestic supply chains.

Answer. The ability of Congress to influence the economy to support both domestic manufacturing and their workers is vast. This starts with recognizing what other governments are providing for State support to manufacturers and what that means for private companies here domestically. Congress can provide aid to upgrade manufacturing facilities and can also provide technical support to foster newer industries. This can be done through modification of the tax code toward policies that the union supports, like the 48C Advanced Energy Manufacturing Tax Credit, but also through direct procurement and support to revitalize or build domestic industry. Where there are unnatural monopolies that prevent domestic industry from moving further up the supply chain, like in solar ingots and wafer where China's market dominance crowds out domestic private enterprise, there is a need for the U.S. government to intervene. Other proposals, such as improving domestic and global labor rights, will also ensure that workers are not the ones to suffer when supply chains shift.

The Blue Green Alliance and the AFL–CIO also had well-developed agendas which highlight significant manufacturing policy ideas. They are linked below.

BGA: *https://www.bluegreenalliance.org/resources/manufacturing-agenda-a-national-blueprint-for-clean-technology-manufacturing-leadership-and-industrial-transformation/*.

AFL–CIO: *https://aflcio.org/workers-first-agenda*.

QUESTIONS SUBMITTED BY HON. ELIZABETH WARREN

Question. In your written testimony, you note that "the United States raises less revenue from corporate income taxes as a share of GDP than all other countries in the G7, and almost all other countries in the OECD." What are the consequences of low corporate tax revenue collections for manufacturing workers, their families, and communities?

Answer. The deferred maintenance in our communities is showing, and it is directly reflected in the reduced revenue brought in by the Federal government because of inadequate tax law and insufficient tax policy. There are real world impacts when dams fail, power grids buckle under climate pressures, and motorists navigate

roads that are crumbling. Low corporate tax revenue also slows gross domestic product because there is not adequate investment in our infrastructure. A 2014 University of Maryland study found that infrastructure investments added as much as $3 to GDP growth for every $1 spent with a bigger effect during a recession.[1]

Question. In your written testimony, you note that "the United States raises less revenue from corporate income taxes as a share of GDP than all other countries in the G7, and almost all other countries in the OECD." What are the consequences of low corporate tax revenue collections for manufacturing workers, their families, and communities?

Answer. The consequences of low corporate tax revenue collections impact manufacturing workers personally because of reduced potential to supply from their factories the goods that our country needs to make to rebuild our country. This impacts their commute home where in 2018 it was estimated that commuters wasted an average of 54 hours a year in traffic. This impacts timely delivery of goods artificially raising prices for them at the grocery store. When a worker wants to go on vacation they deal with America's airports, which carry the most passengers of any country in the world, but our aviation infrastructure is also overburdened, with some 20 percent of all arrivals and departures delayed in 2019. These workers lose out on time and, ultimately, the chance to pursue happiness when we do not collect revenues necessary to run one of the largest economies in the world.

Question. The COVID–19 pandemic exposed critical weaknesses in our Nation's medical supply chain. As the disease spread, we suddenly needed many more of the products essential to fighting the virus, including masks, glass vials used to store vaccines, and even basic chemicals used to make test kits. My Pharmaceutical Supply Chain Defense and Enhancement Act would invest $5 billion in domestic drug manufacturing and additional funding to create a market for these domestically produced pharmaceutical by requiring Federal agencies to purchase American-made drugs. Do you believe that this kind of investment would help stabilize our supply chain and boost job creation here at home?

Answer. Legislation like the Pharmaceutical Supply Chain Defense and Enhancement Act will help keep critical, well-paying jobs in the pharmaceutical industry here in America, while helping to address our Nation's concerning dependence on foreign-made medicines. According to the FDA, only 28 percent of active ingredient manufacturing facilities are located in the U.S. With China and India manufacturing approximately 80 percent of the drugs consumed in the U.S., it is clear that we need legislation like the Pharmaceutical Supply Chain Defense and Enhancement Act to ensure that the production and skills needed to produce life-saving medications remain on U.S. soil. As a union, we've seen our manufacturing base shrink as company after company has moved production overseas. We represent workers at a generic oral-solid dose facility in Morgantown, WV that is being shuttered at the end of July. The former Mylan facility, which is currently operated by Viatris, is costing 1,500 employees their jobs as the company moves production to plants overseas. It is clear that more needs to be done. We need Federal agencies to be required to purchase American-made drugs in order to safeguard our supply chain and workforce. We need legislation like the Pharmaceutical Supply Chain Defense and Enhancement Act.

PREPARED STATEMENT OF HON. MIKE CRAPO,
A U.S. SENATOR FROM IDAHO

WASHINGTON—U.S. Senator Mike Crapo (R–ID), ranking member of the U.S. Senate Finance Committee, delivered the following remarks at a hearing entitled, "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing."

Thank you, Chairman Wyden, and your staff for collaborating with us on this bipartisan hearing. There are many areas within the Finance Committee's jurisdiction that are ripe for bipartisan support in this Congress, and I look forward to working with you on those through regular order.

Today's hearing will focus on the role of tax incentives for domestic manufacturing.

The manufacturing sector is critical to the U.S. economy. In 2019, the manufacturing sector accounted for 11 percent of GDP. The U.S. has experienced a net loss

[1] *https://www.cfr.org/backgrounder/state-us-infrastructure*.

of manufacturing plants in every year from 1998 through 2018. The decline in domestic manufacturing jobs may be attributable to a number of factors, including increased automation and productivity, labor costs, and taxes.

Taxes can play a significant role in a company's site selection process. Prior to the Tax Cuts and Jobs Act of 2017, the United States had one of the highest corporate income tax rates among developed countries. Also before TCJA, the U.S. confronted pressures for domestic firms to invert or be acquired by foreign companies, leading to U.S. headquarters and jobs going abroad.

Today, as a result of TCJA, the United States now has a flat 21-percent corporate income tax rate. Pressures for inversions and acquisitions abated. Yet, despite the decreased rate, the U.S. still holds the 11th highest corporate tax rate among developed countries. The statutory corporate income tax rate is critical to the United States' competitiveness in the global market.

Another key aspect to our competitiveness is capital investment. The Internal Revenue Code has a number of tax incentives for capital investment, which, when paired with a competitive corporate tax rate, are essential to promote domestic manufacturing.

President Biden's recent executive order notes a growing concern about the supply of semiconductors. This is an area of bipartisan interest, and I welcome the opportunity to work with Chairman Wyden on this. For example, last year, Senators Cornyn and Warner introduced S. 3933, the Creating Helpful Incentives to Produce Semiconductors for America Act (CHIPS Act), which would create a 40-percent refundable investment tax credit for qualified semiconductor equipment or any qualified semiconductor manufacturing facility investment expenditures. This bill had seven Republicans and five Democrats as cosponsors.

Another example: just this month, Senators Manchin, Stabenow, and Daines introduced S. 622, the American Jobs in Energy Manufacturing Act, which offers an $8-billion increase to the section 48C Advanced Manufacturing Tax Credit available to manufacturers and other industrial users to retool, expand, or build new facilities that make or recycle energy-related products.

Micron, Intel and other American semiconductor manufacturers are operating in an increasingly competitive and sometimes unscrupulous market. Only a couple of years ago, Chinese state-owned companies stole trade secrets from Micron in an effort to gain an advantage against leading producers of a sought-after technology. Helping U.S. companies strengthen their supply chains to better protect these critical technologies is vital to safeguarding national security and the health of our economy.

Chairman Wyden, we have a great panel here, representing a comprehensive range of perspectives from the business community, academia, as well as labor.

I look forward to hearing their thoughts as we consider various tax proposals that can help to address the global semiconductor shortage, supply chain issues, and encourage domestic manufacturing activity.

Thank you, Mr. Chairman.

PREPARED STATEMENT OF GEORGE S. DAVIS, EXECUTIVE VICE PRESIDENT AND CHIEF FINANCIAL OFFICER, INTEL CORPORATION

Chairman Wyden and Ranking Member Crapo, thank you for the opportunity to address the committee today.

Our Nation and the semiconductor industry have faced unprecedented challenges due to the pandemic. Recognizing the critical role of technology and our responsibility to our communities, Intel launched a $60 million technology initiative to combat the coronavirus through accelerating access to technology at the point of patient care, scientific research, and ensuring access to online learning for students.[1]

Semiconductor technology and Intel's domestic R&D and manufacturing operations provide a critical foundation for U.S. economic and national security. More than 50 years ago, Intel invented the world's first commercial microprocessor. This fueled job growth and development of new technologies with major economic bene-

[1] *https://newsroom.intel.com/news/intel-commits-technology-response-combat-coronavirus/#gs.v42r84*.

fits. Intel remains the only American semiconductor company that still designs and manufactures the most advanced logic chips and is the only company that has built leading-edge fabs in the U.S. during the last 5 years. I am proud that the majority of our manufacturing is conducted in Oregon, Arizona, and New Mexico, and, that the majority of Intel's intellectual property still resides here at home.[2]

Unfortunately, U.S. leadership in semiconductor manufacturing is at risk. Global demand for semiconductors has increased dramatically and is projected to grow five percent annually until 2030.[3] However, only 12 percent of global semiconductor manufacturing is in the U.S. and just nine percent is from American companies. Currently, 80 percent of the world's semiconductor manufacturing is concentrated in Asia.[4]

U.S. semiconductor manufacturing must regain its competitiveness. President Biden's executive order[5] reinforces the urgency of funding the bipartisan CHIPS for America Act, led by Senators Cornyn and Warner. Their legislation recognizes the importance of using Federal grants to support American workers and strengthen the domestic semiconductor industry. Congress must now work to fully fund the grant program and enact its proposed investment tax credit.

An investment tax credit would encourage long-term, domestic semiconductor manufacturing. A single, advanced logic manufacturing facility costs tens of billions of dollars to build and operate. Every advancement in chip design requires retooling and reinvesting in new equipment. Over the last decade, the average rate of chip manufacturing has grown five times faster overseas than in the U.S. due to robust incentive programs offered by other countries. In fact, U.S. companies face up to a 40-percent cost disadvantage compared to Asian competitors due largely to government incentives. Moreover, 19 European Union countries recently agreed to jointly invest in semiconductor technologies to close the manufacturing gap. This targeted government support could total as much as $60 billion.[6]

Investment in research and development is critical to advanced manufacturing. As President Biden acknowledged in his executive order, R&D is necessary to sustain leadership in the development of critical goods and materials. However, without congressional action, 67 years of pro-R&D growth policy is about to be reversed.

Starting next year, businesses will be required to amortize their R&D expenses over several years. Removing this deduction will make the U.S. virtually the only developed country in the world with this policy. U.S. investment in research is already relatively flat. While other governments work to substantially increase R&D investment, this change will significantly increase the cost to perform R&D in the U.S. We applaud the bipartisan work of Senators Hassan, Young, Cortez Masto, and Portman, whose bill, the American Innovation and Jobs Act, would prevent this regressive policy from taking effect.

Right now, the U.S. is uncompetitive in attracting new semiconductor investments. Semiconductors are the building blocks of technology, and producers must continually invest in R&D to enable chips to run faster and use less power. This is why Intel reinvests on average nearly 20 percent of its revenue into R&D, or about $13 billion annually. The CHIPS Act, and the ability to continue to deduct R&D expenditures, enable American companies to compete on equal footing with heavily subsidized foreign companies.

The U.S. is the birthplace of semiconductor technology and has always been a leader in semiconductor development. Investments in our industry will bolster manufacturing capabilities needed to strengthen U.S. economic and national security. Virtually all modern technology, from artificial intelligence to 5G to health care, exists because of U.S. leadership in semiconductors.

Thank you for your time and we look forward to working with you to advance these solutions and U.S. technological leadership.

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[2] Intel Corporation, Annual Report 10–K, *https://www.intc.com/filings-reports/all-sec-filings?form_type=10-K&year=2020*.

[3] Boston Consulting Group and the Semiconductor Industry Association, "Government Incentives and US Semiconductor Manufacturing," September 2020, *https://www.semiconductors.org/wp-content/uploads/2020/09/Government-Incentives-and-US-Competitiveness-in-Semiconductor-Manufacturing-Sep-2020.pdf*.

[4] *Ibid.*

[5] *https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/*.

[6] *https://www.reuters.com/article/us-europe-germany-chips/germany-predicts-chip-investments-of-up-to-50-billion-euros-in-europe-idUSKBN2A32KG*.

QUESTIONS SUBMITTED FOR THE RECORD TO GEORGE S. DAVIS

QUESTIONS SUBMITTED BY HON. SHERROD BROWN

Question. Are there existing provisions of tax law that, although unintended, provide an incentive for corporations to locate factories or jobs abroad? How should Congress reform these provisions of tax law?

Answer. The Tax Cuts and Jobs Act (TCJA) initiated several changes in the U.S. tax code, which resulted in the creation of new, complex regulations. Many of these regulations were recently finalized or are still in the process of being finalized so businesses are just now more able to fully understand how the TJCA functions in practice. However, one key change that was incorporated into the TCJA, which discourages U.S. activities and jobs, is the forthcoming amortization of R&D.

Starting 2022, 67 years of tax policy will end, and the ability to immediately deduct R&D expenses under section 174 of the tax code will be removed. Due to the constant nature of R&D investment, requiring businesses to amortize R&D expenses would effectively result in a permanent tax difference. Amortizing R&D expenses discourages on-going investment in innovation. In fact, according to a 2019 EY report,[1] amortizing R&D spending would lead to the loss of over 20,000 U.S. R&D jobs in the first 5 years, with that number increasing to nearly 60,000 in the following 5 years.

The ability to deduct R&D expenses is directly tied to investments and jobs. We would encourage Congress to pass H.R. 1304 and S. 749 this year, which would prevent the change to this longstanding policy from taking effect. For Intel, the ability to innovate is directly tied to improving and enhancing our manufacturing process as we move to smaller and smaller chip nodes. The immediate deduction of R&D expenses is critical. Congress must ensure this negative policy does not take effect so that we can continue to compete and foster US semiconductor leadership.

Question. The threats to domestic manufacturing associated with our reliance on foreign supply chains are not industry specific. From semiconductors to PPE and other essential medical supplies to pharmaceuticals, our reliance on foreign supply chains threatens not only the health and safety of Ohioans, it impacts their livelihoods and the economic health of our communities.

Members of this committee have put forward some strong proposals to invest in supply chain resiliency right here in the U.S. in order to better support hardworking Americans and our domestic manufacturing facilities. Last year, I introduced the Protecting American Heroes act to increase U.S. production of PPE, both to support our COVID–19 response and to better prepare for future public health emergencies. Senator Portman and I have worked together on our Build America, Buy America Act, which would both strengthen domestic manufacturing and support American workers. And Senator Cassidy and I are drafting legislation to create a domestic API reserve and make our pharmaceutical supply chain more resilient.

With his recent executive order on U.S. supply chains, President Biden has acknowledged how important it is that we act to strengthen the resiliency of our domestic supply chains. We have a once in a generation opportunity to advance policy to strengthen domestic manufacturing.

Beyond tax policy, what are some other legislative concepts that could help support domestic manufacturing and deliver for American workers? Please share a few ideas on policy proposals that would help strengthen the resiliency of our domestic supply chains.

Answer. Semiconductors power the Internet, are the building blocks of the digital economy, and provide the foundation for all critical technologies such as artificial intelligence, 5G, and autonomous vehicles. Our country's leadership in designing and developing semiconductors is the major reason the U.S. has the world's largest economy, most advanced technologies, and strongest military. However, U.S. semiconductor manufacturing has eroded from 37 percent several decades ago to just 12 percent today, only 9 percent of which is done by U.S. owned and controlled companies.

To help fuel U.S. semiconductor manufacturing and increase U.S. supply chain security, Congress should: (1) fully fund the bipartisan CHIPS for America Act; (2) ad-

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[1] *https://investinamericasfuture.org/ey-impact-of-the-amortization-of-certain-rd-expenditures-on-rd-spending-in-the-united-states/*.

dress workforce challenges; (3) support measures that incentivize increased supply chain transparency; and (4) enable positive export controls.

Congress authorized significant Federal grants for semiconductor manufacturing incentives and research initiatives in the U.S., but it now must appropriate funds. President Biden has called for an investment of $50 billion in domestic R&D and manufacturing to fund the CHIPS Act, which, according to a study by the Boston Consulting Group, will reverse the erosion in the U.S. share of global semiconductor manufacturing capacity and increase it by a few percentage points. We urge Congress to reaffirm its support for U.S. semiconductor manufacturers and their supply chains by promptly funding the CHIPS Act in an amount of at least $50 billion.

Additional policy options for strengthening the semiconductor supply chain include ensuring the U.S. has the workforce needed to compete globally. This includes implementing policies which will help develop, expand, and diversify the current and future STEM U.S. workforce. And where current skills shortage gaps exist, supporting meaningful U.S. immigration reforms which provide access to global talent, especially foreign nationals obtaining advanced STEM degrees from U.S. universities, and eliminate the green card backlog through both recapture of unused green cards and exempting advanced STEM degree graduates of U.S. universities from existing green card caps. A strong and competitive U.S. workforce with needed immigration reforms will help the U.S. to obtain and retain the talent necessary for America and American enterprise to continue to innovate and create jobs here.

Third, to promote healthier, more resilient supply chains, the administration should include a focus on measures that promote increased supply chain transparency. For example, Intel describes one comprehensive, pragmatic approach to increasing visibility into the composition of products in its Compute Lifecycle Assurance efforts, outlined here: *https://newsroom.intel.com/wp-content/uploads/sites/11/2019/12/introduction-compute-lifecycle-assurance.pdf.*

Lastly, unilateral U.S. export controls harm the competitiveness of U.S.-origin products and technology, U.S. development, and U.S. market leadership. Congress should avoid unilateral controls on semiconductor products and technology and work to ensure such controls are generally adopted at the multilateral regimes before implementing U.S. controls. These are some policies which could support the semiconductor supply chain ecosystem especially in areas where the export control regulations have not kept pace with industry innovations, and where the United States maintains technological advantages. Intel Corporation stands ready to further discuss these and other potential policy measures.

QUESTIONS SUBMITTED BY HON. ROB PORTMAN

Question. The focus of the hearing is on provisions that encourage U.S. companies to expand their U.S. operations and create jobs. While a competitive U.S. corporate rate, R&D incentives, expensing, and certain tax credits are central to that goal, certain international tax provisions also have a significant effect on where U.S. companies choose to invest. The foreign derived intangible income, or FDII, provision enacted as part of the Tax Cuts and Jobs Act created an important incentive for companies to locate their intangible property in the United States which aims further encourage U.S.-based manufacturing and innovation. My Democratic colleagues have proposed eliminating this incentive, and some even believe it's an incentive to offshore.

How does FDII affect Intel's domestic operations, and do you believe it is an important incentive to encourage U.S. companies to stay in the United States, expand their U.S. footprint, and bring operations back to the United States from abroad?

Answer. Intel has maintained the majority of its advanced manufacturing, R&D, and intellectual property within the United States. Intel has more than 53,000 employees in high-tech jobs in the U.S., with most being located at our large manufacturing sites in Arizona, Oregon, and New Mexico. In fact, according to a recent economic study by a third party, we directly contributed more than $25 billion to the U.S. GDP in 2019.

The FDII is an important provision that helps us to make decision to perform manufacturing and hold IP in the U.S. High-tech manufacturing demands a huge upfront investment in rigorous product R&D and process IP development in order to successfully manufacture very complex products at high volume. We have invested more than $35 billion since 2015 to develop groundbreaking technologies,

leveraging the semiconductor manufacturing base we established in the U.S. over 40 years ago. The FDII deduction encourages companies to develop and mature their IP in the U.S. which leads to the creation of more jobs—new manufacturing lines for new products, incorporating new technologies into existing processes and products, etc. We would strongly encourage Congress to maintain the FDII deduction to help to encourage U.S. R&D and ownership of IP which are important for a strong manufacturing ecosystem.

QUESTIONS SUBMITTED BY HON. TODD YOUNG

Question. Thank you for Intel's support of my Innovation and Jobs Act and for sharing during the hearing how this bill would address the semiconductor shortage problem Hoosier companies and businesses nationwide are experiencing.

To follow up on our conversation, if Congress allows the full expensing of R&D costs to expire at the end of this year, do you anticipate that U.S. companies may be incentivized to move high skilled jobs and R&D activities overseas?

Answer. Eliminating the ability to immediately deduct R&D expenses would result in the U.S. having one of the world's worst, and most regressive, R&D policies at a time when the U.S. should be encouraging businesses to maximize R&D investments. The ability to deduct R&D is globally recognized because successful innovation is unpredictable.

Intel invests $13 billion dollars annually into R&D on average, which is about 20 percent of our revenue. Intel's commitment to innovation is constant, particularly as we advance our manufacturing process. The inability to deduct R&D expenses effectively results in a permanent tax difference that would discourage reinvesting into this critical function. According to a November 2018 Congressional Budget Office (CBO) report, amortizing R&D expenses "will reduce the incentive to invest in R&D." Moreover, an EY report [1] cited that amortizing R&D spending would lead to the loss of over 20,000 U.S. R&D jobs in the first 5 years, with that number increasing to nearly 60,000 in the following 5 years.

Semiconductors are a critical component in fueling innovation and enabling technology from medical equipment to smart phones to clean energy. The ability to deduct R&D expenses is important for businesses of all sizes and is directly tied to investment and jobs. In fact, according to an EY study, every $1 billion in R&D spending equated to 17,000 jobs supported. We urge Congress to pass the bipartisan American Innovation and Jobs Act (S. 749) which would maintain this immediate deduction.

PREPARED STATEMENT OF MICHELLE HANLON, PH.D., HOWARD W. JOHNSON PROFESSOR, SLOAN SCHOOL OF MANAGEMENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Chairman Wyden, Ranking Member Crapo, and distinguished members of the committee, I appreciate the opportunity to participate in this hearing about the effect of taxes on domestic manufacturing. I am a chaired professor at the Sloan School of Management at the Massachusetts Institute of Technology. My research focuses on the effects of taxation and accounting on corporate decision-making and on the intersection of tax and accounting such as the accounting for income tax and book-tax conformity. I am an editor at the *Journal of Accounting and Economics* and I am the area head of economics, finance, and accounting at the Sloan School.

The main points of my testimony are as follows. First, a competitive statutory corporate income tax rate is an important tax policy objective and we should endeavor to maintain a rate that is competitive with the rest of the developed world. Second, research and development incentives are vital and the evidence suggests that such policies are effective at incentivizing research and development in the U.S. Third, targeted tax incentives for strategic industries or activities can also be effective but the trade-off should not be a relatively high corporate statutory income tax rate. Finally, reenacting a corporate alternative minimum tax could negate tax incentives for investment and would not be a good policy option, especially if the minimum tax were based on financial accounting income.

MAINTAINING A COMPETITIVE CORPORATE INCOME TAX RATE

Prior to the Tax Cuts and Jobs Act of 2017 (TCJA), the U.S. had one of the highest statutory corporate income tax rates in the world at 35 percent. As I (and many others) testified in prior congressional hearings, that high corporate income tax rate in combination with our prior international tax regime led to many negative economic outcomes. Some of these outcomes included, for example, economic incentives to move operations and profits to other countries, high cash holdings in foreign subsidiaries, higher corporate debt in the U.S., and a relatively disadvantaged competitive position in the market for corporate control (*i.e.,* acquisitions).[1] Further, there was pressure for companies to invert, or leave, the U.S. in terms of tax residency.

In particular, our high corporate tax rate and international tax regime prior to the TCJA led, in some cases, to strong incentives to manufacture in foreign locations. For example, U.S. multinational corporations that placed high-profit intellectual property (IP) in foreign subsidiaries to benefit from the lower tax rates in those jurisdictions often structured their operations in a manner that would not subject the foreign profits to current U.S. taxation (*e.g.,* subpart F). In many cases, this meant conducting manufacturing outside of the U.S. Thus, our tax rules prior to the TCJA resulted in incentives to manufacture outside of the U.S. because to minimize the taxation of intangible profits on sales outside the United States, foreign manufacturing was necessary.[2]

After the enactment of the TCJA, our Federal corporate statutory income tax rate is now 21 percent. According to OECD data, our rate including subnational taxes is estimated to be 25.8 percent.[3] The OECD reports that the OECD average combined national and subnational rate is 23.3 percent and the G20 average rate is 26.9 percent.[4] Thus, our corporate income tax rate is now clearly more in line with the average corporate income tax rates around the world; but we are by no means a tax haven. The U.S. now has a competitive domestic corporate income tax rate.

The research consensus is that tax policy affects investment (Hassett and Hubbard 2002; Hassett and Newmark 2008; Desai and Goolsbee 2004; Djankov et al. 2010; Bond and Xing 2015). A large area of research regarding tax rates and investment is the cross-country study of tax rates and foreign direct investment. The evidence from these studies is consistent with a negative relation—as host country tax rates decrease, foreign direct investment into that jurisdiction increases, all else constant.[5]

It is difficult to assess the importance of certain TCJA provisions or attribute the changes in observed corporate behavior to any one part of the TCJA (or in many cases even to the TCJA as a whole) using archival data. However, my co-authors and I recently surveyed some U.S. companies about the TCJA.[6] We asked companies what provisions of the TCJA were important to their business using a rating scale between 0 (not important at all) and 4 (very important). Of the 161 C corporations (both multinational and domestic-only businesses) that answered the question, the lowering of the corporate statutory income tax rate received a rating of important or very important by 89 percent of the respondents. No other provision of the TCJA received this high of rating in the subsample of C corporations. This is consistent with ex ante surveys about tax reform. For example, in the early 2000s, the Tax Council Policy Institute asked multinational corporations to rank tax reform options; a lower corporate tax rate was the highest rated option.[7]

We also asked what provisions within the TCJA led to changes in behavior, specifically in investment in the United States. Tax policy is only one of many factors that determines whether or where a company will make an investment. For example, other determinants include the availability of positive net present value investment opportunities to invest in, proximity to customers, supply of qualified labor, government regulations and requirements in each jurisdiction, as well as other factors. Thus, I would not expect the TCJA to change investment decisions at every company. Consistent with this, in our sample of firms, roughly 26 percent of C corporations responded that they increased U.S. capital investment in response to the

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[1] See Foley et al. (2007), Graham et al. (2010), and Hanlon et al. (2015) for research on these outcomes.
[2] The incentives to manufacture outside the U.S. also occur in other fact patterns.
[3] *https://stats.oecd.org/Index.aspx?DataSetCode=TABLE_I1.*
[4] *http://www.oecd.org/tax/tax-policy/tax-database/tax-database-update-note.pdf.*
[5] *See* DeMooij and Ederveen (2003) for a summary of the research, and Becker et al. (2012).
[6] Graham, Hanlon, and Shroff (2021).
[7] Tax Council Policy Institute (2005).

TCJA. When asked about how important certain provisions were in the TCJA in terms of decision-making with regard to capital investment, 85 percent of these C corporations that increased U.S. capital investment said that the reduction in the corporate statutory income tax rate was important or very important in their company's decision to increase U.S. capital investment.

The changes in the TCJA, including the lower statutory corporate income tax rate, full expensing of domestic investment, and the Foreign Derived Intangible Income (FDII) provision, altered incentives to place IP offshore and altered incentives to manufacture offshore. While there are some examples of companies repatriating IP back to the U.S., it is not clear that repatriation of existing IP back to the U.S. will be a dominant decision as a result of the TCJA.[8] However, in terms of a company's next marginal decision, the tax incentives under the TCJA are more likely to lead to the decision to retain IP in the U.S. and also to manufacture in the U.S., all else constant. The TCJA provisions (*e.g.,* lower corporate tax rate and FDII) help mitigate the incentives to manufacture offshore and the provisions could be strengthened by giving taxpayers certainty that those provisions will remain in place. Finally, the evidence so far with respect to another outcome after the TCJA is that corporate inversions out of the U.S. have stopped. The pressure to leave the U.S. because of our previously onerous tax system has subsided.

TAX INCENTIVES OTHER THAN A COMPETITIVE INCOME TAX RATE

Beyond competitive tax rates, targeted tax incentives are often desirable. The tax treatment of research and experimentation/development is a good example. When a business determines whether a research project they are considering is a worthy investment, it will conduct a cost-benefit calculation to determine the budget and amount of investment. In such an analysis, the business will focus more on benefits to itself rather than benefits to society. However, research and the production of new knowledge have externalities, in other words, benefits extending past the business to society as a whole. A clear, current example are the COVID–19 vaccines. The profits from the vaccines to Pfizer, Moderna, and Johnson & Johnson will be small compared to the societal and economic benefits of ending the pandemic. In many such situations, businesses are likely to undertake too little research because they would bear all of the costs but would not reap all of the benefits. As a result, one of the policy arguments for the research tax credit is that because society reaps some of the benefits it should also bear some of the costs for firms to undertake more research. Thus, incentives should be provided to companies to avoid the underinvestment problem from a societal perspective. One way to do this is through tax incentives.

Created in 1981, the U.S. research credit is in IRC section 41 Credit for Increasing Research Activities (known as the research and development credit, research and experimentation credit, or simply the research credit—the term I will use).[9] At a very high level, taxpayers can claim a research credit equal to 20 percent of the amount of qualified research expenses in a taxable year that exceed a "base" amount for that year. In other words, the credit is for incremental spending on research. There is a simplified alternative approach (14 percent and a different base) and start-up firms have a different base reference than mature firms. The tax credit works in conjunction with allowed deductions for research under section 174; the deductions allowed are reduced by the credit, or, alternatively, taxpayers can elect to claim a reduced credit instead of reducing deductions. Unused research credits can be carried forward for 20 years. In addition, because start-ups often have little to no income tax liability, certain start-ups can elect to apply a portion of their research credit against their payroll tax liability instead of their regular tax liability.

Innovation in the manufacturing industry is driven by research and development intended to improve, for example, manufacturing methods, processes, and systems as well as to create and develop products.[10] According to IRS data for 2014 (the last year with research credit data available on the IRS website), the manufacturing industry claimed roughly 60 percent of the research credits claimed by corporations.[11]

The research that examines the effectiveness of tax incentives for research and development (R&D) spending provides evidence consistent with the conclusion the

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[8] Horst (2020).

[9] The credit was made permanent in the Protecting Americans from Tax Hikes (PATH) Act of 2015.

[10] *See* Pisano and Shih (2012) for a discussion of why and under what conditions keeping manufacturing and R&D geographically close increases innovation.

[11] *https://www.irs.gov/statistics/soi-ta-stats -corporation-research-credit.*

research credit increases R&D spending and that the benefits of the research credit exceed the costs (Berger 1993; Gupta et al. 2011; Rao 2016; Bloom et al. 2019).[12] Many other countries and many of the U.S. States have research incentives as well.[13]

Similar to the research credit, there may be other situations where there are societal or strategic reasons to provide tax incentives for certain activities due to the externalities. Some examples include "green energy" (*e.g.,* wind and solar energy, electric cars and battery/electricity storage capabilities). Such investments are likely not profitable for an individual business until there is a basic level of development, a critical mass, and ready infrastructure for the broad use of these alternative energy sources. Thus, if a policy goal is to motivate a shift to such alternative energy sources and reduce the social and environmental cost of carbon, then it makes sense for the government to subsidize, through the tax code or otherwise, these activities until they are profitable—when a company's cost-benefit analysis would lead it to invest absent a tax credit.[14]

A recent, but slightly different, example includes concerns about the lack of supply and manufacturing of certain goods in the U.S., in particular semiconductors. The concerns existed before, but have been exacerbated by the current global pandemic. Much of the manufacturing of semiconductors occurs outside of the U.S. and there is now a global shortage of semiconductors. One piece of legislation that attempts to address diversification of sourcing and increase production "at home" in the U.S. is the Creating Helpful Incentives to Produce Semiconductors for America Act or the CHIPS for America Act. A portion of the CHIPS for America Act yet to be enacted is a proposal for an investment tax credit for investments in qualified semiconductor equipment or qualified semiconductor manufacturing facilities. My understanding of the proposal is that the investment tax credit would start at a 40 percent credit for equipment acquired, or facility investment expenditures incurred, before January 1, 2025, and decrease in amount over time (30 percent for investments in 2025; 20 percent for investments in 2026, and be completely phased out (0 percent credit) in 2027). Based on the research evidence with respect to other investment incentives, it is likely that such a credit would incentivize investment in production facilities and equipment in the U.S. However, to maximize the responsiveness, the statutory corporate tax rate will need to remain competitive such that the tax burden going forward does not put manufacturing in the U.S. at a competitive disadvantage relative to manufacturing overseas. If there are significant risks of future tax rate increases, temporary investment incentives will have much less impact.

Another example of a tax incentive beyond a competitive tax rate, is what is known as bonus depreciation. This is not a tax credit but rather accelerated depreciation deductions for qualified investments. Bonus depreciation was introduced in the U.S. in 2002 and 2003 with the policy intent of increasing investment. The original provisions provided for an immediate deduction of up to 30 percent (2002 legislation) than 50 percent (2003 legislation) of the cost of certain assets put in place during a specified time period. Studies by House and Shapiro (2008) and Zwick and Mahon (2017) provide evidence consistent with bonus depreciation leading to significant increases in investment. The investment response varies based on expected benefits, for example, the response is concentrated in asset classes where the benefits of bonus depreciation would be the greatest and responses are stronger when cash flow benefits are immediate. In addition, small firms respond more to the incentive than large firms. While the empirical results are possibly due, in part, to some timing effect (investments made earlier than otherwise would have been the case) and substitution effect (from asset classes not eligible for bonus depreciation), the results show that investment decisions are sensitive to tax policy.

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[12] For example, Berger (1993) estimates that the R&D spending-to-sales ratio for firms that can use the credit increased after 1981. Berger (1993) estimates that the credit induced $1.74 of additional spending per dollar of foregone revenue. Gupta et al. (2011) estimate that for firms that qualified for the credit, there is an additional $2.08 of additional research spending per dollar of foregone revenue. *See* Hall and Van Reenen (2000) for a review of the literature.

[13] In comparison to other countries, a recent OECD report concludes that the U.S. R&D tax subsidy rate is below the OECD median but that U.S. total government support to business R&D as a percent of GDP is higher than the OECD median (OECD (2019), "R&D Tax Incentives in the United States, 2019," *https://www.oecd.org/sti/rd-tax-stats-united-states.pdf,* Directorate for Science, Technology and Innovation, December 2019).

[14] This includes tax credits to consumers, which allows businesses to charge higher prices (*e.g.,* electric cars).

The bonus depreciation provision was expanded and contracted over the ensuing years. In the TCJA, bonus depreciation was expanded to 100 percent, full expensing. Meaning the cost of qualified asset purchases (new or used) can be deducted in full in the year of acquisition. The provision applies to property placed in service after September 27, 2017 and before January 1, 2023. Thereafter, the bonus depreciation percentage phases down annually through 2026.[15] We asked about the TCJA expansion of bonus depreciation in our recent survey of tax directors. The data are that 53 percent of the C corporation respondents to the question rated the expansion of bonus depreciation as important or very important to their company.[16]

I also note that prior to the TCJA there was an incentive in the tax code called the Domestic Production Activities Deduction. This provision was in section 199 of the tax code and was enacted in the American Jobs Creation Act (AJCA) of 2004. The provision allowed a deduction of a portion of manufacturing income. The research evidence regarding this provision is generally that it did serve to increase investment (Lester 2019; Ohrn 2018).[17] However, in my opinion, lower overall business income tax rates are a much simpler and better approach of lessening the tax burden on manufacturers than the prior section 199 Domestic Production Activities Deduction.

Looking forward with respect to investment tax incentives, it is important to consider future changes scheduled in the TCJA. Beginning in 2022, the TCJA requires research expenditures to be capitalized and amortized ratably over a 5-year period rather than immediately deducted as is the case under current law. In addition, bonus depreciation begins to phase down starting in 2023. Thus, both of these tax incentives are scheduled to weaken, not strengthen, in the near future.

Another, less obvious, upcoming change from the TCJA that may weaken some investment incentives is in the interest deduction limitation (section 163(j)).[18] The rule has other components, but primarily the TCJA's modification to section 163(j) limits the net business interest expense deduction to 30 percent of "adjusted taxable income." Currently, "adjusted taxable income" is defined as the tax-based measure of the financial statement metric of EBITDA—earnings before interest, taxes, depreciation, and amortization. In other words, it is taxable income after adding back interest expense deductions, depreciation deductions, and amortization deductions. However, for taxable years beginning after 2021, the "adjusted taxable income" computation will change to be a tax-based measure of EBIT—earnings before interest and taxes. To put this directly, depreciation and amortization will no longer be added back to taxable income, making "adjusted taxable income" a lower number than it was when it was a proxy for EBITDA. What all this means is that after this change takes effect, more interest deductions will be disallowed, all else constant. The part that is less obvious is that the EBIT-based limitation could, in some cases, weaken the incentive effects of bonus depreciation. This will occur because more depreciation expense from new investment will lower the tax-based EBIT and thus, lower the interest limitation. Thus, in some cases, part of the tax benefits a company obtains from additional depreciation will be offset by a loss in interest expense deductions, even if the new investment is equity financed.

A CORPORATE MINIMUM TAX WOULD NEGATE MANY TAX INCENTIVES

Above, I have discussed the benefits of certain tax incentives and some scheduled changes that will affect them. In addition, there are proposed tax changes that would negate, possibly unknowingly, many investment incentives. These proposals often include using financial accounting income as a backstop or benchmark for taxable income. When considering such proposals, it is important to be cognizant that financial accounting income and taxable income are computed to serve very different purposes. Financial accounting is meant to provide outside stakeholders, for example investors and creditors, with information about the firm's economic performance. Taxable income is intended to assess tax liability in a fair and equitable manner

[15] Property with longer production periods are allowed an additional year of full expensing. The TCJA also increased the section 179 expense election limits.

[16] We also have a small number of pass-through businesses in our sample, 19 of which answered this question. Of those businesses, 74 percent responded that the expansion of bonus deprecation in the TCJA was important or very important to their company.

[17] There is some evidence that the effects were concentrated in domestic-only companies (the effects were not strong for multinational companies) and that there was some substitution effect such that the increase in investment came at the cost of a decrease in labor (Lester 2019).

[18] I describe the calculations under section 163(j) at a very high level, abstracting from details. There is an exception for small businesses. The limitation was modified for 2019 and 2020 as part of the CARES Act.

in order to raise revenue for public finance and achieve a variety of other social objectives.

President Biden's tax plans include such a proposal through the resurrection of the alternative minimum tax (AMT) for corporations.[19] We do not have all the details, but his campaign plan advocated for a minimum tax on corporations with book profits of $100 million or higher. Corporations would pay the greater of their regular corporate income tax or the 15 percent AMT while still allowing for net operating loss carryovers and foreign tax credits.

The Biden proposal is reminiscent of an adjustment put into place in the Tax Reform Act of 1986—the Business Untaxed Reported Profits (BURP) adjustment (also called the Book Income Adjustment (BIA)). The BIA was computed as 50 percent of the difference between the pre-tax financial accounting income and the alternative minimum tax base (before the BIA) for U.S. entities. If this was positive, meaning financial accounting income exceeded the pre-BIA AMT, then the 50-percent differential was added. If the pre-BIA AMT base was higher than financial accounting income, then no adjustment was made. When enacted, this adjustment was to apply for 1987–1989 and then a new method of computing the AMT would apply.

President Biden's proposal seems to be targeting companies who appear to report large accounting profits but show little-to-no tax expense in their financial statements. It is difficult to discern if a company is paying U.S. taxes based on financial accounting disclosures. However, even if some companies are not paying income taxes because their legitimate deductions are high, creating a minimum tax based on financial accounting earnings is not the answer.

First, an alternative minimum tax, especially one using financial accounting earnings, significantly increases complexity. Second, such a policy negates the targeted policies I discuss above. For example, financial accounting employs (generally) straight-line depreciation over the useful lives of assets. This results in the expense being recorded in the same accounting period as the income earned from the asset. Thus, using financial accounting income as part of an AMT base will essentially take the tax benefits from bonus depreciation away because depreciation is not accelerated for financial accounting.[20] A similar result will occur for other investment incentives in the tax code and will weaken the effectiveness of these policies in incentivizing investment.[21]

In other words, the incentive would be present in the regular tax system but not in the alternative tax system. Why create such a complicated tax policy where incentives appear to be there but really are not? It would be better to prioritize the goals of the tax system and write the tax code in a manner consistent with those priorities.

Finally, using financial accounting income as part of the alternative minimum tax base creates another problem. The evidence from the studies of outcomes around the Tax Reform Act of 1986 suggest that companies responded to such a policy by altering how they report financial accounting income—companies deferred more income into future years.[22] This behavioral response poses serious risks for financial accounting and the capital markets. If managers are not reporting income in a manner that best conveys their private information about firm performance, the information in financial accounting earnings will decline. In addition, if companies start reporting lower financial accounting earnings as a result of the minimum tax, the minimum tax will not raise as much revenue as revenue estimators likely expect.

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[19] The corporate alternative minimum tax was abolished in the Tax Cuts and Jobs Act in 2017.

[20] Depending on how the rules are written, the effect of the minimum tax could be very harsh. For example, during periods of accelerated depreciation the minimum tax would apply, denying the deduction, while in later periods with no remaining taxable depreciation, the higher taxable income would be the tax base.

[21] Park (2016) examines a 1999 tax change in the depreciation allowances for the corporate alternative minimum tax. Park (2016) finds that firms subject to the AMT increased investment after asset lives were shortened for AMT purposes. The evidence is consistent with an AMT system mitigating investment incentives. *See* Hanlon and Shevlin (2005) for a general discussion of book-tax conformity and increasing the links between the two systems.

[22] Gramlich (1991); Dhaliwal and Wang (1992); Boynton et al. (1992); Manzon (1992); Wang (1994); Dharmapala (2020). *See also* Choi et al. (2001) for some caution with respect to some of the results in the papers above.

CONCLUSIONS

There are many factors that affect a company's decisions about whether and where to invest; taxation is often one of the factors. Maintaining competitive statutory business income tax rates is an important tax policy in terms of attracting and increasing investment. Other incentives such as the research credit, and likely similarly the proposed tax credit for investment in equipment and facilities for the manufacture of semiconductors, are also effective in incentivizing increased investment. However, the perceived risk of future tax rate increases will likely offset targeted incentives to invest, as will some scheduled changes in the TCJA and some proposed changes such as a financial-accounting-based alternative minimum tax.

Thank you again for inviting me to participate in this hearing. I look forward to your questions.

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QUESTIONS SUBMITTED FOR THE RECORD TO MICHELLE HANLON, PH.D.

QUESTIONS SUBMITTED BY HON. SHERROD BROWN

Question. Are there existing provisions of tax law that, although unintended, provide an incentive for corporations to locate factories or jobs abroad? How should Congress reform these provisions of tax law?

Answer. Yes. If a U.S. corporation placed high-profit intellectual property (IP) in foreign subsidiaries to benefit from the lower tax rates in those jurisdictions, the company would also have to manufacture outside of the United States in order to avoid subpart F inclusion of the intangible profits on sales outside the United States. The incentives to manufacture outside the United States were strong in many cases when the IP was just licensed to the foreign entity as well.

The TCJA lessoned the incentives to place IP offshore which would mean the next marginal decision in terms of manufacturing related to the now-onshore IP could be done in the United States. In other words, the TCJA relieved some of the pressure (necessity) to manufacture outside the United States.

Uncertainty about the TCJA, however, has lead to uncertainty as to whether to retain IP in the United States. If the FDII deduction is repealed and the corporate tax rate raised, then the old incentives that were present prior to the TCJA will probably become very important again. Even now it is not clear that companies are retaining as much IP as they otherwise would because they do not think the rules in the TCJA will remain in place.

A competitive and stable tax policy are important for attracting investment and manufacturing to the United States.

Question. The threats to domestic manufacturing associated with our reliance on foreign supply chains are not industry specific. From semiconductors to PPE and other essential medical supplies to pharmaceuticals, our reliance on foreign supply chains threatens not only the health and safety of Ohioans, it impacts their livelihoods and the economic health of our communities.

Members of this committee have put forward some strong proposals to invest in supply chain resiliency right here in the United States in order to better support hardworking Americans and our domestic manufacturing facilities. Last year, I introduced the Protecting American Heroes act to increase U.S. production of PPE, both to support our COVID–19 response and to better prepare for future public health emergencies. Senator Portman and I have worked together on our Build America, Buy America Act, which would both strengthen domestic manufacturing and support American workers. And Senator Cassidy and I are drafting legislation

to create a domestic API reserve and make our pharmaceutical supply chain more resilient.

With his recent executive order on U.S. supply chains, President Biden has acknowledged how important it is that we act to strengthen the resiliency of our domestic supply chains. We have a once in a generation opportunity to advance policy to strengthen domestic manufacturing.

Beyond tax policy, what are some other legislative concepts that could help support domestic manufacturing and deliver for American workers? Please share a few ideas on policy proposals that would help strengthen the resiliency of our domestic supply chains.

Answer. I am an accounting and tax professor so would only consider myself an expert in those areas. Thus, answers beyond tax policy are more of a personal opinion. But here are some thoughts. (1) Increase opportunities for training so that there are more qualified workers for today's manufacturing facilities. This would include vocational schools, junior colleges, and trade schools. This would also include incentives for companies to provide more on-the-job training or maybe apprenticeship programs. (2) Get America out of the mindset that everyone needs to attend a 4-year college. Some people attending a 4-year college would be better served learning a trade or high-tech manufacturing skills, or starting their own business—construction, plumbing, etc. (3) Establish/maintain a tax policy where businesses actually want to start and operate here. Most importantly, maintain a competitive tax rate on business income and secondly provide investment incentives and incentives for workforce training. Reducing uncertainty in tax policy and simplifying compliance would also help.

QUESTIONS SUBMITTED BY HON. TODD YOUNG

Question. In your hearing testimony you detailed the various tools that the Federal Government uses to incentivize research and development. In particular, I am interested in the benefit gained by the Research and Development ("R&D") Tax Credit as well as the immediate expensing allowed under section 174. As I mentioned during the hearing, my American Innovation and Jobs Act would preserve the important expensing provision beyond the end of this year, as well as expand the R&D Tax Credit to provide more benefit to start-ups and small businesses.

Generally speaking, what does the expert research say about the pay-offs for Federal investment in R&D? How does Federal investment affect companies' R&D expenditures?

Answer. The empirical evidence about the R&D tax credit is that it "pays off." That means that every dollar the government spends in terms of tax credit yields more than a dollar in R&D spending. The research is pretty settled and clear on this point.

Question. While the breadth of research indicates that Federal incentives for R&D is overall a good investment, we know that the type of incentive offered matters greatly for different companies.

Can you please explain the general economics of start-ups and why expensing of R&D may not benefit them, and therefore why a credit is instead more attractive and useful to start-ups and small businesses?

Answer. Start-up companies are often not profitable. Thus, deductions and nonrefundable credits are not very valuable to them because they have to wait until they are profitable to monetize; this could be years into the future and would only lead to an eventual benefit if the tax code allows carryforwards. One solution is to make the credits refundable or able to offset a different type of tax. Currently the tax code allows start-up firms to use the research credit against their payroll tax liability (up to a capped amount). This is important because it makes the research credit valuable to start-ups and makes start-ups more competitive with large businesses.

Question. While tax credits like the R&D Tax Credit are important tools that the Federal Government can use to encourage U.S. firms to invest more in publicly beneficial areas such as R&D, the strength of that incentive can be affected by other parts of the tax code.

Can you expand on how the impact of R&D incentives such as the R&D Tax Credit or full expensing would be affected by the tax increases proposed by the Biden

administration, such as raising the corporate tax rate or instituting an alternative minimum tax?

Answer. Raising the corporate rate puts the U.S. at a competitive disadvantage in terms of investment. Instituting an alternative minimum tax would offset the R&D tax credit and would offset full expensing, unless those two tax provisions are allowed in the alternative tax system. In other words, the alternative minimum tax system would take away some of the incentives provided by the R&D tax credit and by full expensing.

PREPARED STATEMENT OF JONATHAN JENNINGS, VICE PRESIDENT, GLOBAL COMMODITY PURCHASING AND SUPPLIER TECHNICAL ASSISTANCE, FORD MOTOR COMPANY

Thank you, Chairman Wyden, Ranking Member Crapo, and members of the committee, for the opportunity to speak to you today.

I'm honored to be representing the U.S. auto industry, which accounts for 18 million U.S. jobs. The manufacturers, suppliers and dealers that make up this complex system pump $953 billion into the U.S. economy each year.

It's especially meaningful to be testifying in front of not one, but both of my home State Senators, Rob Portman and Sherrod Brown, and Ford's home State Senator, Debbie Stabenow. Our 53,000 Ford employees and more than 330,000 supplier and community partners are so fortunate to have you champion auto manufacturing in Washington.

My career at Ford started in 1993 as a manufacturing engineer in Cleveland. Since then, I've worked around the world for Ford, focusing on developing a well-tuned global supply chain. I'm speaking to you today as Ford's vice president of global commodity purchasing and supplier technical assistance, which purchased more than $48 billion in goods and services from more than 5,000 U.S. suppliers in 46 States in 2019.

At Ford, we see ourselves as America's automaker—we employ the most hourly U.S. autoworkers, assemble more vehicles in the U.S., and export more vehicles *from* here than any other automaker. So we feel uniquely positioned to speak to the business environment needed to continue our winning strategy.

We've supported communities and families across this country for 117 years. When America has needed us to step up and aid the safety and security of the Nation, we have responded. From World War II to this global pandemic, we've been on the front lines.

Starting last year, Ford, along with our UAW partners, produced masks, reusable gowns, test collection kits, face shields, and ventilators to meet the COVID–19 emergency. Our ability to quickly shift from manufacturing vehicles to manufacturing personal protective equipment was largely because of our unique U.S. manufacturing footprint. Many of the supplies we used to make face shields, respirators, and ventilators were already in our U.S. plants and warehouses.

It's a case study in how powerful and responsive our industry can be if the materials and parts we need to build a new generation of vehicles are easily attainable. And that brings us to today.

The global industry is driving a transportation revolution. The shift to electric vehicles will reduce our carbon footprint and change how auto manufacturers assemble vehicles.

By 2040, more than half the world's vehicles will be electric, and the vast majority of new cars sold will be electric. Right now, China is home to 73 percent of the worldwide capacity for lithium-ion batteries, followed by the U.S., far behind in second place, with 12 percent. This is simply unacceptable.

Over the next few years, the growth in new manufacturing will be faster in Asia than in the U.S., further reducing our share of global battery manufacturing.

Recently, we've seen a semiconductor shortage force production cutbacks throughout the industry. Every auto company manufacturing in the U.S. has had production interrupted—Ford workers have seen weeks of suspended production at plants including Louisville, Chicago and Dearborn.

The semiconductor situation underscores our supply chain risk. There are dangerous parallels to the way electric vehicle batteries are sourced and developed.

In short, we must collectively do more to protect the future of manufacturing in America.

Ford already has committed $22 billion to develop a new generation of electric vehicles and to reach carbon neutrality by 2050.

Last year, we spent more than $5 billion in research and development in the U.S., representing 15,000 engineers and software developers, vehicle and powertrain prototypes, test labs, and equipment.

That investment is reflected in the safety and connected vehicle technology you'll see in an all-electric version of our best-selling Transit commercial van, which will be built at our Kansas City plant, and an all-electric version of our best-selling F–150 pickup, which will be built in Dearborn.

We've been clear and are committed: the future is electric, and the future must include America.

For the U.S. auto sector to succeed, we'll need Congress and the administration to support market-based consumer and manufacturing incentives, innovative new technologies, labor and plant transitions, and supply chain security.

We appreciate Senator Stabenow's leadership, not just as a champion for expanding the electric vehicle consumer tax credit, but for her recent introduction of the American Jobs in Energy Manufacturing Act. We embrace the proposal by President Biden that would provide a 10-percent advanceable tax credit for companies creating U.S. manufacturing jobs. We also support increasing existing R&D incentives for advanced battery and electric vehicle development, and continued immediate expensing of R&D.

Together, public and private support of electrification will ensure America not only competes as a leader globally, but wins. This is particularly important as Europe and China are already moving forward with robust electric vehicle adoption strategies and policies.

We at Ford stand ready to work with this committee, Congress and the administration on efforts to not only deliver world-class electric vehicles, but transition the supply chain and infrastructure to assure future economic and transportation stability and security for America.

Thank you.

QUESTIONS SUBMITTED FOR THE RECORD TO JONATHAN JENNINGS

QUESTIONS SUBMITTED BY HON. SHERROD BROWN

Question. Are there existing provisions of tax law that, although unintended, provide an incentive for corporations to locate factories or jobs abroad? How should Congress reform these provisions of tax law?

Answer. Unlike most other countries, the U.S. does not employ a value-added tax as a substantial source of government revenue. Instead, the United States more greatly relies on income taxes. The corporate income tax, by its very nature, functions as a disincentive to locate valuable assets and people within a country. Under the arms-length principle and OECD transfer pricing guidelines, taxable earnings are ascribed to the value creation attributable to valuable assets and people. Accordingly, corporations can reduce income taxes within a country by reducing the valuable property and people they locate within the country.

Ford employs more Americans and produces more vehicles in America than does any other vehicle manufacturer. Also, unlike most other vehicle manufacturers, the value of Ford's vehicle exports from the U.S. exceeds the value of its imports. Accordingly, a tax (like the border-adjusted tax that was proposed several years ago) that taxes earnings from domestic sales of domestic production and imports but excludes exports would be favorable for Ford. Moreover, such a tax would remove the existing disincentives to U.S. investment that are inherent in the corporate income tax.

One component of the current corporate income tax, the Global Intangible Low-Taxed Income (GILTI) tax, does potentially provide an incentive to locate factories

or jobs abroad. Because of the way the GILTI is constructed, taxpayers can increase non-taxed foreign earnings by increasing foreign assets. And, to the extent a taxpayer has excess GILTI foreign tax credits, it can move income to GILTI subsidiaries tax-free.

For Ford, as GILTI is presently constituted, these incentives to move valuable assets and people to GILTI subsidiaries are not significant enough to affect decision-making. However, if the GILTI provision is substantially changed, their significance could greatly increase. We are particularly concerned that modification to apply GILTI on a country-by-country could lead to very negative results. Ford has not shifted income to tax haven countries. But, depending on its specific formulation, country-by-country GILTI application could nevertheless have an unfair and perhaps unintended result. For example, because of tax attribute carryovers, Ford's high-tax-country subsidiaries that have incurred recent losses may not pay foreign cash tax. It would be unfair and inappropriate for the income of these subsidiaries to be subject to GILTI; Ford would have received no GILTI benefit for the earlier losses incurred.

Question. Manufacturers across Ohio—from the Jeep plant in Toledo and the Honda plants in Marysville and East Liberty, OH to the Navistar facility in Springfield and the PACCAR facility in Kenton to the Whirlpool plant in Clyde—are struggling as a result of the global shortage of semiconductor chips.

Given your testimony at last week's hearing, it is clear you share my concern over this semiconductor shortage. What more can Congress do to help support domestic manufacturers withstand this global shortage and strengthen our supply chains so we don't face a similar crisis in the future?

Answer. Our industry faces a bifurcated challenge. The first is the immediate crisis arising from our inability to obtain the allocation of chips needed to maintain production current vehicle demand. What is needed to address this immediate shortage is for our semiconductor manufacturers to reallocate a portion of their production back to the auto industry. To this end, we have been in extensive touch with this administration and urged them to urge the governments of the leading chip manufacturers to contact their manufacturers and make the necessary reallocation immediately.

The second challenge is the need to reshore more semiconductor manufacturing to the U.S. We are supportive of the broad proposals in the President's recently announced infrastructure plan that could provide incentives to do this. Additionally, we are also supportive of the CHIPS Act that also aims to provide domestic production incentives. Regarding any new incentives for domestic production, it will be important that producers receiving them also make semiconductors that can be used by the domestic auto industry. Without this, we could find ourselves in a situation where American taxpayers pay for incentives that then do not work to fix the current crisis.

Question. The threats to domestic manufacturing associated with our reliance on foreign supply chains are not industry specific. From semiconductors to PPE and other essential medical supplies to pharmaceuticals, our reliance on foreign supply chains threatens not only the health and safety of Ohioans, it impacts their livelihoods and the economic health of our communities.

Members of this committee have put forward some strong proposals to invest in supply chain resiliency right here in the U.S. in order to better support hardworking Americans and our domestic manufacturing facilities. Last year, I introduced the Protecting American Heroes act to increase U.S. production of PPE, both to support our COVID–19 response and to better prepare for future public health emergencies. Senator Portman and I have worked together on our Build America, Buy America Act, which would both strengthen domestic manufacturing and support American workers. And Senator Cassidy and I are drafting legislation to create a domestic API reserve and make our pharmaceutical supply chain more resilient.

With his recent executive order on U.S. supply chains, President Biden has acknowledged how important it is that we act to strengthen the resiliency of our domestic supply chains. We have a once in a generation opportunity to advance policy to strengthen domestic manufacturing.

Beyond tax policy, what are some other legislative concepts that could help support domestic manufacturing and deliver for American workers? Please share a few ideas on policy proposals that would help strengthen the resiliency of our domestic supply chains.

Answer. As you noted in your question, tax policy is particularly instrumental in addressing these concerns, still it is not the only policy tool. In general, the goal is to make the U.S. more globally competitive for manufacturing. The tax code plays a big role in this because it creates incentives for additional investment and disincentives by raising tax rates beyond those of other jurisdictions. Trade policy also plays a major role. The more trade agreements we have with foreign nations that allow our manufacturers to avoid foreign nations' high tariff rates will create an incentive for increased U.S. production in order to access these lower rates. Seeking to obtain reciprocity between foreign nations' tariff rates (frequently higher) and America's (usually lower) would greatly expand our export opportunities. Also, confronting other nations' currency manipulation when it occurs would be another positive step, because such manipulation does not just help close the market of the manipulating country, but reduces U.S. competitiveness with that country's manufacturers in all other foreign markets too. In the end, supply chains became more foreign-based because it was more cost competitive to operate abroad. We must address this through every tool we can; tax and trade options rank should be at the top of the list.

QUESTION SUBMITTED BY HON. TODD YOUNG

Question. I enjoyed our discussion during the hearing regarding the impact that my American Innovation and Jobs Act would have on Ford's ability to invest in tomorrow's technologies.

To follow up on our conversation, if Congress allows the full expensing of R&D costs to expire at the end of this year, do you anticipate that U.S. companies may be incentivized to move high-skilled jobs and R&D activities overseas?

Answer. Most countries permit deduction of research costs, and many provide valuable tax credits for conducting research. Some countries even provide for refundable research credits. If full expensing is permitted to expire in 2022, corporations will have a strong incentive to conduct research, and keep ownership of resulting intellectual property, outside the United States.

PREPARED STATEMENT OF JAY TIMMONS, PRESIDENT AND CEO, NATIONAL ASSOCIATION OF MANUFACTURERS

Good morning, Chairman Wyden, Ranking Member Crapo, and distinguished members of the committee. Thank you for the opportunity to appear before you and for holding this hearing today on manufacturing in America.

A. INTRODUCTION

My name is Jay Timmons. I was raised in the manufacturing town of Chillicothe, OH, where my grandfather worked at the Mead plant for nearly 4 decades. I have seen firsthand how manufacturing raises the quality of life for families and communities.

I currently serve as president and CEO of the National Association of Manufacturers (NAM). The NAM is the largest manufacturing association in the United States, representing small and large manufacturers in every industrial sector. At the NAM, we advocate policies that would help grow domestic manufacturing and improve the lives of the more than 12 million men and women who make things in America.

The manufacturing sector is vitally important to American prosperity. It accounts for 11 percent of U.S. GDP, driving more than $2.3 trillion in economic activity in the most recent quarter for which data is available. The industry provides financial security to working families, paying wages averaging $88,406, including pay and benefits—nearly 24-percent higher than the average pay and benefits in all nonfarm industries. Moreover, 84 percent of manufacturing employees have access to a workplace retirement plan, helping to ensure families' financial stability for years to come.

Through The Manufacturing Institute, the workforce and education partner of the NAM and an entity for which I serve as chairman of the board, manufacturers are also running innovative programs to recruit and train the next generation of manufacturing workers. Our FAME program provides education, training and certification with respect to core industry skills in 13 States. And our Heroes Make Amer-

ica program has had the privilege of partnering with the Army for several years to provide on-base manufacturing training for service members nearing the end of their enlistment period.

I am joining you virtually because of the pandemic that this country has endured for more than a year now. But this pandemic is far more than a story of economic hardship and painful loss. It is also a story of communities and companies rising to the challenge.

During this crisis, America's manufacturing workers mobilized in ways reminiscent of their resolve during World War II, when manufacturers became the arsenal of democracy. The companies joining me today are part of this effort. Ford remade shopfloors to make ventilators and face shields. Intel accelerated access to technology to combat the pandemic. From iconic global brands to family-owned shops, manufacturers answered the call. I am pleased to share just a few of their stories:

- Behlen Manufacturing, a global leader in steel fabrication based in Nebraska, organized local school labs with 3D printers to develop printable protective gear for health care workers.
- A team at AAON, a commercial heating and cooling equipment manufacturer based in Oklahoma, worked around the clock to make heating and cooling units with HEPA filtration systems for use in temporary hospitals in New York City.
- Acuity Brands, based in Atlanta, produces lighting and lighting control technology for buildings. This company squeezed a development process that usually takes up to a year into two weeks to create a sophisticated, portable health-care lighting stand for temporary hospitals.

Today, 1 year after stay-at-home orders and health restrictions began, the light at the end of the tunnel is growing brighter by the second—thanks to the innovation and dedication of pharmaceutical manufacturers who are making vaccines to stop the spread of the virus. Their heroic work, combined with the previous administration's Operation Warp Speed, this Congress and this administration's focus on and investment in vaccine distribution, is now saving about two million American lives every single day.

B. A TAX POLICY FRAMEWORK FOR GROWING MANUFACTURING IN AMERICA

Manufacturing workers' incredible achievements during this crisis are all the more impressive when you consider the disruptions and challenges they had to overcome. This pandemic exposed and exacerbated serious supply chain issues that we now must address as we work to build the next post-pandemic world.

It was a challenge the NAM recognized early on. In spring 2020, we released our plan for strengthening manufacturing supply chains. I've had the chance to discuss it directly with some of you, and I know our plan has been shared with this committee. Our goal is your goal: ensuring that the next dollar invested in manufacturing is invested in America. The plan is comprehensive—ranging from tax code recommendations to workforce innovations. The central premise, though, is that the successful path is to incentivize investments. Incentives—not punitive measures—will allow us to achieve our shared goal.

The NAM's Strengthening the Manufacturing Supply Chain[1] was motivated in part by an anticipated global competition for new industrial investment as countries emerge from the worldwide economic slowdown, that was identified in a study by The Manufacturing Institute and KPMG.[2] The long productive life span of new manufacturing investments makes one thing clear—countries that attract the next wave of investment will be positioned for decades of industrial growth, job creation and innovation. Those that fail to capitalize on this moment face the prospect of falling behind as new advancements are researched and produced elsewhere.

While I would love for every product in the world to be made in the United States, it's simply not feasible or practical to expect all global manufacturing to relocate to America. In fact, attempts to quickly and radically upend global supply chains can create risks for consumers and increase the cost of manufactured goods for end-

[1] National Association of Manufacturers, Strengthening the Manufacturing Supply Chain (2020), *https://documents.nam.org/COVID/NAM%20-%20Strengthening%20the%20Manufacturing%20Supply%20Chain.pdf.*

[2] KPMG, Cost of Manufacturing Operations Around the Globe (2020), *https://www.themanufacturinginstitute.org/wp-content/uploads/2020/10/cost-manufacturing-operations-globe.pdf.*

users. We must recognize that manufacturers in America benefit from foreign customers and foreign investment. The vast majority of customers are located outside our borders. In 2020, according to the United Nations, 95.75 percent of the world's population lived outside of the United States. Moreover, the Bureau of Economic Analysis estimates that in 2019, the most recent year for which data is available, foreign direct investment in U.S. manufacturing reached nearly $1.8 trillion, and U.S. affiliates of foreign multinational enterprises employed nearly 2.5 million manufacturing workers in America.[3]

The NAM believes that a focus on making the United States the destination of choice for *new* industrial investment would strengthen domestic manufacturing. There are several steps that members of this committee can take to meet that goal.

First, policymakers must recognize the importance of predictability and stability in the tax code. Large up-front costs accompany the required investments in the cutting-edge factories, machinery, and equipment modern manufacturing demands. The useful life of these capital assets is often measured in years, or decades for the most significant investments. A competitive tax regime that provides predictability can weigh in favor of U.S. investment.

The data support a relationship between manufacturing growth and competitive tax rates. As members of this committee know, the NAM advocated tax reform in the decades following the Tax Reform Act of 1986. Our view was that reforming the tax code would allow manufacturers to hire more workers, raise wages and benefits and grow their businesses. For our sector, that promise is being fulfilled. Consider the following:

- In 2018, manufacturers added 263,000 new jobs. That was the best year for job creation in manufacturing in 21 years.[4]
- In 2018, manufacturing wages increased 3 percent and continued going up—by 2.8 percent in 2019 and by 3 percent in 2020. Those were the fastest rates of annual growth since 2003.[5]
- Manufacturing capital spending grew by 4.5 percent and 5.7 percent in 2018 and 2019, respectively.[6]
- Overall, manufacturing production grew 2.7 percent in 2018, with December 2018 being the best month for manufacturing output since May 2008.[7]

But these numbers don't tell the full story. I have heard from manufacturers around the country about the impact of the more competitive tax system that was enacted in 2017. Here are just a few examples:

- Jamison Door in Hagerstown, MD gave their 120 employees special bonuses in anticipation of tax reform and again after the law took effect. They then offered raises and announced plans to add 50,000 square feet of new manufacturing space, with investments in new, state-of-the art equipment. With these investments, they aim to increase their workforce by 115 percent.
- Marlin Steel Wire Products, a small wire products manufacturer in Maryland, has invested more than $1.5 million in new technology since 2018, increasing their full-time workforce by 30 percent, given two rounds of raises, enhanced employee benefits, and as of last month, added 56 percent more factory floor space. They credit all of this to the tax cut and instant expensing.
- Carpenter Technology Corporation, credits tax reform for making possible a $100-million investment in soft magnetics capabilities and a new, precision strip hot rolling mill in its Reading, PA facility to help meet customer demand.
- Glier's Meats in Covington, KY delivered multiple wage increases for its 29 employees in 2018 alone after the tax reform law was passed. They've also

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[3] Bureau of Economic Analysis, Direct Investment by Country and Industry, 2019 (July 23, 2020), *https://www.bea.gov/news/2020/direct-investment-country-and-industry-2019.*

[4] Bureau of Labor Statistics, Current Employment Statistics, Manufacturing Employment, Seasonally Adjusted (last visited March 5, 2021), *https://www.bls.gov/ces/data/.*

[5] Bureau of Labor Statistics, Current Employment Statistics, Average Hourly Earnings for Production and Nonsupervisory Employees, Manufacturing, Seasonally Adjusted (last visited March 5, 2021), *https://www.bls.gov/ces/data/.*

[6] U.S. Census Bureau, Annual Survey of Capital Expenditures, Table 2A, Manufacturing (last visited March 5, 2021), *https://www.census.gov/data/tables/2019/econ/aces/2019-aces-summary.html.*

[7] Federal Reserve Board of Governors, Industrial Production, Manufacturing, Seasonally Adjusted (last visited March 5, 2021), *https://www.federalreserve.gov/releases/g17/Current/default.htm.*

been able to invest in new machinery that helps the business serve more customers, and they have continued hiring since 2018.

Those are some examples of small companies, but the large firms that employ 57 percent of the manufacturing workforce have also been growing in the United States. When a Midwest manufacturer announced a $400 million investment in a new campus in late 2019, the company's leadership explicitly credited tax reform. The investment was slated to create 100 jobs directly with hundreds of more jobs created indirectly by supporting projects. In mid-2019, a manufacturer of components for nuclear power plants announced it was going on a hiring spree in Indiana and Ohio, as it expanded three facilities. And not only was the company creating 170 jobs in the two States, it was also investing in workforce development programs, including partnerships with K–12 schools. That expansion, they said, was possible because of tax reform. And, just last month a manufacturer in the food and beverage industry committed to investing more than $1 billion in its U.S. operations over the next 2 years, a decision that was made easier thanks to tax reform.

Reducing tax rates drove historic growth in the manufacturing sector. It is clear that increasing taxes—whether by increasing the corporate tax rate, increasing the tax burden on small and medium manufacturers who are organized as pass-through entities, expanding the scope of income earned abroad that would be captured by the U.S. tax net, or allowing the tax code to increase the cost of items critical to manufacturing, such as investing in new machinery or cutting-edge research—would inhibit growth in the sector. In our most recent Manufacturers' Outlook Survey,[8] 87.4 percent of respondents said that their company would find it more difficult to hire more workers, invest in new equipment or expand their facilities if the tax burden on manufacturing income were increased. In addition, attempts to eliminate liquidity provisions designed to help businesses through the COVID–19 crisis would amount to a retroactive tax increase on struggling firms.

Notably, tax reform only moved our combined Federal and State corporate tax rate to slightly higher than the OECD average.[9] Merely maintaining our current tax system is not enough to drive new investment in the United States. Additional tax incentives should be a critical part of a national strategy to grow manufacturing.

Among manufacturers' most urgent needs is a tax code that encourages investment in research and development. Manufacturers account for 62 percent of all private-sector R&D. The new technologies, materials and processes developed by manufacturers make modern life possible. Unfortunately, a looming change to the treatment of R&D spending could decrease American innovation by driving up the after-tax cost of research spending.

For more than 6 decades, section 174 of the Internal Revenue Code provided businesses the ability to deduct R&D expenses in the year incurred. However, the Tax Cuts and Jobs Act substantially altered the provision. Starting in 2022, companies will no longer be allowed to immediately deduct these research costs. Rather, they will be forced to amortize the costs over a period of years.

This modification of the tax treatment of R&D expenses will negatively impact U.S. jobs, wages, and investment. A recent study[10] by Ernst and Young found that in the first 5 years after amortization takes effect U.S. research spending would be reduced by $4.1 billion annually, the U.S. would lose 23,400 R&D-related jobs annually, and labor income related to R&D would be reduced by $3.3 billion annually. After the first 5 years, research spending would be reduced by $10.1 billion annually, 58,600 research-related jobs would be lost each year, and labor income would be reduced by $8.2 billion annually. Note that these are merely direct job losses; if indirect effects are taken into account, the U.S. would lose 67,700 R&D-related

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[8] National Association of Manufacturers, NAM Manufacturers' Outlook Survey: First Quarter 2021 (2021), *https://www.nam.org/wp-content/uploads/2021/03/NAM-Outlook-Survey-Q1-2021.pdf.*

[9] Garrett Watson and William McBride, Tax Federation, Evaluating Proposals to Increase the Corporate Tax Rate and Levy a Minimum Tax on Corporate Book Income (2021), *https://taxfoundation.org/biden-corporate-income-tax-rate/* ("The TCJA brought the U.S. statutory corporate tax rate down from a Federal-State combined rate of 38.9 percent in 2017—then the highest in the OECD—to 25.8 percent in 2020, slightly above the current OECD average (excluding the U.S.) of 23.4 percent.").

[10] Ernst and Young, Impact of the Amortization of Certain R&D Expenditures on R&D Spending in the United States (2019), *https://investinamericasfuture.org/wp-content/uploads/2019/10/EY-RD-Coalition-TCJA-R-and-D-amortization-report-Oct-2019-1.pdf.*

jobs in each of the first 5 years after amortization takes effect and 169,400 annually in each subsequent year.

Manufacturers are grateful to Senators Hassan and Young for introducing bipartisan legislation to stop R&D amortization from taking effect. We respectfully urge the committee to expedite consideration and approval of this important bill. Without it, the innovation that has so long characterized manufacturing in America stands at risk.

The ability to efficiently finance equipment and machinery purchases is critical to growing domestic manufacturing. Small and medium manufacturers are the backbone of America's supply chain. To effectively grow manufacturing in the United States, these firms must be able to expand their facilities, purchase new equipment and hire more workers. Small firms typically lack access to public equities markets and may take out business loans to afford these purchases. Yet a coming tax law change will make this financing option more expensive.

Under current law, the maximum amount of deductible interest on a business loan is limited to 30 percent of a company's EBITDA (earnings before interest, taxes, depreciation and amortization). Starting in 2022, the limit will be 30 percent of EBIT (earnings before interest and taxes). Removing depreciation and amortization from the base upon which the limit is calculated would disproportionately harm manufacturers, as capital equipment purchases and other acquisitions can require significant amounts of depreciation and amortization.

Research indicates that even under the more generous 30 percent of EBITDA standard, manufacturers are disproportionately subject to disallowance of interest deductions—when analyzed by industry, manufacturers bore 61 percent of potentially disallowed interest deductions.[11] Importantly, this recent research reflects the operation of the provision in a "normal" business environment, only examining debt and earnings levels prior to 2020. The impact of the provision during the pandemic highlights the perverse nature of the interest restriction. As earnings are reduced in a challenging economy and more debt is incurred to keep businesses afloat, an increasing amount of interest deductions are disallowed.

The tax burden shouldered by manufacturers under an EBITDA standard should not be exacerbated by a shift to an EBIT standard. Allowing this change to take effect would run counter to the goal of increasing domestic manufacturing capacity by increasing the cost of financing equipment purchases, facilities expansions and other activities that are necessary to grow the sector.

Similarly, the ability to immediately deduct the cost of capital equipment purchases makes such transactions more attractive on an after-tax basis. For small and medium manufacturers, the tax savings from so-called "full expensing" can make these purchases more affordable. Unfortunately, the ability to immediately deduct these expenses begins to phase out in 2023.

The NAM respectfully urges this committee to ensure that manufacturers in America can meet the challenge of growing the sector by keeping business loans and capital equipment purchases affordable. Preventing changes to interest deductibility and full expensing from taking effect would ensure that the tax code supports the need for new industrial investments required by a growth in manufacturing.

In addition, **members of this committee should consider the adoption of a broad-based investment tax credit to spur growth in the manufacturing sector.** As noted at this hearing, several bipartisan bills have already been introduced to stimulate investment in critical industries, including semiconductors and batteries. The NAM applauds Senators Stabenow, Cornyn, Warner, and Daines for their leadership in crafting proposals that utilize the tax code to encourage investment in modern manufacturing. As the committee examines investment tax credit proposals, I urge you to consider the following principles:

- Broad applicability—the NAM believes that any investment tax credit must be available to all companies that invest in manufacturing activities in the United States, irrespective of the current location of their operations or place of organization. Any expansion of the U.S. industrial base should be encour-

[11] Ernst and Young, Economic Impacts of One-Year Extension of CARES Act 163(j) COVID Relief (2021), *https://www.nam.org/wp-content/uploads/2020/12/EY-CARES-Act-163j-COVID-relief-economic-analysis.pdf* (this analysis also finds that a 1-year extension of the temporary 50 percent of EBITDA limit included in the CARES Act would increase U.S. GDP by up to $11 billion and create up to 100,000 jobs).

aged. As noted above, foreign direct investment plays a key role in supporting the U.S. manufacturing base.

- Stimulate new investments—The activities to which the credit attaches should be broad in scope. Investments in workforce, machinery, equipment, and innovation are all key to the long-term success of manufacturing. Each of these items should be given consideration as eligible expenses. Moreover, the amount of the credit should be tied to any cost differential that could sway an investment decision in favor of the United States. For example, recent research indicates that primary costs associated with U.S. manufacturing (labor, real estate, financing, and utilities) are approximately 16 percent higher than the same costs in other countries that export to America.[12] A broad-based credit that seeks to equalize the core cost of operating domestically with our foreign competitors would match the amount of this differential.
- Seamless integration into existing law—To be effective, any investment tax credit must be as simple as possible to calculate, easy to claim and complement existing tax incentives that are available to all manufacturers, irrespective of size or form.
- Time-limited—A broad-based investment tax credit should be available for a limited number of years. The time to act is now. We must encourage immediate investment in America. Limiting the availability of the credit to investments made in a reasonable period of years after enactment (recognizing the long lead time associated with planning and executing a major industrial project) would send a signal to our competitors that we are ready to secure our supply chains and grow our manufacturing base.

C. OTHER POLICIES THAT SUPPORT DOMESTIC MANUFACTURING

While tax is the focus of today's hearing, other policy changes are needed to spur growth of manufacturing in America. The key priorities of the NAM over which this committee has jurisdiction include, but are not limited to:

Addressing the workforce challenge. Our industry continues to suffer from a shortage of skilled workers. There have been roughly 500,000 job openings in the manufacturing sector on average over the past 6 months, including a record high in October. Moreover, research in 2018 from The Manufacturing Institute and Deloitte noted that 2.4 million job openings would go unfilled by 2028 due to the skills gap,[13] and in our most recent Manufacturers' Outlook Survey, nearly 66 percent of respondents said that the inability to find talent was a top concern for their business.[14] Tax incentives that support programs to build a pipeline of manufacturing employees are critical to the sector's long-term growth. While outside of this committee's purview, comprehensive immigration reform is also critical to building the workforce of tomorrow, and I urge members of this committee to review the NAM's immigration proposal.[15]

Investing in infrastructure: The NAM has called for an investment of at least $1 trillion in our Nation's infrastructure to upgrade the systems that support modern manufacturing and increase safety by adopting the benefits of innovative transportation in infrastructure systems. Our Building to Win plan provides details on the types of investments needed.[16]

A stable trade regime: Manufacturers of all sizes need U.S. trade policies that allow them to grow operations and jobs here at home, increase business predictability and enhance their ability to reach new customers around the world. Negotiating cutting-edge trade agreements, ensuring commercial enforcement of existing trade agreements (including full implementation of the USMCA), ensuring that China fulfills its obligations under the Phase One trade deal, reforming inter-

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[12] KPMG, Cost of Manufacturing Operations Around the Globe (2020), *https://www.themanufacturinginstitute.org/wp-content/uploads/2020/10/cost-manufacturing-operations-globe.pdf.*

[13] Deloitte and the Manufacturing Institute, 2018 Deloitte and the Manufacturing Skills Gap and Future of Work Study (2018), *https://www.themanufacturinginstitute.org/research/2018-deloitte-and-the-manufacturing-institute-skills-gap-and-future-of-work-study/.*

[14] National Association of Manufacturers, NAM Manufacturers' Outlook Survey: First Quarter 2021 (2021), *https://www.nam.org/wp-content/uploads/2021/03/NAM-Outlook-Survey-Q1-2021.pdf.*

[15] National Association of Manufacturers, A Way Forward (2019), *https://www.nam.org/wp-content/uploads/2019/05/IIHR.ImmigrationReform.Report.2019.FINAL_.pdf.*

[16] National Association of Manufacturers, Building to Win (2019), *https://www.nam.org/wp-content/uploads/2019/05/IIHR.BTW_.2019.v08.pdf.*

national trade rules and institutions, including the World Trade Organization, and modernizing the U.S. tariff code by enacting a new Miscellaneous Tariff Bill, would all support domestic manufacturers.

Provide regulatory certainty: A stable, tailored regulatory regime is also necessary to support the industry. On average, manufacturers pay $19,564 per employee to comply with Federal regulations, or nearly double the $9,991 per employee costs borne by all firms as a whole.[17] This burden falls heavily on small businesses; of the 248,039 firms in the manufacturing sector in 2017, all but 3,914 had fewer than 500 employees, with three-quarters of these firms having fewer than 20 employees.[18] For the smallest firms (*i.e.,* those with fewer than 50 employees), regulatory costs equal $34,671 per employee.

Addressing many other policy matters will be critical to encouraging growth in domestic manufacturing. For example, with respect to highly regulated industries, speeding the required validation of new facilities, processes and ingredients would make the U.S. a more feasible location for investments in new production capacity.

Thank you for inviting me to testify today. I look forward to continued engagement with members of this committee as we work to grow jobs, wages and investment in manufacturing.

QUESTIONS SUBMITTED FOR THE RECORD TO JAY TIMMONS

QUESTIONS SUBMITTED BY HON. SHERROD BROWN

Question. Are there existing provisions of tax law that, although unintended, provide an incentive for corporations to locate factories or jobs abroad? How should Congress reform these provisions of tax law?

Answer. As noted in my testimony, tax reform helped spur growth in domestic manufacturing. Following the enactment of the Tax Cuts and Jobs Act, manufacturers hired more workers, raised wages and benefits and boosted investment. Just consider:

- In 2018, manufacturers added 263,000 new jobs. That was the best year for job creation in manufacturing in 21 years.
- In 2018, manufacturing wages increased 3 percent and continued going up—by 2.8 percent in 2019 and by 3 percent in 2020. Those were the fastest rates of annual growth since 2003.
- Manufacturing capital spending grew by 4.5 percent and 5.7 percent in 2018 and 2019, respectively.
- Overall, manufacturing production grew 2.7 percent in 2018, with December 2018 being the best month for manufacturing output since May 2008.

Conversely, adopting a less competitive tax regime would hurt American workers. A recent economic analysis commissioned by the NAM (and attached to this submission) found that increasing corporate and individual tax rates, among other tax policy changes, would result in less economic activity and 1 million jobs lost in the first 2 years.

- Total employment, measured by hours worked, would fall by 0.7 percent initially before moderating. The reduction in hours worked would be equivalent to an employment decline of approximately 1 million full-time jobs in 2023. Those jobs would still be gone in 2026 before stabilizing. The average annual reduction in employment would be equivalent to a loss of 600,000 jobs each year over 10 years.
- Moreover, by 2023, GDP would be down by $117 billion, by $190 billion in 2026 and by $119 billion in 2031. Ordinary capital, or investments in equipment and structures, would be $80 billion less in 2023 and $83 billion and $66 billion less in 2026 and 2031, respectively.
- Investments in intangibles, or "firm-specific capital," are highly mobile and more sensitive to marginal tax rate changes. Such investments would fall 2.7 percent by year 2 and would be down a total of 3.8 percent by year 5.

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[17] Crain and Crain, The Cost of Federal Regulation to the U.S. Economy, Manufacturing and Small Business (2014), *https://www.nam.org/wp-content/uploads/2019/05/Federal-Regulation-Full-Study.pdf.*

[18] *Id.*

- Real wages would fall by 0.6 percent in the long run, and total labor compensation, including wages and benefits, would decline by 0.6 percent initially before falling by 0.3 percent after 10 years. In the long run, total compensation would also decline by 0.6 percent.

In addition, there are coming tax changes that, if allowed to go into effect, would make it harder for manufacturers in America to grow, and potentially make other nations a more attractive place for new industrial investment.

First, starting next year, manufacturers—a sector which performs nearly two-thirds of all private sector R&D—will no longer be able to immediately deduct their R&D expenses. The amortization requirement would make it more expensive for manufacturers to do R&D which in turn would hurt jobs, innovation and competitiveness. In fact, according to a recent Ernst and Young study, there would be a loss of 23,400 R&D jobs in the first 5 years with a loss of 58,600 jobs in the following 5 years.

Second, starting in 2022, another scheduled tax change would make it more expensive for manufacturers to finance their growth. Currently, business interest deductions are limited to 30 percent of earnings before interest, tax, depreciation, and amortization or EBITDA. However, next year the deduction will be limited to 30 percent of earnings before interest and tax or EBIT. By excluding depreciation and amortization, the stricter EBIT standard would reduce the maximum deduction available to manufacturers and disproportionately harm the sector given the industry's significant investments in depreciable equipment and machinery.

Third, manufacturers can currently reduce the after-tax cost of capital equipment purchases through full expensing. However, in 2023 full expensing begins to phase down which would raise the cost of these purchases. Preventing these changes from occurring would help ensure that the next dollar invested in manufacturing is invested in America. These new investments would in turn help drive the creation of new American jobs in the next, post-pandemic world.

Question. Manufacturers across Ohio—from the Jeep plant in Toledo and the Honda plants in Marysville and East Liberty, OH to the Navistar facility in Springfield and the PACCAR facility in Kenton to the Whirlpool plant in Clyde—are struggling as a result of the global shortage of semiconductor chips.

What are you hearing from your members about what the current semiconductor means for domestic manufacturing?

Answer. The NAM recently provided comments to the Commerce Department in response to Executive Order 14017's 100-day review of risks in the semiconductor manufacturing and advanced packaging supply chain. These comments are attached for your convenience and summarized below.

First, as noted in our submission to the Commerce Department, the semiconductor supply chain is truly global in nature:

> Chip manufacturing is among the most complex, costly and precise processes in the world, and semiconductors amount to a half-trillion-dollar global supply chain. Today's semiconductor industry depends on an intricate global network. According to Accenture, "each segment of the semiconductor value chain has, on average, 25 countries involved in the direct supply chain and 23 countries involved in supporting market functions." Semiconductor products can cross international borders 70 times before the end-product reaches a customer.

Semiconductors are an essential component in manufacturing. Any disruption of this supply chain ripples across multiple manufacturing segments (such as passenger and commercial vehicles, pharmaceuticals, medical devices, agricultural goods and essential supplies) and can profoundly affect the competitiveness of manufacturers in the United States. The gap between chip demand and the available supply is expected to grow over the next 5 years. Manufacturers' competitiveness will depend on ensuring the chip supply chain does not stall the delivery and adoption of advanced technologies. A recent study from The Manufacturing Institute, the workforce development and education partner of the NAM, found that over 50 percent of manufacturers report they will be testing or using 5G in some capacity within their facilities by the end of 2021, and 91 percent of manufacturers indicated the speed of 5G deployment will have a positive impact on their ability to compete globally.

Policy solutions to address issues in this segment must recognize that it is not feasible to shift full, complex semiconductor supply chains to the United States overnight, and global companies will continue to carefully manage risks through geographically diversified supply chains. The U.S. government's strategy must include both of these approaches. The NAM respectfully urges you to consider the following policies regarding the semiconductor supply chain:

1. **Pursue programs and policies that encourage the expansion of domestic semiconductor supply chains.** The NAM's Strengthening Manufacturing Supply Chains proposal (attached) provides a clear set of recommendations for growing domestic manufacturing, and it recognizes that onshoring production across manufacturing sectors is vital for America's economic strength and job creation.
2. **Fully fund programs authorized in the CHIPS for America Act and speed their implementation.** Congress included provisions of the CHIPS for America Act in sections 9902 and 9903 of the William M (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, which became law on January 1, 2021. The law authorizes programs targeted to help manufacturers build and modernize chip manufacturing facilities in the United States. Congress should fully fund the enacted programs. It should further support the industry by providing an investment tax credit for these investments.
3. **Provide robust funding for R&D initiatives underway at the Departments of Commerce, Defense, and Energy.** These efforts should prioritize identification of the infrastructure and technical capabilities in domestic semiconductor supply chains, gaps in existing capabilities and the roll of strategic R&D investments to fill gaps, accounting for government and private sector demands and capabilities.
4. **Streamline export control policies to support U.S. competitiveness in semiconductor manufacturing.** Currently, domestic semiconductor manufacturers can be deterred from taking on a project that is heavily controlled due to the burdensome and costly nature of complying with existing export control regulations. This can force domestic manufacturers to source semiconductor products offshore, or require them to downgrade to an older technology, resulting in an inferior and less competitive final product. Where possible without sacrificing national security goals, manufacturers encourage the Departments of Commerce and State to streamline export control policies, especially as they relate to deemed exports, to allow companies within the U.S. manufacturing and defense industrial base to be able to obtain semiconductor components from foundries located in the United States.
5. **Strengthen the manufacturing workforce.** Manufacturers continue to face a workforce crisis, with 65.8 percent of respondents to the most recent NAM Manufacturers' Outlook Survey indicating that they continue struggling to find sufficient talent. The workforce challenge is expected to get worse in the coming years, with a study by Deloitte and The Manufacturing Institute showing that nearly half of the estimated 4.6 million jobs manufacturers will need to fill over the next decade could go unfilled due to the "skills gap." Policymakers should work with manufacturers on solutions to close the skills gap by supporting earn-and learn programs, certifications, 2- and 4-year degrees, on-the-job training, upskilling, and second chances.
6. **Boost cooperation with allied countries to improve semiconductor supply chain reliability.** The concentration of chips production in a small number of overseas locations creates economic and security risks to the entire supply chain. Boosting U.S. domestic capacity should be pursued along with prioritizing strategic collaboration with allies to support short-term supply needs of industry and government and to enhance reliable, diversified supply chains the support U.S. semiconductor companies. Geographically diversified supply chains among allied countries can improve supply chain resiliency and help ensure U.S. manufacturers' access to the global market.

Question. The threats to domestic manufacturing associated with our reliance on foreign supply chains are not industry specific. From semiconductors to PPE and other essential medical supplies to pharmaceuticals, our reliance on foreign supply chains threatens not only the health and safety of Ohioans, it impacts their livelihoods and the economic health of our communities.

Members of this committee have put forward some strong proposals to invest in supply chain resiliency right here in the U.S. in order to better support hardworking Americans and our domestic manufacturing facilities. Last year, I introduced the

Protecting American Heroes act to increase U.S. production of PPE, both to support our COVID–19 response and to better prepare for future public health emergencies. Senator Portman and I have worked together on our Build America, Buy America Act, which would both strengthen domestic manufacturing and support American workers. And Senator Cassidy and I are drafting legislation to create a domestic API reserve and make our pharmaceutical supply chain more resilient.

With his recent executive order on U.S. supply chains, President Biden has acknowledged how important it is that we act to strengthen the resiliency of our domestic supply chains. We have a once in a generation opportunity to advance policy to strengthen domestic manufacturing.

Beyond tax policy, what are some other legislative concepts that could help support domestic manufacturing and deliver for American workers? Please share a few ideas on policy proposals that would help strengthen the resiliency of our domestic supply chains.

Answer. As I noted in my testimony, the NAM has released recommendations to strengthen the manufacturing supply chain, which are attached to this submission. These recommendations include incentives to spur industrial investment in the United States and are briefly summarized below:

1. Enact a new tax credit that encourages domestic investments in manufacturing and make tax law changes that reduce costs for manufacturers to hire and retain a pipeline of skilled U.S. workers.
2. Provide incentives to help manufacturers recruit, train and retain the skilled workers necessary to grow the industry.
3. Support U.S. private-sector R&D by immediately reversing the R&D amortization tax change set to go into effect in 2022 that will prevent companies from being allowed to immediately deduct their R&D spending and simplify the R&D tax credit and expand its application.
4. Establish a bold public-private investment vehicle to provide funding and financing to companies of all sizes to support research into advanced manufacturing technologies.
5. Speed the delivery of intellectual property protections for companies that conduct operations for their innovative ideas in the United States.
6. Ensure that manufacturers can efficiently finance pro-growth investments by preventing tax law changes from taking effect that would increase the cost of business loans and reduce the ability to write-off equipment and machinery purchases.
7. Open the Federal Government's portfolio of surplus property to manufacturers to build manufacturing facilities in the United States, which would reduce costs and spur investments.
8. Annually review the competitiveness of America's tax and regulatory regimes to ensure that we can continue to attract new industrial investment.
9. Harmonize sustainable permitting required to establish basic infrastructure that must be in place before companies can break ground on major facilities.

QUESTION SUBMITTED BY HON. ROB PORTMAN

Question. Last year, we saw the coronavirus usher in a whole new suite of challenges that businesses face. Many businesses were hurt as they were shutdown, often for long periods of time. Though even for those businesses that stayed open or reopened early, they often faced a whole new set of costs associated with adapting to the risks posed by the pandemic. Presumably, investing in the safety and sanitization measures necessary for continuing operations diverted funds from what would have otherwise might have been long term investments to help grow the company, such as in R&D. I have introduced bipartisan legislation, the Healthy Workplaces Act, which provides a credit to help cover those unique costs associated with keeping the workplace safe during the pandemic.

How have expenses associated with the coronavirus affected investment decision making for your manufacturers? Has R&D investment for 2020 declined? If so, is this attributable to refocusing budgets towards adapting to the new costs associated with the coronavirus?

Answer. Since the pandemic began, the industry has learned firsthand what must be done to stop the spread of COVID–19 at manufacturing facilities and has invested significant resources to keep workers safe and ensure Americans have access to essential products, medicine and PPE. Manufacturers have responded quickly to

guidance from the CDC by retooling production lines, purchasing PPE for employees, increasing disinfecting and cleaning, installing physical barriers, staggering shifts and providing access to the vaccine at no cost to employees.

At the outset of the pandemic, the NAM called on Congress to enhance tax incentives for employers who invest in safety equipment, including but not limited to hand washing stations, respiratory equipment, and cleaning products. Given the significant investments made by manufacturers to keep workers safe during the pandemic the NAM greatly appreciates your leadership in introducing the Healthy Workplaces Act and looks forward to working with you to get it passed into law.

While 2020 data has not been released yet with respect to capital spending, manufacturing activity has rebounded strongly. Moreover, according to the NAM's most recent Outlook Survey, the near-term future looks strong for capital spending with respondents expecting an average increase of 2.7 percent over the next 12 months with nearly half expecting higher capital spending in the next year.

As for R&D investment, it rose throughout 2020 with investment increasing to $451.3 billion in the fourth quarter according to the Bureau of Economic Analysis. However, looking ahead, a coming tax change—the requirement to amortize R&D expenses starting in 2022—would have a negative impact on R&D investment. According to a recent study by Ernst and Young, the amortization provision would result in a decline in R&D spending by $4.1 billion in the first 5 years and $10.1 billion the following 5 years. That same study found that for every $1 billion in R&D spending 17,000 jobs are supported and a decline in R&D spending would lead to a loss of 23,400 R&D jobs in the first 5 years and 58,600 jobs in the following 5 years. As R&D is the lifeblood of manufacturing, the NAM appreciates your cosponsorship of the American Innovation and Jobs Act which would continue to foster investment in R&D and support R&D jobs by repealing the amortization provision.

QUESTIONS SUBMITTED BY HON. TODD YOUNG

Question. In your testimony you described the strong link between R&D investment and a vibrant manufacturing sector. Particularly concerning to me is the estimated one hundred thousand or more jobs per year that are at risk should the amortization cliff hit at the end of this year.

If Congress allows the full expensing of R&D costs to expire at the end of this year, do you agree that U.S. firms would be incentivized to move high skilled jobs overseas?

Answer. With manufacturers performing nearly two-thirds of all private sector research and development in the U.S.—the most of any sector—the NAM thanks you for your leadership by introducing the American Innovation and Jobs Act which would repeal the amortization provision.

As noted in my testimony, a recent study by Ernst and Young finds that this provision would result in the loss of 23,400 good paying R&D jobs in the first 5 years with a loss of 58,600 jobs over the following 5 years. The same study finds that for every $1 billion of R&D spending 17,000 jobs are supported demonstrating the strong relationship between R&D investment and jobs. If this provision were to go into effect, it would come at a time of fierce global competition for R&D. Currently, the U.S. ranks 27 out of 37 among OECD countries with respect to tax incentives for R&D. In fact, the U.S. would have the dubious distinction of being one of only two developed countries with such a policy.

Fortunately, your bipartisan bill would help protect U.S. jobs and keep the U.S. as a global leader in innovation. The NAM looks forward to working with you and your colleagues in ensuring that the tax code continues to support innovation.

Question. Given the record job growth that followed the 2017 tax cuts, which was accompanied by record rising wages as well, do you believe the growth seen over the last few years could be undone by an increased tax burden on manufacturers, regardless of their size?

Answer. As noted in my testimony, tax reform sparked a surge in manufacturing with manufacturers creating new jobs, boosting wages and benefits and increasing investments.

More specifically, consider:

- In 2018, manufacturers added 263,000 new jobs. That was the best year for job creation in manufacturing in 21 years.
- In 2018, manufacturing wages increased 3 percent and continued going up—by 2.8 percent in 2019 and by 3 percent in 2020. Those were the fastest rates of annual growth since 2003.
- Manufacturing capital spending grew by 4.5 percent and 5.7 percent in 2018 and 2019, respectively.
- Overall, manufacturing production grew 2.7 percent in 2018, with December 2018 being the best month for manufacturing output since May 2008.

However, a recently released study by the NAM on proposed tax changes currently under consideration in Congress such as increasing the corporate tax rate to 28 percent and the top individual tax rate to pre-TCJA levels finds that these and other tax changes would result in the loss of 1 million jobs over the first 2 years, and an average of 600,000 jobs over the remainder of the budget window.

Moreover, in the NAM's most recent Outlook Survey nearly nine out of 10 respondents warned that a higher tax burden would make it more difficult to expand their workforce as well as invest in new equipment or expand their facilities. In order to help ensure that the next dollar invested in manufacturing is invested in America it is essential that the U.S. continues to have a predictable, stable and competitive tax regime.

Question. My American Innovation and Jobs Act is designed to support innovative U.S. firms up and down the supply chain. Whether they are a longstanding manufacturer with billions in assets, a small business, or an innovative start-up, these firms should be incentivized to develop cutting edge technologies. Is it important to support start-ups in the R&D space? What kind of an impact can start-ups have in terms of technological advancement and job creation?

Answer. As the majority of manufacturing firms in the U.S. are small with three-quarters of these firms employing less than 20 workers, the American Innovation and Jobs Act would play an important role in supporting small and new manufacturers' pursuit of pioneering R&D by expanding and making it easier to access the refundable R&D tax credit. Not only would this help to strengthen the manufacturing supply chain by encouraging R&D here in the U.S. but it would also support good-paying jobs. In fact, the previously mentioned Ernst and Young study finds that R&D-related jobs pay an average annual wage of nearly $135,000. The NAM looks forward to working with you to ensure the tax code fosters the cutting-edge R&D by new and small firms that is so critical to our nations' competitiveness and future economic growth.

Question. As we look to support job creators at the end of the COVID–19 crisis, do you believe that supporting large manufacturers as well as small businesses would have a positive effect on job growth?

Answer. It is clear that supporting manufacturing job growth would prevent benefits for the country as a whole. There is a powerful relationship between manufacturing and the rest of the economy. Just consider that for every one worker in manufacturing, another five workers are hired elsewhere and for every $1 earned in the manufacturing sector another $3.14 in labor income is earned elsewhere. Finally, for every $1.00 spent in manufacturing, another $2.79 is added to the economy which is the highest multiplier of any sector.

With the country beginning to emerge from COVID–19, manufacturers can and are leading the economic recovery but as the previously noted tax study warns increasing the tax burden would result in significant job losses. Instead of taking a step back, manufacturers need a predictable, stable and competitive tax code in order to support the creation of new jobs in the next, post-pandemic world.

DYNAMIC ESTIMATES OF THE MACROECONOMIC EFFECTS OF TAX RATE INCREASES AND OTHER TAX POLICY CHANGES

John W. Diamond and George R. Zodrow, Tax Policy Advisers LLC

This study was prepared for the National Association of Manufacturers. The opinions expressed in this paper are those of the authors and should not be construed as reflecting the views of the NAM or any entity with which the authors are affiliated, including Rice University and the Baker Institute for Public Policy.

EXECUTIVE SUMMARY

In this paper, we use the Diamond-Zodrow computable general equilibrium model of the U.S. economy to simulate the macroeconomic effects of a policy change that would alter the tax system enacted in 2017 under the Tax Cuts and Jobs Act. The policy analyzed would increase the corporate income tax rate to 28 percent, reinstate the corporate AMT, eliminate expensing of most depreciable assets, eliminate the 20-percent deduction for certain pass-through business income, increase the top individual income tax rate to 39.6 percent, and tax capital gains and dividend income at ordinary rates for taxpayers with incomes above $1 million and tax unrealized capital gains at death. In order to focus primarily on the effects of the tax increases considered in isolation, we assume all of the revenues from these tax increases are used to finance an increase in government transfers, a use of revenues that has relatively few distortionary feedback effects on the economy.

The simulation results indicate that although such a change in tax policy would raise significant amounts of revenue, this revenue increase would naturally have economic costs. For example, with implementation of these policy changes, investment in ordinary capital declines by 1.9 percent in the short run, by 1.3 percent ten years after enactment, and by 1.6 percent in the long run. Employment declines by 0.7 percent in the short run, by 0.1 percent ten years after enactment, and is unchanged in the long run. The net effects on GDP are declines of 0.5 percent in the short run, 0.4 percent ten years after enactment, and 0.6 percent in the long run. To capture orders of magnitude, the short run effects in this case, measured at 2023 levels (two years after assumed enactment in 2021), correspond to a decline in GDP of $117 billion, a decline in investment in ordinary capital of $80 billion, and, to a rough approximation, a reduction of 1.0 million jobs, accompanied by an increase in transfer payments of $77 billion. These effects translate into a reduction of $662 in wage income per household coupled with an increase of $686 in transfers per household two years after enactment of the tax change.

I. OVERVIEW

Recent months have seen numerous proposals for policy changes that would alter the tax system enacted in 2017 under the Tax Cuts and Jobs Act (TCJA). In this paper, we examine the macroeconomic effects of some typical elements of such proposals, including increases in individual and business rates, coupled with various other proposed tax changes. We do so within the context of the Diamond—Zodrow (DZ) dynamic, overlapping generations, computable general equilibrium (CGE) model of the U.S. economy, which is designed to examine both the short run and the long run macroeconomic effects of tax policy changes.

The paper proceeds as follows. In the following section, we describe the tax policy option that we analyze. Section III provides a brief description of our computable general equilibrium model, while our simulation results are reported in Section IV. The final section summarizes the results and offers some caveats.

II. PROPOSALS ANALYZED

We consider a tax policy change, denoted as Policy P1, which has the following components:

- The CIT rate is increased from its current level of 21 percent to 28 percent;
- The corporate alternative minimum tax (AMT) is reinstated;
- Expensing (100 percent bonus depreciation) of most investments in depreciable assets is eliminated immediately rather than being phased out over 2023—2027 and is replaced with the modified accelerated cost recovery system (MACRS);
- The 20 percent deduction for certain pass-through business income is repealed immediately, rather than expiring after 2025;
- The top individual tax rate is increased immediately from its current level of 37 percent to its pre-TCJA level of 39.6 percent, rather than expiring after 2025;
- Capital gains and dividends are taxed at the same rate as ordinary income for taxpayers with incomes above $1 million and unrealized capital gains are taxed at death; and
- The increase in tax revenues is used to finance a proportionate increase in all transfer payments other than Social Security benefits.

Note that the policy assumes that all revenues are used to finance a proportionate increase in government transfer payments other than Social Security benefits. This assumption allows us to focus primarily on the effects of the tax increases considered in isolation, as using the revenues to finance an increase in government trans-

fers has relatively few distortionary feedback effects on the economy—although the positive income effects of the transfers do cause recipients to work less (consume more leisure), which increases the simulated labor supply effects. Note that a commonly used alternative assumption is that the new tax revenues are used for the first 20 years to finance a reduction in the national debt and after that time period are used to finance a proportionate increase in government transfer payments other than Social Security. For example, that is the use of tax revenues typically assumed by the Joint Committee on Taxation (JCT) (see Diamond and Moomau (2003) for a general discussion) as well as in other recent studies that follow the JCT approach (*e.g.,* Penn-Wharton Budget Model, 2019; Mermin et al., 2020). The "partial debt finance" assumption implies that national saving increases causing interest rates and the cost of capital to decline, which in turn implies that policy simulations involving revenue increases yield more favorable macroeconomic results as the reductions in the national debt free up funds for additional investment that offset some of the reductions in investment and the capital stock (and in labor supply) associated with tax increases when all revenues are used to finance increased government transfers.[1]

III. OVERVIEW OF THE DIAMOND–ZODROW MODEL

This section provides a short description of the model used in this analysis.[2] Key parameter values used in the simulations are provided in the appendix. Versions of the model have been used in analyses of tax reforms by the U.S. Department of the Treasury (President's Advisory Panel on Federal Tax Reform, 2005), the Joint Committee on Taxation (2005), and in numerous recent tax policy studies (Diamond and Zodrow, 2007, 2008, 2013, 2014, 2015, 2018, 2020, forthcoming; Diamond, Zodrow, Neubig, and Carroll, 2014; Diamond and Viard, 2008).

The domestic component of the DZ model includes both corporate and non-corporate composite consumption goods and owner-occupied and rental housing. The corporate sector is subject to the corporate income tax and subdivided into domestic and multinational firms as described below, and the "non-corporate" sector—which includes S corporations as well as LLCs, LLPs, partnerships and sole-proprietorships—is taxed on a "pass-through" basis at the individual level. Firms combine labor and several different types of capital to produce their outputs at minimum after-tax costs. The time paths of investment are determined by profit-maximizing firm managers who take into account all business taxes as well as the costs of adjusting their capital stocks, correctly anticipating the macroeconomic changes that will occur after any change in the tax structure. Firms finance their investments with a mix of equity and debt, choosing an optimal debt-asset ratio that balances the costs and benefits of additional debt, including its tax advantages.

On the consumption side, household supplies of labor and saving for capital investment and demands for all housing and non-housing goods are modeled using an overlapping generations structure. A representative individual in each generation (1) spends a fixed amount of time working and in retirement, (2) makes consumption and labor supply choices to maximize lifetime welfare subject to a lifetime budget constraint that includes personal income and other taxes, and (3) makes a fixed "target" bequest.

The government purchases fixed amounts of the composite goods and makes transfer payments, which it finances with the corporate income tax, a progressive tax on labor income after deductions and exemptions, and constant individual-level average marginal tax rates applied to capital income in the form of interest receipts, dividends, and capital gains. The modeling of corporate income tax revenues includes explicit consideration of deductions for depreciation or immediate expensing for both new and old assets (which are treated separately), other production and investment incentives, and state and local income and property taxes. Tax policy in the rest of the world is assumed to remain constant, regardless of the changes enacted in the United States.

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[1] Another approach—not currently possible within our model but the subject of ongoing research—is to model explicitly the increases in government consumption and government investment expenditures financed with the tax increases, an issue that is also discussed by Diamond and Moomau (2003). See Penn-Wharton Budget Model (2020) for a recent example of an analysis that examines the effects of government investment in items such as infrastructure, R&D, health care, and education.

[2] For more details, see Zodrow and Diamond (2013) and Diamond and Zodrow (2015). The model combines various features from other broadly similar CGE models, including those constructed by Auerbach and Kotlikoff (1987), Goulder and Summers (1989), Goulder (1989), Keuschnigg (1990), and Fullerton and Rogers (1993).

The DZ model also includes a simplified foreign or "rest-of-the-world" (RW) sector, with international trade and capital movements between the U.S. and RW. The model includes U.S. and foreign multinational enterprises (MNEs), both parents and subsidiaries, who determine the allocation of highly mobile firm-specific capital (FSK) that earns above-normal returns as well as the allocation of less mobile ordinary capital that earns normal returns.[3] FSK captures a wide variety of intangibles, including patents, copyrights, designs, or other proprietary technology, R&D spending, new software, unique databases, brand names and trademarks, and goodwill and reputation, which are coupled with unique managerial or organizational skills or knowledge of production processes and distribution networks to create a factor that is assumed to be fixed in total supply and grows at the exogenously specified growth rate, is unique to the firm, and allows it to permanently earn above-normal returns.[4] The model also allows for income shifting by MNEs in response to tax differentials across countries,[5] the use of intermediate goods that are traded between the affiliates of the MNEs,[6] and international trade in the goods produced by the U.S. and RW MNEs. To simplify the analysis, RW is modeled as consisting entirely of the MNE sector (both US-MNE subsidiaries and RW-MNE parents); we thus effectively assume that the remainder of RW is unaffected by the tax reforms analyzed.

We conclude this brief description of our model by noting that it includes several fundamental assumptions that are typical of such dynamic computable general equilibrium (CGE) models, including those used by the Joint Committee on Taxation (see Auerbach and Grinberg (2017) for a general discussion) and the Congressional Budget Office (Nelson and Phillips, 2019), as well as the models cited above. Specifically, all markets are assumed to be in equilibrium in all periods, and the economy must always begin and end in a steady-state equilibrium, with all of the key macroeconomic variables growing at an exogenous growth rate that equals the sum of the population and productivity growth rates. Note that this implies that tax changes do not affect the long-term growth rate in the economy.

Our model also assumes a full employment equilibrium in the labor market in each period. Thus, any simulated changes in hours worked necessarily reflect changes in labor supply and demand in response to tax-induced changes in prices and incomes—including any increases in government transfers, which, as noted above, reduce labor supply as individuals "consume" more leisure—in the context of a full-employment economy. Note that in the simulation results below, when we report for illustrative purposes a policy-induced decline in "jobs" we do so by converting the simulated decline in hours worked, holding the number of workers constant, into the equivalent decline in the number of full-time equivalent (FTE) workers, holding hours worked per worker constant.

IV. SIMULATION RESULTS

The results of our simulations of the tax policy change described in Section II are provided below. These results show the percentage changes in the variables listed as a result of the implementation of the policy, relative to a steady state in which the current tax system is left unchanged, which is calculated to approximate the equilibrium under the "current law" assumption that the various phase-outs specified in TCJA occur as planned.

To repeat, Policy P1 combines a 28 percent CIT rate with reinstatement of the corporate AMT, elimination of expensing and the 20 percent deduction for certain pass-through business income, an increase in the top individual income tax rate to 39.6 percent, and the taxes capital gains and dividend income at ordinary rates for taxpayers with incomes above $1 million and taxes unrealized capital gains at death. The resulting revenues are used to finance a proportionate increase in all transfer payments other than Social Security benefits.

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[3] The assumption of differential international mobility of capital follows Becker and Fuest (2011); see also Zodrow (2010).

[4] The modeling of firm-specific capital generally follows Bettendorf, Devereux, van der Horst, Loretz, and de Mooij (2009), de Mooij and Devereux (2011), Auerbach and Devereux (2018), and McKeehan and Zodrow (2017). Numerous recent analyses have stressed the increasing importance of the combination of intellectual capital and organizational and managerial skill, including an OECD study by Demmou et al., (2019) as well as Hassett and Shapiro (2011), Peters and Taylor (2017), and Ewens et al. (2020). These studies suggest that such firm-specific capital may be 40 percent or more of total capital.

[5] For recent discussions of the controversial issue of the extent of income shifting by US multinationals, see Dharmapala (2014, 2018), Clausing (2020a, b), and Blouin and Robinson (2020).

[6] The inclusion of intermediate goods in the production functions of MNE parent firms and subsidiaries follows Desai, Foley, and Hines (2009).

The macroeconomic effects of this policy are shown in Table 1. Because the various tax increases on capital income—the rate increase in both the short and long runs and the other three provisions in the short run—reduce the after-tax return to saving and investment and increase the cost of capital to firms, policy P1 reduces saving and investment and, over time, reduces the capital stock. Investment in ordinary capital declines initially (two years after enactment) by 1.9 percent, by 1.3 percent ten years after enactment, and by 1.6 percent in the long run; this effect is only modestly affected by imports of ordinary capital into the United States, which increase in the long run by 0.2 percent. Together these changes imply that the total stock of ordinary capital declines gradually to a level 0.6 percent lower ten years after enactment and 1.2 percent lower in the long run. The increase in the statutory corporate income tax rate results in a reallocation abroad of FSK, which declines initially by 2.7 percent, by 3.5 percent 10 years after enactment, and by 2.9 percent in the long run.

The decline in the stocks of ordinary capital and FSK gradually reduce the productivity of labor over time and thus real wages, which fall by 0.6 percent in the long run, while labor compensation falls by 0.6 percent initially, by 0.3 percent ten years after enactment, and by 0.6 percent in the long run. Employment falls initially by 0.7 percent, but the decline moderates over time to 0.1 percent 10 years after enactment and no effect in the long run. Recall that our model assumes full employment (accounting for all supply and demand factors in the model), so that these declines reflect a reduction in hours worked in response to the policy-induced changes in wages and incomes, including the increases in transfer payments, holding the number of employees constant. Suppose instead that labor hours worked per individual were held constant. In that case, focusing on employment effects over the ten-year budget window immediately following reform, the declines in hours worked would be equivalent to declines in employment of approximately just over 1.0 million FTE jobs two years and five years after enactment, and a decline of 0.1 million FTE jobs ten years after enactment. In terms of the duration of the reduction in employment over the first ten years after enactment, the average annual reduction in employment would be equivalent to a loss of roughly 0.6 million jobs, or 5.7 million total "job years" lost over the ten-year interval.[7]

The additional tax revenues, which reflect a static ten-year revenue gain of $1.7 trillion over 2021–2030,[8] finance larger transfers, which increase initially by 12.1 percent, by 6.3 percent ten years after enactment, and by 5.3 percent in the long run.[9]

The declines in the ordinary capital stock, FSK, and (to a much smaller extent) employment imply that GDP declines as well, by 0.5 percent initially, by 0.4 percent 10 years after enactment, and by 0.6 percent in the long run. Consumption also declines, but by less than GDP since the declines in investment are disproportionately large; consumption declines initially by 0.1 percent, by 0.2 percent ten years after enactment, and by 0.4 percent in the long run.[10]

Finally, we note that the relatively large declines in the U.S. stock of relatively mobile FSK cited above, which arise primarily due to the increase in the U.S. statutory corporate income tax rate, imply that the effects of the tax change are disproportionately large in the multinational sector that utilizes FSK. For example, in the multinational sector of the model, investment in ordinary capital declines by 3.2 percent ten years after enactment (rather than by 1.3 percent for the economy as a whole) and by 3.9 percent in the long run (rather than by 1.6 percent). Although the employment effects in the multinational sector are quite similar to those in the

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[7] For example, the loss of a job upon enactment of the tax change that was reversed eight years after enactment would result in the loss of eight "job years."

[8] Our static revenue estimates draw on the estimates provided by the Tax Policy Center (Mermin et al., 2020) and the American Enterprise Institute (Pomerleau, DeBacker, and Evans, 2020, and Pomerleau and Seiter, 2020).

[9] Interest rates decline initially and lower interest payments on the national debt allow a relatively large increase in transfer payments; this effect diminishes with time as interest rates return to near their initial levels.

[10] For purposes of comparison, we also simulated the same tax change under the assumption that revenues are used to finance a reduction in the deficit for 20 years before being used to finance a reduction in transfers (the partial debt finance approach used by JCT and others as discussed above). This alternative assumption regarding the use of revenues reduces the negative macroeconomic effects of the tax change, as debt reduction frees up funds for domestic investment. For example, in the long run, investment in ordinary capital and the stock of ordinary capital increase by 1.6 percent and 1.4 percent rather than declining by 1.6 percent and 1.2 percent, respectively, the real wage increases by 1.4 percent rather than falling by 0.6 percent, and GDP declines by 0.4 percent rather than by 0.6 percent.

overall economy, output in the multinational sector declines by 0.8 percent ten years after enactment (rather than by 0.4 percent in the economy as a whole), and by 1.1 percent in the long run (rather than by 0.6 percent).

Table 1. Macroeconomic Effects of Policy P1

(Percentage changes in aggregate variables, relative to steady state with no reform)

Variable % Change in Year:	2*	5**	10***	20	50	LR
GDP	−0.5	−0.8	−0.4	−0.5	−0.6	−0.6
Consumption	−0.1	−0.5	−0.2	−0.4	−0.4	−0.4
Investment in ordinary K in US	−1.9	−1.9	−1.3	−1.4	−1.5	−1.6
Imports of ordinary K into US	−0.4	−0.4	−0.4	−0.3	−0.1	0.2
Stock of ordinary K in US	−0.1	−0.4	−0.6	−0.8	−1.1	−1.2
Stock of FSK in US	−2.7	−3.8	−3.5	−3.3	−3.1	−2.9
Employment (hours worked)****	−0.7	−0.6	−0.1	−0.1	0.0	0.0
Labor compensation	−0.6	−0.6	−0.3	−0.4	−0.6	−0.6
Real wage	0.1	0.1	−0.3	−0.4	−0.5	−0.6
Government transfers (not incl. SS)	12.1	11.6	6.3	5.9	5.5	5.3

Policy P1 increases the CIT rate to 28 percent, reinstates the corporate AMT, eliminates expensing and the 20 percent passthrough deduction, and increases the top individual income tax rate to 39.6 percent. Revenues finance a proportionate increase in all transfer payments other than Social Security benefits.

*Expressed in terms of dollar values in 2023 (assuming enactment in 2021, with 4.1% steady state growth between 2021 and 2023), these changes would reflect a reduction of $117 billion in GDP and a reduction in $80 billion in investment in ordinary capital. Policy P1 results in a reduction of $662 in wage income per household, coupled with an increase of $686 in transfers per household.

**Expressed in terms of dollar values in 2026 (assuming enactment in 2021, with 10.5% steady state growth between 2021 and 2026), these changes would reflect a reduction of $190 billion in GDP and a reduction in $83 billion in investment in ordinary capital. Policy P1 results in a reduction of $662 in wage income per household, coupled with an increase of $767 in transfers per household.

***Expressed in terms of dollar values in 2031 (assuming enactment in 2021, with 22.0% steady state growth between 2021 and 2031), these changes would reflect a reduction of $119 billion in GDP and a reduction in $66 billion in investment in ordinary capital. Policy P1 results in a reduction of $371 in wage income per household, coupled with an increase of $351 in transfers per household.

****As discussed in the text, the model assumes full employment. However, if instead labor hours worked per individual were held constant, the declines in hours worked would be equivalent to a decline in employment of approximately 1.0 million FTE jobs in 2022, 1.0 million FTE jobs in 2026, and 0.1 million jobs in 2031. In terms of the duration of the reduction in employment over the first ten years after enactment, average annual jobs lost would be 0.6 million jobs, or 5.7 million total "job years" lost over the ten-year interval.

Note: The net effect of the policy is captured by the "equivalent variation (EV)," the amount that would have to be given to households to make them indifferent to the policy change. The EV varies from a loss of 2.2 percent to a gain of 0.2 percent of remaining lifetime resources for all generations alive at the time of enactment (with younger generations faring better) and equals a loss of 0.1 percent of lifetime resources in the long run.

V. CONCLUSION

In this paper, we use the Diamond-Zodrow computable general equilibrium model of the U.S. economy to simulate the macroeconomic effects of tax policy changes relative to the tax system enacted under the Tax Cuts and Jobs Act in 2017. The policy involves increases in the corporate tax rate to 28 percent, coupled with reinstatement of the corporate AMT, elimination of expensing of most depreciable assets and the 20-percent deduction for certain pass-through business income, and an increase in the top individual income tax rate to 39.6 percent. In order to focus primarily on the effects of the tax increases considered in isolation, we assume that the revenues are used to finance an increase in government transfers, as this use of revenues has relatively few distortionary feedback effects on the economy (although the positive income effects of the transfers do cause recipients to work less (consume more leisure), which increases the simulated labor supply effects of the three policies).

The simulation results indicate that although such tax policy changes would raise significant amounts of revenues, these revenue increases would naturally have economic costs, and these costs increase with the size of the corporate income tax rate increase. For example, when these policy changes are implemented in the model, investment in ordinary capital declines by 1.9 percent in the short run, by 1.3 percent

10 years after enactment, and by 1.6 percent in the long run. Employment declines by 0.7 percent in the short run, by 0.1 percent ten years after enactment, and is unchanged in the long run. Because our model assumes full employment, these employment declines reflect a reduction in hours worked in response to the policy-induced changes in wages and incomes, including the increases in transfer payments, holding the number of employees constant. Suppose instead that labor hours worked per individual were held constant. In that case, focusing on employment effects over the ten-year budget window immediately following reform, the declines in hours worked would be equivalent to declines in employment of approximately just over 1.0 million FTE jobs two years and five years after enactment, and a decline of 0.1 million FTE jobs ten years after enactment. In terms of the duration of the reduction in employment over the first ten years after enactment, the average annual reduction in employment would be equivalent to a loss of roughly 0.6 million jobs, or 5.7 million total "job years" lost over the ten-year interval.

The net effects on GDP are declines of 0.5 percent in the short run, 0.3 percent ten years after enactment, and 0.4 percent in the long run. To capture orders of magnitude, the short run effects of the tax change, measured at 2023 levels (two years after assumed enactment in 2021), correspond to a decline in GDP of $107 billion, a decline in investment in ordinary capital of $70 billion, and, to a rough approximation, a reduction of 1.0 million jobs, accompanied by an increase in transfer payments of $65 billion. These effects translate into a reduction of $638 in wage income per household coupled with an increase of $585 in transfers per household 2 years after enactment of the tax change.

We conclude with some caveats. In our view, dynamic, overlapping generations computable general equilibrium models of the type used in this analysis are one of the best tools available to analyze the real economic effects of tax policy changes such as those analyzed in this study. In particular, such models provide a rich structure based on fundamental economic theory that captures many of the complex and interacting effects of changes in tax policy, including their dynamic and intergenerational effects, in a comprehensive general equilibrium framework. Nevertheless, it is clear that the estimated effects of the policies presented in this report reflect the results of particular simulations within the context of a specific model. The results of any study that attempts to model the effects of corporate and individual income tax changes in today's highly complex and internationally integrated economy are subject to uncertainty, and this report is no exception. In particular, such results always depend on the details of the policy proposed and how they are modeled, including how the revenues are used, the structural assumptions that characterize the model, and the specific model parameters that are utilized in the simulations.

APPENDIX

In this Appendix, we provide a listing of the parameter values used in our simulations; see Gunning, Diamond and Zodrow (2008) for a discussion of the choices of parameter values in CGE models.

Table A1. Parameter Values Used in the DZ Model

Symbol	Description	Value
Utility Function Parameters		
ρ	Rate of time preference	0.015
σ_U	Intertemporal elasticity of substitution (EOS)	0.50
σ_C	Intratemporal EOS	0.80
σ_H	EOS between composite good, housing	0.30
σ_N	EOS between corporate composite good and noncorporate good	2.00
σ_{NS}	EOS between subsidized and nonsubsidized noncorporate good	2.00
σ_M	EOS between M-sector and C-sector corporate goods	2.00
σ_I	EOS between domestic and foreign produced goods	5.00
σ_R	EOS between rental and owner-occupied housing	1.50
α_C	Utility weight on the composite consumption good	0.73
α_H	Utility weight on non-housing consumption good	0.48
α_{NS}	Utility weight on subsidized non-corporate consumption good	0.50
α_N	Utility weight on composite corporate good	0.62
α_M	Utility weight on M-sector corporate good	0.42
α_R	Utility weight on owner-occupied housing	0.76
α_{LE}	Leisure share parameter of time endowment	0.20
Production Function Parameters		
ε_C, ε_M	EOS for C-sector and M-sector corporate goods	1.00
ε_N	EOS for noncorporate good	1.00
ε_H, ε_R	EOS for owner and rental housing	1.00
γ_C	Capital shares for C-sector corporate goods	0.27
γ_N	Capital share for noncorporate good	0.30
γ_H, γ_R	Capital share for owner and rental housing	0.98
β_X, β_N, β_H	Capital stock adjustment cost parameters	5.0, 10
ς	Dividend payout ratio in corporate sector	0.40
b_C, b_N, b_H, b_R	Debt-asset ratios	0.35, 0.40
β_d	Cost of excessive debt parameter	0.30
γ_{KM}	Capital share parameter in M-sector composite KEL factor	0.27
γ_{MK}	KEL share parameter in M-sector production function	0.66
γ_{MI}	Intermediate good share in M-sector production function	0.05
	Other Parameters	
ε_K	Portfolio elasticity for ordinary capital	0.50
ε_{FSK}	Portfolio elasticity for firm-specific capital	3.0
f_{IS}	Share of profits shifted abroad as a fraction of corporate profits	0.30
n	Exogenous growth rate (population plus productivity)	2.0

DISCLAIMER

This study uses the Diamond-Zodrow model, a dynamic computable general equilibrium model copyrighted by Tax Policy Advisers, LLC, in which the authors have an ownership interest. The terms of this arrangement have been reviewed and approved by Rice University in accordance with its conflict-of-interest policies.

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Strengthening the Manufacturing Supply Chain

PART OF THE NAM AMERICAN RENEWAL ACTION PLAN

Across America, the men and women of the manufacturing industry have stepped up to lead our country through the COVID–19 pandemic response, and the industry is committed to supporting our recovery and long-term renewal. The health and economic crises that we face are unlike anything witnessed in modern history. We know we can build a more prosperous future, but that demands decisive action and bold thinking.

Strengthening the modern manufacturing supply chain is a core part of the path forward, as laid out in the National Association of Manufacturers' "American Renewal Action Plan." Growing the manufacturing base in the United States and onshoring production is vital not only for America's economic strength and job creation but also to prepare for future health crises.

Lawmakers and the administration must act swiftly on these recommendations, to incentivize and catalyze change and to lay the foundation for a renewed modern manufacturing industry in America and a stronger, healthier nation.

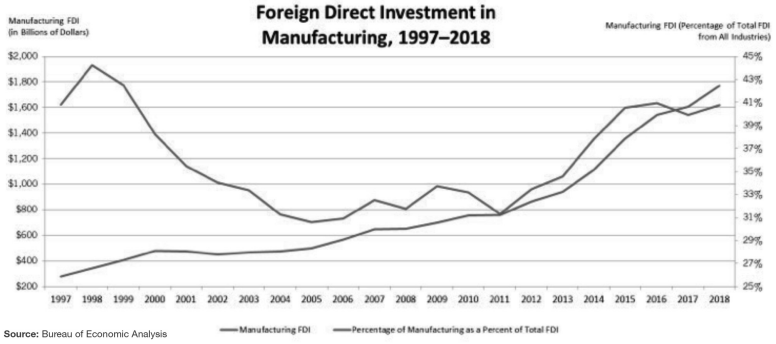
CREATE NEW INCENTIVES TO SUPPORT THE ONSHORING OF MANUFACTURING ACTIVITIES

Adopting policies that grow the U.S. industrial base will result in more American jobs, increase GDP and bolster our national security. Targeted incentives will make the U.S. more attractive for manufacturing investment. A **new tax credit** that encourages companies to make domestic investments in manufacturing is one such tool. The key elements of an effective credit are as follows:

- **Broad applicability**—The credit must be available to all companies that invest in manufacturing activities in the United States, irrespective of the current location of their operations or place of organization. Any expansion of the U.S. industrial base should be encouraged.
- **Stimulate new investments**—Investments in workforce, machinery, equipment and innovation are key to the long-term success of manufacturing. To encourage onshoring, the credit must be equal to 16% or more of these costs.[1]
- **Seamless integration into existing law**—To be effective, the credit must be as simple as possible to calculate, easy to claim and complement existing tax incentives that are available to all manufacturers, irrespective of size or form.
- **Time-limited**—The credit needs to be available for a limited period to encourage immediate investment in America. Specifically, the credit should be applicable to investments made in the next five years.

Foreign Investment Is Important to American Manufacturing

Foreign direct investment is increasingly important to the growth of American manufacturing. In 2018, manufacturing workers accounted for nearly half of the 430,000 Americans employed at new or expanded foreign-owned businesses in the United States.



Source: Bureau of Economic Analysis

PROVIDE INCENTIVES TO HELP COMPANIES RECRUIT, TRAIN AND RETAIN SKILLED WORKERS

One of the key challenges facing manufacturers is access to a skilled workforce. The industry suffers from a "skills gap," in which too many Americans lack the specialized training necessary to immediately step into a modern manufacturing job. One recent study by Deloitte and The Manufacturing Institute, the workforce and education partner of the NAM, found that more than 2.4 million U.S. manufacturing jobs would go unfilled from 2018 to 2028 due to this skills gap and retirements.[2] While that number will likely be reduced in the aftermath of the current crisis, it will not be eliminated because those who are unemployed will still not possess the necessary skills. To encourage onshoring, policymakers should take steps to build a pipeline of workers with the skills needed to operate a modern manufacturing fa-

[1] A forthcoming study by KPMG and The Manufacturing Institute analyzes the primary costs (compensation, property, utilities, taxes and interest rates) associated with manufacturing, finding that U.S. costs are on average 16% higher than a peer group of countries.

[2] Deloitte and The Manufacturing Institute, Skills Gap and Future of Work Study (2018), available at *http://www.themanufacturinginstitute.org/~/media/E323C4D8F75A470E8C96D7A07F0A14FB/DI_2018_Deloitte_MFI_skills_gap_FoW_study.pdf.*

cility. Without these policies, the U.S. will lack the manpower needed to grow the manufacturing base, keeping potential American jobs offshore.

Accordingly, measures to increase investment and job creation in manufacturing in the United States must be accompanied by policies that expand the pool of skilled workers and assist companies in attracting and retaining talent. In the fierce competition for skilled domestic labor, these incentives will help ensure that manufacturing is the job of choice for a new generation of workers.

A reduction in costs associated with training is a key incentive that policymakers can offer to quickly build a pipeline of skilled U.S. workers. The Manufacturing Institute recommends two tax law changes that would immediately reduce these costs:

- First, high-quality earn-and-learn models are essential to staff new manufacturing facilities effectively. To defray the costs associated with these programs, new deductions should be put in place for items such as the initial set-up costs, cost of wages for learners and trainers and other direct costs associated with these programs.
- Second, employees should not be penalized for investments that employers make in their skills. Existing guidance in Internal Revenue Code Section 127 only allows for $5,250 of **educational assistance** to an employee to be excluded from an employee's gross income. This amount should be adjusted to $11,500 to increase participation in approved training programs.[3]

On-the-job training will help reduce the skills gap, but a rapid onshoring of activity will require manufacturers to quickly get workers into jobs. To ensure that the industry can attract the number of workers needed to fuel an expansion of the U.S. industrial base, new policies to reduce the financial burden on employers need to be adopted:

- Lawmakers can **temporarily reduce the employer's share of the payroll tax** by at least 25% for the first year of a newly hired manufacturing worker's employment.
- Policymakers should create a **new federal fund** of at least $3.1 billion per year, for two fiscal years, **to help manufacturers reduce the cost of providing health care and retirement benefits** to workers. This amount assumes that the manufacturing workforce grows by 20% as a result of onshoring. With that level of growth, $3.1 billion represents federal assistance of 10%, meaning the employers would pay 90% of benefit costs for newly hired manufacturing workers.[4]

This aid would help reduce the cost of new investments and act as an incentive to onshoring manufacturing. This assistance should be narrowly tailored to aid recently constructed, upgraded or expanded facilities that increase their manufacturing workforce and limited to benefits payments for new workers. Enacting these policies will reduce the costs associated with locating a new investment in the United States and allow manufacturers to continue providing generous wage and benefit packages to American workers.

ENHANCE AMERICA'S SUPPORT FOR INNOVATION

Innovation is the lifeblood of the manufacturing industry. New technologies, materials, products and processes drive the industry forward. To make America a competitive location for onshoring, policymakers must make a strong federal commitment to innovation.

The importance of research to manufacturers cannot be overstated: the industry accounts for 63% of all U.S. private-sector R&D, spending more than $271.3 billion in 2018.[5] Yet, the U.S. lags far behind others in incentives for private-sector R&D, ranking 26th among advanced economies for R&D tax incentives.[6] In the competi-

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[3] Bipartisan legislation has been introduced in the House of Representatives that would implement this policy (H.R. 4849).

[4] In 2018, manufacturers spent $155.8 billion on health and retirement benefits. If we grow the manufacturing sector through onshoring by 20%, manufacturers would spend an additional $31.2 billion per year in benefits payments.

[5] Bureau of Economic Analysis.

[6] Ernst and Young, Impact of the Amortization of Certain R&D Expenditures on R&D Spending in the United States (October 2019), available at *https://investinamericasfuture.org/wp-con-*

Continued

tion for industrial investment, other countries have recognized the importance of research and have moved aggressively to encourage these high-value activities to relocate within their borders. For example, the Chinese government has committed hundreds of billions of dollars to directly boost innovation.[7] Alarmingly, the U.S. tax incentives for research are scheduled to shrink significantly, exacerbating the disparity and making it less likely that companies will onshore.

Beginning in 2022, companies will no longer be allowed to immediately deduct their R&D spending. Instead, they will be required to deduct their spending over a period of years, making it more expensive to undertake research. Economists have predicted that this change will cost tens of thousands of U.S. jobs over the next decade and reduce R&D spending by billions of dollars each year.[8] To ensure that America is the most attractive place in the world to start and grow a manufacturing business, lawmakers should **immediately reverse this policy.**[9] There is an urgent need to fix this issue as significant research investments are often approved years in advance. Accordingly, the longer America waits to reverse this policy, the more likely it becomes that investments in innovation are either foregone or driven abroad. In addition, lawmakers should **simplify the R&D tax credit as well as expand its applicability** to other job-creating activities related to R&D. Moreover, the U.S. government can ensure that America remains an attractive environment for R&D by taking a **strategic and tailored approach to controls on exports** to maintain both our security and competitiveness goals. This way, U.S. manufacturers can continue our nation's leadership in innovative technologies and compete on a level playing field in the international marketplace.

The NAM believes that America should establish a revolving **$1 billion public-private investment vehicle** to provide funding and financing to companies of all sizes **to support research into advanced manufacturing technologies.** This fund would support domestic innovation by requiring U.S.-based workforce and production for development of new technologies and ensuring U.S.-backed IP protection for innovation.

Companies conduct a vast amount of R&D in the United States.[10] They use U.S. intellectual property laws and U.S. courts to protect and defend new ideas and valuable innovations, but global market factors lead companies to manufacture the products elsewhere. We can make the United States the country where companies want to both develop new ideas and manufacture the resulting products. Federal policies should use our strengths to offset those global market factors. In particular, lawmakers must create and fund a **program to speed the delivery of valuable patent rights to companies that agree to conduct the operations for their innovative ideas in the United States.** There is currently a backlog of more than 550,000 applications at the U.S. Patent and Trademark Office.[11]

ENSURE THAT BUSINESS LOANS AND CAPITAL EQUIPMENT PURCHASES REMAIN AFFORDABLE

Small and medium-sized companies comprise the backbone of the supply chain and are critical to a vibrant manufacturing sector. Policies that encourage domestication of manufacturing activities will likely require an expansion of domestic supply chain capacity. Small American manufacturers must be ready to expand their facilities, hire more workers and upgrade their machinery. Yet, looming tax law changes will make these required investments more expensive.

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tent/uploads/2019/10/EY-RD-Coalition-TCJA-R-and-Damortization-report-Oct-2019-1.pdf (EY Report).

[7] See James McBride and Andrew Chatzky, Is "Made in China 2025" a Threat to Global Trade?, Council on Foreign Relations, available at *https://www.cfr.org/backgrounder/made-china-2025-threat-global-trade.*

[8] *See* EY Report, *supra.*

[9] Members of the U.S. House Committee on Ways and Means have introduced bipartisan legislation (H.R. 4549) to address this issue.

[10] As of 2016, the U.S. remained the world's single largest funder of R&D at $511.1 billion, which is more than 28% of the global total. Congressional Research Service, The Global Research and Development Landscape and Implications for the Department of Defense (updated Nov. 18, 2019), available at *https://fas.org/sgp/crs/natsec/R45403.pdf.* The 2019 Global Innovation Index ranks the United States as third globally based on innovation capabilities, citing strengths in R&D and the presence of R&D companies. World Intellectual Property Organization, Global Innovation Index 2019: The United States of America (July 2019), available at *https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2019/us.pdf.*

[11] See U.S. Patent and Trademark Office, FY 2019 Performance and Accountability Report, available at *https://www.uspto.gov/sites/default/files/documents/USPTOFY19PAR.pdf.*

Small and medium-sized manufacturers are typically not publicly traded and must borrow funds to invest and grow. Currently, companies may deduct a portion of the interest paid on business loans. This deduction is limited to 30% of a company's earnings before interest, tax, depreciation and amortization (EBITDA). Beginning in 2022, an EBIT standard takes effect. This change will burden manufacturers disproportionately. By necessity, the industry invests heavily in depreciable equipment and machinery as well as amortizable assets, such as patents, formulas, licenses and trademarks. Excluding the depreciation and amortization associated with these investments from the base upon which the maximum interest expense is calculated will result in fewer deductions, making it more expensive for small and medium-sized manufacturers to make critical investments in their businesses.

Similarly, a tax change that will take effect in 2023 will reduce—and ultimately eliminate—the benefit of "bonus depreciation," a policy that allows purchasers of machinery and equipment to deduct the cost of the item immediately. Accelerating the tax benefits associated with investments in the property needed to manufacture goods can dramatically reduce the cost of acquiring new machinery and spur investments in more efficient technologies, particularly among small and medium-sized companies.[12] When bonus depreciation expires, the cost of capital investments will be deducted in smaller amounts over a longer period of time—immediately increasing the after-tax cost of purchasing machinery and equipment necessary to fuel manufacturing growth.[13]

When these policies take effect, they will create an incentive for manufacturers to produce goods overseas, rather than in the United States. Congress and the administration must work together to pass **legislation to prevent these tax law changes from occurring** and avoid the resulting decrease in domestic investment.

OPEN THE FEDERAL GOVERNMENT'S PORTFOLIO OF SURPLUS PROPERTY TO MANUFACTURERS

Facilities costs are among the key factors in deciding where to locate manufacturing activities, and yet the cost of acquiring property suitable for industrial development is higher in the United States than in other advanced countries.[14] The federal government has tools at its disposal to directly reduce these costs, which could help spur investment in new factories and, in turn, create new jobs. Specifically, the General Services Administration maintains a portfolio of government-owned unused property and already has in place a framework that can be utilized to transfer this property to industry at reduced costs.

While the GSA's process for disposing of federally owned real estate is straightforward, it is often quite lengthy.[15] If a federal agency needs property, it can receive a transfer of the asset from GSA. If no federal agency expresses a need for the real estate, however, GSA, through the Public Benefit Conveyance Program, is authorized to transfer property to certain public entities and nonprofits, such as state and local government, for discounts of up to 100% for certain uses that are authorized by statute.[16]

To encourage investment in factories and new jobs, policymakers need to **authorize state and local governments to sell the property**—for the discounted rate at which it was acquired—**to companies that agree to construct manufacturing facilities on the land or use the property for manufacturing purposes.**

Moreover, to speed the delivery of these assets, federal agencies can identify and **publicly list all available property useful for manufacturers** (*e.g.,* land, warehouses, office space, labs) and identify ways to streamline the sale of these federal

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[12] In a 2018 economic study, the Tax Foundation found that making bonus depreciation permanent would grow the economy by 0.9% and create 172,300 additional full-time equivalent jobs. Tax Foundation, The TCJA's Expensing Provision Alleviates the Tax Code's Bias Against Certain Investments (September 5, 2018), available at *https://taxfoundation.org/tcja-expensing-provision-benefits/*.

[13] Legislation has been introduced in the Senate (S. 3296) and House (H.R. 6802) that would make bonus depreciation permanent.

[14] A 2016 KPMG study examining a limited pool of advanced economies found that industrial land acquisition costs were lower in France, Canada and Mexico than in the United States. KPMG, Competitive Alternatives (2016), available at *http://mmkconsulting.com/compalts/*.

[15] From January to September 30, 2019, only 138 public sales of federal real property took place. *See* General Services Administration, FY 2019 Performance Overview: Office of Real Property Utilization and Disposal, available at *https://disposal.gsa.gov/s/whatwedo.*

[16] The PBC program requires GSA to prioritize certain public uses, such as addressing homelessness, before the agency can sell to states and local governments.

properties.[17] In addition, agencies should work to **identify underutilized federal real property sites suitable for public-private partnership opportunities** and expedite the review of such agreements.[18]

The NAM believes that these programs should be open to all companies that seek to build manufacturing facilities in the United States, including companies that already operate domestically as well as those that seek to move production to America.

ANNUALLY REVIEW U.S. COMPETITIVENESS

More than 30 years passed between the Tax Reform Act of 1986 and enactment of the Tax Cuts and Jobs Act. In the intervening decades, our tax code became a drag on American businesses. Prior to enactment of the TCJA, our high corporate tax rate and outdated model for taxing income earned abroad created a strong incentive to keep earnings overseas and in fact caused some companies to flee America.[19] Similarly, since the modern U.S. federal regulatory state was born in the 1930s, regulations have accumulated year after year at an increasing pace, imposing costs on firms of all sizes and across all industries. Some credible analyses have estimated that the U.S. economy would be 25% larger if regulatory burdens had remained constant since 1980.[20] The recent focus on right-sizing the regulatory regime helps reverse this trend.

The NAM believes that the policies in this plan, if adopted, will make the U.S. a more attractive place to start and grow a manufacturing enterprise. However, other nations will respond with policy changes of their own. America should protect its industrial base by ensuring that our national policies are the most competitive in the world. That will require **an annual report on the relative burdens imposed by the U.S. tax and regulatory regimes.** This review should be conducted by the Department of Commerce and include recommended policy changes to enhance U.S. competitiveness. These changes should be afforded **expedited congressional consideration.**

HARMONIZE SUSTAINABLE PERMITTING

America has established a strong track record in environmental protection; growth in the U.S. industrial base as a result of onshoring should be consistent with these protections. Onshoring manufacturing supply chains that currently lack a domestic presence requires a renewed focus on sustainability that modernizes all levels of permitting. However, it currently can take years to obtain regulatory approvals for investments in certain manufacturing sectors—far longer than in other advanced countries. While well intentioned, this complicated, multilayered permitting regime acts as a significant barrier to developing new industries in America and a disincentive to onshoring. U.S. policymakers can modernize and strengthen permitting by encouraging early engagement and open collaboration among permitting authorities, as well as taking steps to speed the delivery of permits while at the same time continuing to protect our environment.

To further harmonize our environmental needs and economic challenges, Congress should take steps to promote early engagement and open collaboration between stakeholders and federal, state, tribal and local permitting authorities:

- Providing $300 million in additional resources to assist states, tribes and localities in addressing staffing and resource constraints to accelerate project delivery.

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[17] For example, the Federal Assets Sale and Transfer Act (Pub. Law No. 114–287) provides an expedited route for the government to dispose of certain properties and requires agencies to develop lists of disposal recommendations. This provides a model upon which the federal government could build a manufacturing-focused program.

[18] A 2016 GAO document indicates that public-private partnerships may be an underutilized tool available to speed the distribution of property. Government Accountability Office Letter to Senator Ron Johnson and Senator James Lankford, Federal Real Property: Public-Private Partnerships Have a Limited Role in Disposal and Management of Unneeded Property (August 30, 2016), available at *https://www.gao.gov/assets/680/679352.pdf.*

[19] *See, e.g.,* Congressional Budget Office, An Analysis of Corporate Inversions (September 2017) ("Tax rates and other provisions in the tax system influence multinational corporations' choices about how and where to invest, particularly as corporations assess whether it is more profitable to locate business operations in the United States or abroad.").

[20] *See* Bentley Coffey, Patrick A. McLaughlin and Pietro Peretto, The Cumulative Costs of Regulation, Mercatus Center (2016), available at *https://www.mercatus.org/system/files/Coffey-Cumulative-Cost-Regs-v3.pdf.*

■ Increasing funding for permit processing, assistance and approval by at least 25% at federal agencies.

Onshoring manufacturing requires first establishing basic infrastructure—from water and energy delivery to transportation—before ground can ever be broken on a major facility. Obtaining permits for these items can take years, especially when reviews are piecemeal. Immediate action can be taken, utilizing existing authority and without weakening reviews, to reduce the time necessary to obtain permits and set the stage for onshoring. Congress established the Federal Permitting Improvement Steering Council four years ago to coordinate permitting activities among agencies and stakeholders.[21] FPISC simply facilitates concurrent reviews; it does not eliminate required environmental reviews. The following steps should be taken for the streamlined, job-creating tools of FPISC to serve as powerful incentives in the global battle for manufacturing investment:

■ The President should issue an executive order that:

- Reaffirms the FPISC's existing authority to oversee and coordinate with all applicable agencies and levels of government to identify, prioritize and set timelines that avoid unnecessary delays;
- Empowers the FPISC, in partnership with states, to align overlapping and conflicting federal and state environmental review and permitting processes;
- Reprograms existing federal resources to fully fund the FPISC's environmental permitting support; and
- Directs the FPISC to identify large-scale critical infrastructure projects, with demonstrated short-term high economic impact, as "covered" projects, across a broad range of infrastructure sectors, including manufacturing.

AMERICAN RENEWAL

The time to act is now. America's recovery and renewal following the COVID–19 crisis will be a long journey. Policymakers must prioritize strengthening the manufacturing supply chain, and taking these steps, alongside the rest of the NAM's "American Renewal Action Plan," is the way to do so successfully. The work can begin today, laying the foundation for a stronger, more prosperous America.

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April 5, 2021

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Re: Risks in the Semiconductor Manufacturing and Advanced Packaging Supply Chain (BIS–2021–0011; Docket No. 210310–0052)

The National Association of Manufacturers is pleased to provide the Department of Commerce, Bureau of Industry and Security, with these comments on Risks in the Semiconductor Manufacturing and Advanced Packaging Supply Chain, a 100-day review called for by Executive Order 14017 on America's Supply Chains.

The NAM is the largest manufacturing association in the United States representing manufacturers in every industrial sector and in all 50 states. Manufacturing employs 12.2 million men and women, contributes more than $2 trillion to the U.S. economy annually, has the largest economic impact of any major sector,

[21] As an initial matter, Congress should reauthorize and fully fund the FPISC.

and accounts for nearly 62% of private-sector research and development.[1] The NAM is the powerful voice of the manufacturing community and the leading advocate for a policy agenda that helps manufacturers compete in the global economy and create jobs across the United States.

Manufacturing in the United States depends on resilient, diverse and secure supply chains. In the past year, the COVID–19 global pandemic has brought into focus the complexities, interdependencies and certain risks of global supply chains. The NAM is committed to supporting manufacturers navigate an unpredictable global market while advocating for a policy and regulatory environment that reduces uncertainty and grows the manufacturing base in the United States. Manufacturers' response to the health and economic crisis of a global pandemic has demonstrated that innovation in industry paired with decisive policy action can yield solutions at record speeds.

We are encouraged by the administration's focus on identifying risks in semiconductor manufacturing supply chains and policy solutions to address those risks, and manufacturers support government and industry collaboration to provide bold progress to strengthen semiconductor supply chains to support our country's economic leadership and national security. The policy solution includes increasing domestic chip manufacturing capacity in the long-term and reducing risks in global supply chains in the short-term by engaging with allies and partners. Manufacturers recognize that it is not feasible to shift full, complex semiconductor supply chains to the United States overnight, and global companies will continue to carefully manage risks through geographically diversified supply chains. The U.S. government's strategy must include both of these approaches.

The NAM represents the key aspects of the semiconductor manufacturing supply chain, from research and development to design, fabrication, packaging and end-use production. Chip manufacturing is among the most complex, costly and precise processes in the world, and semiconductors amount to a half-trillion-dollar global supply chain.[2] Today's semiconductor industry depends on an intricate global network. According to Accenture, "each segment of the semiconductor value chain has, on average, 25 countries involved in the direct supply chain and 23 countries involved in supporting market functions"[3] Semiconductor products can cross international borders 70 times before the end-product reaches a customer.[4]

In addition to providing significant manufacturing capacity as a sector itself, semiconductors are a core component driving innovation and production across the full manufacturing ecosystem. Manufacturers depend on both legacy and cutting-edge chips for their products and processes. Chips are integrated into everyday essential products, including but not limited to phones, laptops, water heaters and automobiles. These chips not just ubiquitous in our day-to-day products but also enable critical infrastructure such as power grids, communications networks and cloud computing. Chips are integral to U.S. aerospace and defense system, and they are a key component powering the digital transformation in Manufacturing 4.0 as manufacturers develop and embrace advanced technologies that are more reliant on data, including the Internet of things and automation.

As an essential component in manufacturing, disruptions to the supply of semiconductors can result in impacts across the supply chain of specific products and entire sectors. For example, passenger and commercial vehicles use chip-enabled electronics for essential and required components of their systems, including engine control systems, collision avoidance censors and emission control modules. Semiconductor supply disruptions have recently interrupted delivery of these technical components and caused ripple effects across the broader manufacturing supply chains of automotive vehicles and heavy-duty trucks, leading manufacturers to reduce output and institute rolling production delays. This further disrupts predictability for the large and small suppliers that provide other inputs and component products to equipment manufacturers.

Other sectors are also experiencing uncertainty in semiconductor supply chains that ripple across their supply chains. Persistent challenges with access to semi-

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[1] *https://www.nam.org/facts-about-manufacturing/.*
[2] *https://cset.georgetown.edu/wp-content/uploads/The-Semiconductor-Supply-Chain-Issue-Brief.pdf.*
[3] *https://www.accenture.com/_acnmedia/PDF-119/Accenture-Globality-Semiconductor-Industry.pdf.*
[4] *https://www.accenture.com/_acnmedia/PDF-119/Accenture-Globality-Semiconductor-Industry.pdf.*

conductors can undermine COVID–19 response efforts, as chips are necessary across the range of sectors that are delivering vaccines, medical devices, agricultural goods and essential supplies. Shortages can impede anticipated increases in production and sales in COVID–19 recovery and threaten to delay progress on bold infrastructure and digital transformation initiatives.

The gap between chip demand and the available supply is expected to grow over the next five years. Manufacturers' competitiveness will depend on ensuring the chip supply chain does not stall the delivery and adoption of advanced technologies. For example, according to a recent study from The Manufacturing Institute, the workforce development and education partner of the NAM, over 50% of manufacturers report they will be testing or using 5G in some capacity within their facilities by the end of 2021, and 91% of manufacturers indicated the speed of 5G deployment will have a positive impact on their ability to compete globally.[5] For manufacturers, chip-enabled technologies are crucial for enabling the factories of the future and for delivering innovation in autonomous vehicles and defense technologies.

Policy Recommendations

Given the complex, global nature of semiconductor supply chains, many policy options will be targeted toward making long-term improvements to the security and reliability of these supply chains. This current 100-day review and the year-long sectoral supply chain review required by Executive Order 14017 are important opportunities to identify and develop these policy solutions that will take time to implement. However, to address immediate and acute shortages, end users and consumers should work collaboratively with semiconductor manufacturers to plan and pursue reasonable efforts to relieve immediate supply chain disruptions to the greatest extent possible.

The federal government must begin acting on solutions now, and the following recommendations would address the critical national need for reliable, resilient and secure semiconductor supply chains and increase chips manufacturing capacity in the United States:

Pursue programs and policies that encourage the expansion of domestic semiconductor supply chains. The NAM's *Strengthening Manufacturing Supply Chains* proposal provides a clear set of recommendations for growing domestic manufacturing, and it recognizes that onshoring production across manufacturing sectors is vital for America's economic strength and job creation.[6] The full plan is included as an attachment to this submission.

Among the plan's recommendations are specific proposals that should guide policy solutions for semiconductor supply chains, including:

- Enact a new tax credit that encourages domestic investments in manufacturing and make tax law changes that reduce costs for manufacturers to hire and retain a pipeline of skilled U.S. workers.
- Support U.S. private-sector R&D by immediately reversing the R&D amortization tax change set to go into effect in 2022 that will prevent companies from being allowed to immediately deduct their R&D spending, and simplify the tax credit and expand its application.
- Establish a bold public-private investment vehicle to provide funding and financing to companies of all sizes to support research into advanced manufacturing technologies. Speed the delivery of intellectual property protections for companies that conduct operations for their innovative ideas in the United States.
- Open the federal government's portfolio of surplus property to manufacturers to build manufacturing facilities in the United States, which would reduce costs and spur investments.
- Harmonize sustainable permitting required to establish basic infrastructure that must be in place before companies can break ground on major facilities.

Fully fund programs authorized by Congress in the CHIPS for America Act and speed their implementation to boost domestic chip manufacturing. Establishing and expanding domestic chip manufacturing requires significant upfront capital expense. U.S. policies should incentivize the capital investments that support

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[5] *https://www.themanufacturinginstitute.org/wp-content/uploads/2021/03/Manufacturing-Institute-5G-study.pdf*.

[6] *http://documents.nam.org/COVID/NAM%20-%20Strengthening%20the%20Manufacturing%20Supply%20Chain.pdf?_zs=K1Jwd1&_zl=gVGo6*.

domestic manufacturing, as well as the research and development and design efforts that supports the semiconductor manufacturing ecosystem.

Congress included provisions of the CHIPS for America Act in Sections 9902 and 9903 of the William M (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, which became law on January 1, 2021. The law authorizes programs targeted to help manufacturers build and modernize chip manufacturing facilities in the United States. Congress should fully fund the enacted programs. It should further support the industry by providing an investment tax credit for these investments.

Domestic manufacturing incentives should support the full range of chips that commercial and public sector entities rely on, including next generation wafers designed to support advanced processing performance and legacy chips that continue to support multiple commercial and government applications. Policies should build on the United States' leadership in producing advanced chips and improve reliable access for older chipsets.

Domestic manufacturing incentives should identify and prioritize foreign dependencies and bottlenecks in the semiconductor supply chain, adding capacity, improving quality and creating stable regulatory environments for domestic production of these critical components.

Provide robust funding for R&D initiatives underway at the Departments of Commerce, Defense and Energy. These efforts should prioritize identification of the infrastructure and technical capabilities in domestic semiconductor supply chains, gaps in existing capabilities and the roll of strategic R&D investments to fill gaps, accounting for government and private sector demands and capabilities.

Streamline export control policies to support U.S. competitiveness in semiconductor manufacturing. Manufacturers fully recognize and support the need to safeguard critical technologies from foreign actors that pose identified threats to the United States. Equally important to U.S. national security is the ability to maintain and strengthen the innovation, competitiveness and leadership of the U.S. manufacturing and defense industrial base.

Currently, domestic semiconductor manufacturers can be deterred from taking on a project that is heavily controlled due to the burdensome and costly nature of complying with existing export control regulations. This can force domestic manufacturers to source semiconductor products offshore, or require them to downgrade to an older technology, resulting in an inferior and less competitive final product. Where possible without sacrificing national security goals, manufacturers encourage the Departments of Commerce and State to streamline export control policies, especially as they relate to deemed exports, to allow companies within the U.S. manufacturing and defense industrial base to be able to obtain semiconductor components from foundries located in the United States.

Strengthen the manufacturing workforce, especially in the science, technology, engineering, and mathematics (STEM) fields that support the chips manufacturing ecosystem.

Manufacturing in the United States, including semiconductor manufacturing, depends on a strong workforce to innovate and succeed, and manufacturers continue to face a workforce crisis, with 65.8% of respondents to the most recent NAM Manufacturers' Outlook Survey indicating that they continue struggling to find sufficient talent.[7] The workforce challenge is expected to get worse in the coming years, with a study by Deloitte and The Manufacturing Institute showing that nearly half of the estimated 4.6 million jobs manufacturers will need to fill over the next decade could go unfilled.[8] According to the Ml, job openings in manufacturing are highly technical, workers require specialized skills training and credentials to qualify for these jobs and manufacturers need to attract a diverse set of workers with technical backgrounds in STEM disciplines.[9]

Policymakers should work with manufacturers on solutions to close the skills gap and encourage competitiveness: which includes, earn-and learn programs, certifi-

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[7] *https://www.nam.org/2021-1st-quarter-manufacturers-outlook-survey/.*

[8] *https://www.themanufacturinginstitute.org/wp-content/uploads/2020/03/MI-Deloitte-skills-gap-Future-of-Workforce-study-2018.pdf.*

[9] *https://www.themanufacturinginstitute.org/wp-content/uploads/2020/03/MI-Hiring-Engine-Job-Opening-Paper.pdf.*

cations, two- and four-year degrees, on-the-job training, upskilling, and second chances.

Boost cooperation with allied countries to improve semiconductor supply chain reliability. The concentration of chips production in a small number of overseas locations creates economic and security risks to the entire supply chain. Boosting U.S. domestic capacity should be pursued along with prioritizing strategic collaboration with allies to support short-term supply needs of industry and government and to enhance reliable, diversified supply chains the support U.S. semiconductor companies. Geographically diversified supply chains among allied countries can improve supply chain resiliency and help ensure U.S. manufacturers' access to the global market.

Conclusion

Manufacturers recognize that building resilient semiconductor supply chains and boosting domestic manufacturing capacity will require multiple policy solutions and sustained investments over time. The policy approach should include measures to build our domestic semiconductor manufacturing capabilities over time, as well as immediate efforts to support reliable supply chains among international allies. These solutions are essential to long-term economic competitiveness and national security, and it is critical to act to pursue these solutions now. The federal government can help catalyze this transition by enacting the policy recommendations above while also pursuing a policy environment-in trade, tax, regulatory policy, intellectual property protections and immigration reforms-that supports manufacturers' ability to quickly innovate and build. The NAM looks forward to continued engagement with the administration and policymakers on the ongoing work to strengthen manufacturing supply chains.

Stephanie Hall
Director of Innovation Policy

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

The Finance Committee has worked hard over the last year to tackle the public health and jobs crises brought on by COVID–19. Today the committee meets to discuss another challenge that the pandemic exposed: the fragility of our supply chains, and the need to boost manufacturing in America.

When COVID–19 exploded, factories around the globe shut down and supply chains were cut. Most Americans would recognize the effect of the supply chain crisis as something I'll call a toilet paper problem. It seemed like the supply ran out in the blink of an eye, and overnight nobody could get their hands on a package of toilet paper. Some sellers raised prices, others restricted the marketplace to compensate for the shortages, but the shelves still emptied and Americans were facing a panic.

Household paper products are one thing, but the reality is, huge and vitally important parts of our economy are suffering from their own version of a toilet paper problem too. For example, over the last year there have been concerns about the supply of batteries, medications, and minerals used in electronics.

There are still shortages of personal protective equipment that doctors and nurses need badly. Domestic producers, including one in Oregon, have begun making high-quality respirators and other PPE, but it's still a market dominated by producers in China.

The supply chain crisis setting off the most alarm bells deals with semiconductors. They are a key component of cars, medical devices, appliances, phones and computers, defense technologies, you name it. Americans don't roll out of bed without flipping some switch or checking some device that relies on semiconductors.

Disruptions at a single Taiwanese producer of semiconductors have caused major headaches for manufacturers across the U.S., as well as for American consumers. Factories here in the U.S. have gone quiet as a result of the shortage. The shock waves of this blow to the modern global economy are continuing to ripple out and will cause further problems in the weeks and months to come.

It is a recipe for trouble when one single pandemic, natural disaster, or terrorist attack can sever brittle supply chains and hobble our economy, threaten American jobs, and weaken our national security.

That's why there's bipartisan interest in building up our domestic manufacturing to bolster the supply of semiconductors and other critical components and products. President Biden ordered a comprehensive review of supply chains in several different areas of our economy and national defense. The administration has made it clear that nothing is off the table when it comes to making our supply chains and our economy more resilient.

In addition to America's national and economic security, this is also about high-skill, high-wage jobs. A lot of communities around the country have endured a steady decline since manufacturing jobs peaked decades ago. Our manufacturing economy never fully recovered from the Great Recession before the pandemic hit.

There is a big opportunity to begin to turn that around when you look at high-tech manufacturing. This is an area where my home State of Oregon is a national leader. Intel is one of our biggest employers. Our State is known for the innovation that comes out of the Silicon Forest. Oregonians know that investments in R&D and advanced manufacturing bring about high-wage, high-skill jobs. Those are exactly the kind of jobs this country needs to create a lot more of.

This committee has a host of economic tools in the kit that can help shore up domestic manufacturing. For example, Senator Stabenow and Senator Daines are working with Senator Manchin on the advanced manufacturing credit. Senators Warner and Cornyn and others are working on the issue of chips. In my view, it's also going to be important to look at changes to the 2017 Trump tax law, which in fact created a disincentive for R&D. Fixing that issue—and creating strong and reliable long-term incentives—is going to be key, because the U.S. will not outcompete China and other countries with short-term legislation and never-ending uncertainty.

So I want to keep working with members and with the administration on this issue, because the fact is, this economic challenge is also a job-creation opportunity. The committee is joined this morning by a panel of witnesses who will be able to examine this issue from just about every angle. I want to thank them for joining us, and I look forward to Q&A.

SUBMITTED BY HON. TODD YOUNG, A U.S. SENATOR FROM INDIANA

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March 15, 2021

The Honorable Ron Wyden
Chairman
U.S. Senate
Committee on Finance
Dirksen Senate Office Building
Washington, DC 20510–6200

The Honorable Mike Crapo
Ranking Member
U.S. Senate
Committee on Finance
Dirksen Senate Office Building
Washington, DC 20510–6200

Dear Chairman Wyden and Ranking Member Crapo:

On behalf of Robert Bosch LLC ("Bosch"), a leading global supplier of technology and services, I am pleased to submit these comments for the record for the March 16, 2021 hearing entitled, "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing."

Since 1954, the U.S. has allowed companies to deduct qualified R&D expenses from their taxable income in the same year in which they are incurred. This policy has incentivized innovation and encouraged companies to locate their R&D investments, facilities and jobs in the U.S. Bosch urges the Committee to repeal the change made in the Tax Cuts and Jobs Act and to preserve this critical policy as part of the overall initiative to maintain and enhance the U.S.'s global competitiveness. If the current change is allowed to proceed and take effect in 2022, then the U.S. would be one of only two developed countries with such a punitive approach to R&D investments.

Research and innovation are essential components of Bosch's DNA as a company. For the last two decades, Bosch Research has been shaping the future, playing a key role in the development of technologies such as artificial intelligence, cybersecu-

rity, human-machine interaction, automated driving systems, robotics, advanced circuits and sensors.

Having established a presence in the U.S. in 1906, the Bosch group of companies employ approximately 18,000 associates across the country, operate 25 manufacturing sites, and maintain three dedicated Research and Development Centers in Pittsburgh, Pennsylvania, Sunnyvale, California and Cambridge, Massachusetts. Bosch has a significant presence in Michigan, South Carolina, Illinois, Pennsylvania, and Kentucky, and we are also proud to highlight Bosch's Electric Drives manufacturing facility in Albion, Indiana. Established in 1993, the Albion facility produces several automotive parts and components for domestic vehicle manufacturers, and employs more than 260 associates.

The Silicon Valley and Pittsburgh sites have a long tradition of community engagement, which includes strong collaborations with local universities as well as local grants to support STEM-related activities through the Bosch Community Fund (BCF), the company's U.S.-based charitable foundation.

Bosch is committed to providing technologies and systems for the four business sectors of our company—Mobility Solutions, Energy and Building Technology, Industrial Technology and Consumer Goods. To prepare for future challenges across every area of our business, we rely on the ability to conduct research domestically, which includes collaboration with top universities and industry partners across the United States.

That is why it is so crucial that the U.S. tax code continue to provide sufficient incentives for businesses to invest in research and development of new products and ideas. As noted above, since 1954, the U.S. has allowed companies to deduct qualified R&D expenses from their taxable income in the same year in which they are incurred.[1]

Due to a change made through the Tax Cuts and Jobs Act, beginning in 2022, businesses in the U.S. will no longer be able to immediately deduct their R&D expenses and will instead be required to amortize, or deduct, these expenses over several years. If this is not addressed by Congress in 2021, R&D costs for Bosch and other companies will radically increase, and create a significant disincentive for companies to maintain and grow their critical R&D investments.

Bosch respectfully requests that the Committee consider legislation that would ensure the U.S. tax code continues to support R&D by repealing the amortization provision. We welcome this opportunity to submit comments for the record and look forward to working with the Committee and other stakeholders to address this extremely important issue.

Sincerely,

Mike Mansuetti
President, Bosch in North America

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March 15, 2021

The Honorable Todd Young
Finance Committee
U.S. Senate
Washington, DC 20510

Dear Senator Young:

The COVID–19 pandemic has affected nearly all aspects of American life. As you move forward examining what policies are needed to strengthen America and stimulate our economy, I wanted to share my suggestions on policies affecting the device industry. It has been my privilege to be associated with Cook for more than 50 years

[1] 26 U.S. Code § 174—Research and experimental expenditures.

and I offer these thoughts in that context, but also as a husband, father, grandfather, patient, and, finally, as an employee myself.

Since 1963, Cook has grown from its birth in a spare bedroom in Bill and Gayle Cook's apartment to a world leader in advancing medical care for patients worldwide. There were many setbacks and countless challenges that threatened the success of Cook as our founder, Bill Cook, sought to build an innovative American company that would improve patient care. But Bill was resilient and had the same entrepreneurial spirit that makes this country so unique. These traits, combined with his focus on the patient, are the foundation of Cook's success. The company has been the first to introduce new medical devices contributing to more than 70 new procedures.

For over 50 years, Cook Medical has been inventing, manufacturing, and delivering a unique portfolio of medical devices to healthcare systems around the world. We work closely with physicians to develop technologies that improve patients' lives. Serving over 40 medical specialties and every area of the hospital, we provide treatments in almost every body system. Because we remain family owned, we have the freedom to focus on what we care about: our patients, our employees, and our communities.

Cook is headquartered in Bloomington, Indiana with its U.S. manufacturing plants in Indiana, Pennsylvania, North Carolina, Illinois and California. We also have manufacturing facilities in Ireland, Denmark and Australia. We have direct sales in most of the world where the health care system is developed. Our company employs about 11,600 people around the world with approximately 9,600 of these employees based in the United States. While more than 56 percent of our sales are outside the United States, more than 72 percent of the devices are manufactured in this country.

The Medical Device Industry

In my lifetime, health care has advanced from limited antibiotics and vaccines, exploratory surgery, go-home-and-rest following a heart attack to modern medicine that includes more targeted, minimally invasive medical procedures and treatments that extend lives, improve the quality of life often with better outcomes and greater value. The device industry has been at the center of these advances and offers clean, well-paying jobs with benefits. It is the envy of the world and countries around the world are competing to dominate this industry and workforce and have made gains in recent years.

For many decades, the U.S. medical device industry was one of the few manufacturing and technology industries that consistently maintains a trade surplus. However, that surplus is threatened by competition from other countries that have put in place policies to provide favorable tax, reimbursement and regulatory treatment. As Congress looks to enact policies that stimulate our economy and make America more competitive and resilient, policymakers on both sides of the aisle agree that a key component is to invest in technology, manufacturing, and growth industries of the future.

Cook Policy Suggestions

Supply Chain

As a global company, Cook serves patients around the world, which depends on and benefits from a global supply chain. In some cases, there are certain inputs that we, through our suppliers, must source from outside the United States. The global pandemic tested—but did not break—the supply chain for medical devices. Of course, certain products were in short supply, and I urge policy makers to consider future steps to mitigate the risks and severity of such shortages in future events. Any policy changes related to the supply chain should be targeted to the specific problem that we are seeking to address. Please see the below suggestions:

- **Products used in the critical care setting should be made in America**—By definition, those products used in the critical care setting are essential to caring for patients in dire circumstances. To ensure that we have ongoing access to these needed products, these most essential of products should be domestically manufactured, with critical inputs also domestically sourced or inventoried in sufficient quantities to support defined surge capacity.
- **Medicare payment should recognize and incentivize those products to be made in America**—Medicare, due to its size and scope, exerts a great deal of influence in the U.S. health care market. To encourage more domestic manu-

facturing of needed medical products, there should be an added incentive for those products made in the U.S. via increased reimbursement.

- **The United States should invest in capacity to manufacture critical items**—Not only do we need to ensure that we as a country have access to needed products, we need to ensure that we have the ability to manufacture them in the U.S., and be able to handle a surge capacity situation. This can be encouraged through increased grant opportunities, tax credits and consideration of strategic, long-term contracts for maintenance and upkeep of critical production surge capabilities beyond existing market requirements.

Tax Incentives

Our tax structure should support U.S. manufacturing of devices and these incentives should apply to all, not just those who re-shore. Incentives drive jobs and investment, and because wages and benefits are much higher in the U.S. these countries start with a cost advantage, other countries are increasing their efforts to attract jobs and investment through the use of various incentives, including cash grants.

- **The NOL carryback provision should be maintained**—Cook strongly supports the current net operating loss (NOL) carryback provision, which has been key to infusing cash into mid-size companies as it allows losses generated in tax years 2018, 2019, and 2020 to be carried back five years. While the Paycheck Protection Program (PPP) for smaller companies and other liquidity measures for larger companies were generally very successful, the Main Street Program, which was targeted to create liquidity for mid-sized companies, was not very effective as intended so the NOL provision really filled that void. We remain concerned about the House-passed HEREOS Act provision resurfacing in future reconciliation legislation or an infrastructure bill that would include a revenue offset to significantly curtail the CARES Act NOL provision and require companies to pay back money that might have already been spent to stay afloat during the pandemic.
- **The U.S. must keep a competitive tax rate**—It is important the U.S. keep a competitive tax rate in order to encourage domestic manufacturing. The Tax Cut and Jobs Act (TCJA) change lowered the U.S. corporate rate to 21% making the U.S. competitive with the rest of the world, which today the OECD rate average is below 24%. Maintaining this rate will help the U.S. continue to be competitive.
- **R&D should be supported through the tax code**—Cook supports the "American Innovation and Jobs Act" as introduced by Senators Hassan, Young, Cortez Masto and Portman. As written, the legislation would restore immediate deductions for research and development (R&D) investments and expand the refundable R&D tax credit for startups by raising the existing credit cap. Based on an OECD analysis, the U.S. ranks twelfth in government funding and tax support for R&D trailing such countries as Russia, the UK, and Italy. The U.S. ranking likely decreases further if companies are required to capitalize and amortize R&D expenses. Manufacturing and jobs located where research develops new technology.
- **Cost recovery model should be examined.** An immediate cost recovery is arguably the best policy to spur economic growth and jobs according to the Tax Foundation's General Equilibrium Model. Cook supports an extension of 100% expensing for qualifying equipment purchases.

Finally, thank you for your efforts to repeal the medical devices excise tax. It has made a difference, particularly during 2020 when elective procedures came to a halt.

Medicare Reimbursement

Seniors are the biggest end-users of medical technology given both the acute and chronic needs of this more fragile demographic. As a result, Medicare is our most important payer and the private sector looks to Medicare's reimbursement models for guidance. Suggested reforms that would improve seniors' access to innovative technologies and encourage domestic manufacturing include:

- **Telehealth should be expanded and incentivized**—Since last March, Medicare providers can use telehealth services for certain medically reasonable purposes from offices and places of residence. This has enabled patients to consult with their physicians on needed health issues and in rural areas it has provided improved accessibility. Congress should consider further easing Medicare telehealth restrictions, expanding these services in the future and incentivizing physician offices to adopt needed technology, including programs that will assist seniors when accessing these virtual appointments.

- **The Coverage for Evidence Development (CED) process should be reformed**—While Medicare provides certain conditional coverage for medical devices or services while additional clinical or scientific information is collected, the system needs to become more transparent and predictable so safe, innovative technologies reach patients in a more timely manner.
- **Coordination is key for patients**—Finally, we need to improve the collaboration between CMS and FDA on reaching Medicare reimbursement decisions more timely using agile principles and updated digital transformational processes. When FDA approval or clears a device then CMS should accept the approval for coverage and determine reimbursement.

FDA/Regulatory

The Coronavirus pandemic has had a huge impact on the healthcare system and has required all stakeholders to transcend traditional boundaries and work together. The FDA has stepped up to lead through these challenges and should be commended for its work to get safe and effective COVID-related tests and treatments to patients, all while continuing its non-pandemic work.

In addressing the pandemic, FDA has reassessed its models and practices, related to its evaluation of a product's safety and effectiveness. For those treatments with demonstrated safety, the Agency has permitted accelerated clinical development using agile principles, regulatory flexibility, new trial designs using real world data, and integrated evidence generation in a test, learn and scale mode with the hopes of saving more lives.

As one example of changes in the process, FDA has established The Coronavirus Treatment Acceleration Program (CTAP) which uses every available method to move new treatments to patients as quickly as possible, while at the same time assuring those treatments are helpful and not harmful. Clinical trials are being expedited for COVID patients who need urgent care—more than 420 reviewed by FDA as safe to proceed. Product authorizations under Emergency Use Authorizations (EUAs) have permitted thousands of lives to be saved. New vaccines approved in record time are now available globally.

As we move into a new stage of the pandemic, it is important to keep in mind that there are thousands of patients who are in desperate need of new medical technologies and treatments designed to alleviate suffering. We need to be able to deliver these treatments to patients with a continued mindset of urgency. To that end, we suggest:

- **FDA use lessons learned from the pandemic in its approach to regulation of medical devices in general**—There are numerous patients with horrible diseases who suffer daily with serious and deadly unmet clinical need. These patients could benefit from efforts to use every available method to move new treatments to patients as quickly as possible.
- **FDA continue efforts to support development of devices specifically indicated for use in pediatric populations**—This important group of patients is being underserved by the current device regulatory framework, but their needs are just as urgent as other groups of patients.
- **Congress should fund the Pediatric Device Consortia**—Cook has long supported increased funding for the Pediatric Device Consortia (PDC) Grant Program at the Office of Orphan Products Development at the FDA. We recognize the significant achievements of the PDC and the ongoing needs of children, where medical devices often lag five to ten years behind those for adults due to factors that include differences in size, weight and metabolism rate. Increased funding for the program is necessary to achieve continued improvements.

Education and Workforce Development

While many factors impact the strength and competitiveness of U.S. manufacturing, none is more important than access to a highly prepared workforce. This requires a high-quality educational system starting in early childhood and extending through high school graduation to postsecondary education and beyond, including effective employer-driven workforce development strategies.

This means America's employers have a vested interest in the caliber and opportunity offered by the schools in their communities—including elementary schools. For example, it is well established that *students who can't read proficiently by grade three have dramatically* diminished potential for future success and are far more likely to drop out of high school. The ability to read well is a critical early building

block and one we must all support to secure collective success and individual opportunity for all children.

At Cook, we have worked hard to grow our business, positively impact the healthcare industry and the patients it serves and develop a skilled and ready workforce. We have learned that we will only succeed if we can reach all potential pools of talent. In Indiana, that meant finding ways to elevate the 29,000 people age 18–64 in our multicounty employment region without a high school diploma or equivalency.

As part of our "My Cook Pathway" employee development effort, we created a targeted program that hires eligible candidates without a high school diploma and offers them a full-time, 40-hour paycheck while they work toward their high school equivalency certificate. They spend half their time working at Cook and half their time in classes studying for the high school equivalency exam. Cook pays for tutors, materials and test taking and upon successful completion of their HSE testing, those employees move into full time, full benefit positions throughout the company.

We also have learned that the key to company and individual success in today's economy depends on employees who are able and willing to advance their knowledge and move to higher levels of interest and potential. For that reason, we added critical components to our "My Cook Pathway" program that support employees' continued advancement in our company, *including up-front tuition assistance* to help employees earn up to a master's degree at virtually no out-of-pocket cost. Cook works with the higher ed institutions to pay upfront (up to max of $5,250 annual support limit) or to defer payment until completion. The results of this initiative have been truly impressive: The number of Cook employees continuing their education has grown from 100 per year to more than 1,000 per year. The need for a trained educated workforce depends on the nations ability to get working age individuals to pursue certificates, HSE, complete the secondary education. How do we incentivize them? We have found connecting the job with the training or education is essential.

Our efforts at Cook along with those of many important education and workforce partners are elevating the importance of aligned and high-quality education and workforce development—for individuals, communities and our nation's economy. In our opinion, the COVID–19 pandemic has exacerbated the challenge and created an additional sense of urgency to focus on these issues.

We would propose that the critical elements of focus on the workforce development front include the following:

- **Increase the maximum allowable annual tuition assistance support.** The maximum allowable support for tuition assistance programs has not been increased from the $5,250 level since 1996 (Section 127—in today's dollars would be $8,700). Increasing that number would be a key first step in advancing important continued advancement for our individuals and industries.
- **Support direct industry engagement with educational partners.** Many examples exist of industry working collaboratively with educational partners to align curriculum, provide awareness, relevancy and work-based learning opportunities for students. These best practices should be supported and duplicated pervasively across the country. At the K–12 level in Indiana, career and technical education programs have been realigned to focus on high-demand industry sectors and embed industry and workforce certificates.
- **U.S. Manufacturing sector needs more industry-recognized credentials.** There should be a coordinated effort to advance more targeted manufacturing industry recognized credentials in addition to AA, BA, BS higher education degrees. A coordinated effort between the leading US manufacturing industry organizations and U.S. Department of Education among others should promote and incentivize best practice programs across the country. As an example, Indiana through its Next Level Jobs initiative offers Hoosiers high-demand industry certifications in five key sectors, including advanced manufacturing, tuition free.
- **Advance upskilling of the current generation of working age adults.** In Indiana alone there are 500,000 adults with no HS diploma/GED/HSE and more than 1.5M without education beyond high school. We must advance programs and support efforts to completion. As an example, the Indiana Commission for Higher Education in conjunction with Indiana's colleges and universities have developed a successful program called You Can. Go Back. that helps adults return and finish degrees they started. Additionally, Governor Holcomb's Next Level Jobs initiative has helped more than 21,000 Hoosiers earn certificates in high-demand industries at no cost.

- **Expand experiential work-based learning programs and requirements.** Experiential learning is critical for both individual success and overall American competitiveness—internships, apprenticeships, co-ops, etc., must become the norm rather than the exceptions at both the high school and postsecondary level. All programs within higher education should include some required element of career experience/engagement.
- **Expand digital learning and awareness.** American competitiveness is dependent on our ability to lead in the digitally enabled economy; we must focus on expanding experience and basic skill development for all students. Indiana, as an example, is working to embed digital literacy skills and competencies into its statewide college core (30 general education college-level credits that transfer seamlessly to any public state institution).
- **Align leadership of education and workforce development leadership.** As we are doing in Indiana, our K–12, higher education, workforce development and industry leadership must be totally aligned and focused on achieving collective goals to grow our economy and improve the lives of individuals and families.

Thank you for all that you are doing for our country. I am passionate about this industry, our country and the patients we serve. I stand ready to be helpful in any way that I can.

Respectfully,

Stephen L. Ferguson
Chairman of the Board

COMMUNICATIONS

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Statement of Dean A. Zerbe, National Managing Director

Introduction

Chairman Wyden, Ranking Member Crapo, and distinguished Members of the Committee, thank you very much for the opportunity to submit written comments in response to your important hearing to discuss the effect of the U.S. tax code on domestic manufacturing.

My name is Dean A. Zerbe and I am alliantgroup's National Managing Director based in Washington, DC. alliantgroup serves a broad spectrum of clients, from start-ups to the largest Fortune 1,000 companies in nearly every industry. Our professionals consist of CPAs (including former partners at "Big Four" accounting firms) and attorneys, in addition to individuals from a wide array of disciplines. alliantgroup works with businesses and their CPA firms to identify powerful, government-sponsored, cash-generating credits, incentives, and deductions. As background, I had the honor to serve as Senior Counsel and Tax Counsel for the Senate Finance Committee from 2001–2008.

I want to thank all of the Committee members for bringing forward this critically important discussion. The effect that the tax code, particularly the Research and Development Tax Credit (R&D Credit), has on American businesses cannot be understated. Even more so, the potential this tax incentive has for growing important businesses in the U.S. to compete globally is vast. The Finance Committee, under the current leadership and under the previous leadership of Chairman Grassley, has been a strong advocate for the R&D Credit and ensuring that the credit works for small and medium businesses (SMBs). I particularly commend the Finance Committee for championing changing the law to allow SMBs to take the R&D Credit against AMT, a seemingly small change that has made an enormous difference for thousands of innovative SMBs to utilize and benefit from the R&D Credit that translated into a great number of good jobs at good wages for many Americans. The Finance Committee now has the chance to build on its excellent work.

Testimony

It is vitally important to the U.S. economy and to your constituents that Congress helps American businesses, particularly those small and medium in size, remain and become financially viable. Enhancing certain aspects of our tax code can be the key to more employees getting hired, better pay and more equipment being bought, built or exported. Unfortunately, the U.S. tax code has created barriers that have limited—or will limit in the near future—businesses from enjoying the full benefit of the R&D Credit.

It was, however, encouraging to hear many during the panel acknowledge the harms wrought by the amortization provision of IRC Sec. 174. The provision, which was included in the Tax Cuts and Jobs Act ("TCJA") as a revenue raiser, will stifle innovation, be incredibly costly for job creators, reduce employment and cause massive administrative headaches for both taxpayers and the Internal Revenue Service ("IRS"). According to the Congressional Budget Office, the amortization of R&D expenses will result in a 17-percentage point increase in the effective tax rate on R&D investments at the end of this year. The requirement of amortizing all research and experimental expenditures over five years only serves to penalize taxpayers who

perform research by disallowing immediate deductions of their R&D expenditures that could put necessary capital into business owners' hands in the short term.

As an example, imagine an Automotive Parts Co. ("APC") in Ohio that has $40 million in annual revenue, 150 employees, and income of $4 million. Assume APC is an S-corporation with a single shareholder who is married and will be filing jointly. The total IRC Sec. 41 qualified research expenditures ("QREs") total $2.5 million, the IRC Sec. 41 credit (after reduction) totals $200,000, and the total IRC Sec. 174 expenditures total $4 million.

Under the current law, the total taxable income would be approximately $3.2 million ($4,000,000 − $800,000 IRC Sec. 199A). The total tax liability for APC would be approximately $915,000 ($1,125,000 − $200,000 R&D Credit). Under the new IRC Sec. 174 provision, the taxable income would be approximately $5.76 million ($4,000,000 + $4,000,000 IRC Sec. 174 Cost*.8 − $1,440,000 Sec. 199A). This would leave APC with an approximately $1.87 million tax liability ($2,070,000 − $200,000 R&D Credit).

The above example isn't a one-off, as we look at our clients we see a similar story repeated again and again across the country. Amortization of R&D will be crushing for businesses and jobs. Given my experience at alliantgroup working with thousands of businesses to claim the R&D Credit, I am certain that companies will refuse to take the credit if the current amortization rules, scheduled to take place in 2022, remain. alliantgroup has worked with companies in nearly every industry and through our work we have seen the tremendous impact that the R&D Credit has had on these businesses' ability to hire and retain technical talent and invest in themselves to innovate at a higher level. From automotive companies in Ohio to agricultural businesses in Idaho, I have been amazed at the innovations brought forward by companies who have been able to leverage this incentive in order to make themselves more competitive. The Committee should strongly consider any legislation that will remove the amortization provision and allow for the continuation of the long-held practice of immediate R&D expensing that will allow companies to utilize the R&D Credit incentive to its full potential.

The Committee and hearing witnesses were also correct in acknowledging the ways in which COVID–19 exposed the weaknesses in America's supply chain. The manufacturing sector is a crucial component of our country's economic engine, and there are tools that Congress can implement to help ensure that the industry is operating at maximum capacity.

alliantgroup has long supported a more generous tax credit to support domestic manufacturing. The Committee should encourage R&D that translates into U.S. manufacturing jobs by providing a greater R&D Credit to those companies that conduct a significant percentage of their manufacturing domestically. An enhanced R&D Credit for domestic manufacturers would particularly benefit SMBs and would potentially create tens of thousands of manufacturing jobs domestically while discouraging companies from moving offshore.

There are several proposed bills that I encourage the Finance Committee to give hard consideration. Those include, introduced in the previous Congress, the FORWARD Act introduced by Senators Chris Coons (D–DE), Pat Roberts (R–KS), Catherine Cortez Masto (D–NE), Todd Young (R–IN), Maggie Hassan (D–NH), and Steve Daines (R–MT), along with U.S. Representatives Suzan DelBene (D–WA) and Jackie Walorski (R–IN). The FORWARD Act provides an enhanced R&D Credit for U.S. companies to the extent they also manufacture in this country. The bill also proposes to expand the ability of start-ups to take advantage of the refundable R&D Credit.

The American Innovation and Jobs Act, introduced by Senators Todd Young (R–IN), Maggie Hassan (D–NH), Catherine Cortez Masto (D–NV), Rob Portman (R–OH), and Ben Sasse (R–NE), is also a great start to bolstering the R&D Credit. The proposed bill would restore immediate expensing for R&D expenditures for tax years beginning after December 31, 2021, and would also expand the refundable research credit for small businesses.

These bipartisan proposals offer Congress a way to significantly strengthen one of the most powerful tools for success available to American SMBs. China currently plans to significantly increase its available R&D Credit as part of its "14th Five-Year Plan for Economic and Social Development." China will continue to allow for a 75 percent deduction for corporate R&D expenses, while increasing the allowable deductions of manufacturing firms to 100 percent and offering other tax incentives to increase R&D investments. If the U.S. wants to remain a world leader in innova-

tion, we must keep pace with other countries in terms of available tax incentives that allow more monies to be allocated toward research and development efforts.

In closing, I wanted to also thank the Committee for acknowledging the STEM crisis that America faces. Hundreds of thousands of technical jobs go unfilled every year because American businesses are not able to find qualified talent. To date, alliantgroup has provided more than $640,000 in scholarships to young students who have committed themselves to a STEM career. The strengthening of the R&D Credit is only as powerful as the amount of technical workers that can leverage the incentive. I'm proud of alliantgroup's leadership in encouraging young people to embrace a STEM career.

I want to again thank the Committee for the opportunity to comment on the topics covered during the hearing, and for its historic leadership in making the R&D Credit an effective tool for small and medium sized American businesses across the country.

AMERICAN CHEMISTRY COUNCIL
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March 29, 2021

The Honorable Chairman Wyden
The Honorable Ranking Member Crapo
U.S. Senate
Committee on Finance
Dirksen Senate Office Bldg.
Washington, DC 20510–6200

Re: Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing—Hearing Tuesday March 16, 2021 10:00 am

Dear Chairman Wyden and Ranking Member Crapo:

The American Chemistry Council (ACC) represents the leading companies engaged in the business of chemistry. ACC member companies apply the science of chemistry to create and manufacture innovative products that make people's lives better, healthier, and safer. The business of chemistry is a $526 billion enterprise and a key element of the nation's economy. Over 25% of U.S. GDP is generated from industries that rely on chemistry, ranging from agriculture to oil and gas production, from semiconductors and electronics to textiles and vehicles, and from pharmaceuticals to residential and commercial energy efficiency products.

ACC appreciates the opportunity to submit comments in response to the Committee's hearing last week on the effect of the tax code on domestic manufacturing. Since 2010, the chemical industry has invested $97 billion in new or expanded facilities in the United States. These 229 projects are completed and operating. Another 40 projects cumulatively valued at $31 billion are under construction, while 80 projects valued at $81 billion are in the planning phase. This investment in facilities drives business and job growth in the United States.

We agree with the sentiment expressed by many members during the hearing and echo the messaging of the witnesses—the lowering of the corporate tax rate under the Tax Cuts and Jobs Act (TCJA) was a critical component driving growth in the manufacturing sector—and in the chemical industry in particular, was a driving factor in the renaissance we are now witnessing.

Like many witnesses, we are deeply concerned about the changes to the research and development deduction (R&D), interest deductibility under section 163(j), and full expensing that will take effect without congressional intervention. To that end, we support the American Innovation and Jobs Act recently introduced. On top of the concern over scheduled changes, we continue to see signs that increasing the corporate tax rate is under serious consideration. Reversing course by increasing the corporate tax rate to 28% renders the U.S. uncompetitive, particularly when also considering the application of additional state and local taxes. Such an increase is also inherently contrary to a "Made in America" policy objective.

All of these changes will negatively impact ACC members and harm U.S. manufacturing. Although we appreciate tough decisions may be necessary, we urge Congress to continue to be mindful about modifying the tax code to ensure the United States

remains competitive and U.S. manufacturing continues to play a critical role in America's recovery. We look forward to working with you.

Sincerely,

Robert B. Flagg
Senior Director, Federal Affairs

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Chairman Wyden, Ranking Member Crapo and members of the Senate Finance Committee, we appreciate the committee's attention to the impact of federal policies, in particular the tax code, on the manufacturing sector in the United States. The Association for Accessible Medicines (AAM) is the nation's leading trade association for the developers, manufacturers and distributors of FDA-approved generic and biosimilar prescription medicines. AAM and its members are committed to the secure and consistent supply of critical medicines to improve the health of America's patients and as a critical tool in the effort to lower prescription drug costs.

The COVID–19 pandemic reminds us of the incredible value offered by the generics and biosimilars industry, the benefits of a reliable and resilient global supply chain, and the industry's daily commitment to manufacturing safe, effective and high-quality medicines. AAM's members experienced substantially increased demand for certain medicines that far exceeded historical trends,[1] navigated export restrictions on active pharmaceutical ingredients (API) and finished dose (FD) generic medicines,[2] re-routed the delivery of medicine as air travel was significantly curtailed around the globe[3] and absorbed much of the increased costs charged for the transportation of medical products to ensure that America's patients were able to access critically needed medicines during the coronavirus pandemic.[4]

In summary, AAM's member companies stepped up to ensure continued patient access to medicines throughout the global pandemic.[5]

Generic Medicines Are the Bridge to Ongoing COVID–19 Containment

Generic and biosimilar manufacturers are committed partners in responding to and helping to treat patients with COVID–19. As the virus and its variants remain active in the U.S. and around the world, AAM and its member companies understand the important role we serve in the continuing public health response. Generic medicines approved by FDA and on the market are currently being used to care for and treat patients with COVID–19. While we await the wide distribution of safe, effective vaccines, generic injectables are being used to place a patient on a ventilator and generic steroids have been shown to reduce the risk of death in COVID–19 patients by one-third.[6] Proven, reliable generics are playing a critical role in the treatment of patients afflicted with the virus and throughout a patient's recovery period. Access to these treatments will continue to serve as a bridge until an FDA-approved vaccine is distributed broadly and every American is vaccinated from COVID–19.

Enhancing the U.S. Pharmaceutical Supply Chain Ahead of the Next Pandemic

AAM welcomes the opportunity to work with Congress to apply lessons learned during the COVID–19 pandemic to help ensure uninterrupted patient access to life-

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[1] Ellen Gabler and Michael Keller, "Prescriptions Surged as Trump Praised Drugs in Coronavirus Fight," *New York Times,* April 25, 2020, Updated May 19, 2020.

[2] Rajesh Roy, "India Again Allows Export of Antimalarial Drug Touted for Coronavirus," *Wall Street Journal,* April 7, 2020.

[3] Ian Duncan, "Drug Industry Warns That Cuts to Passenger Airline Service Have Put Medical Supplies at Risk," *Washington Post,* May 2, 2020.

[4] AAM Survey of Biosimilar and Generic Drug Manufacturers, "Pharmaceutical Shipping Costs Spike in Response to Global COVID–19 Pandemic," April 30, 2020.

[5] AAM, "Generics and Biosimilars Industry Supply Chain & Response to COVID–19," April 10, 2020.

[6] World Health Organization, "WHO welcomes preliminary results about dexamethasone use in treating critically ill COVID–19 patients," June 2020.

saving medicines now and in the future. We believe there are important steps that Congress can and should take and, to that end, we released our recommendations, A Blueprint for Enhancing the Security of the U.S. Pharmaceutical Supply Chain *(https://accessiblemeds.org/sites/default/files/2020-04/AAM-Blueprint-US-Pharma-Supply-Chain.pdf),* last year.

President Donald J. Trump's August 2020 executive order and President Joseph R. Biden's February 2021 executive order each included important steps toward strengthening the U.S. pharmaceutical supply chain. In the first, FDA was directed to establish a list of essential medicines, medical countermeasures and critical inputs that are considered priorities for domestic manufacturing. FDA published the list on October 30, 2020.[7] Under the second, the Department of Health and Human Services will undertake a 100-day assessment of the pharmaceutical and active pharmaceutical ingredient (API) supply chain. This review will help evaluate the scope and capacity of current U.S. pharmaceutical manufacturing, while identifying specific vulnerabilities that can be targeted for resolution both immediately with the COVID–19 pandemic and longer-term as the country prepares for future public health challenges.

AAM's recommendations, as outlined in the Blueprint, include both of those elements: identifying the list of medicines of highest priority for domestic manufacturing and completing a vulnerability assessment of the U.S. pharmaceutical supply chain. As additional actions are considered, it will be critical for Congress to adopt incentives to increase and expand the domestic manufacturing of essential medicines.

Creating the conditions that support and encourage these investments is necessary to ensuring the most critical medicines are manufactured in the U.S. To establish and maintain this environment, AAM's Blueprint recommends:

- Enacting new tax incentives to secure the U.S. supply chain and enhance domestic manufacturing;
- Providing long-term guaranteed contracts to supply the Strategic National Stockpile, the U.S. Department of Veterans Affairs and the Department of Defense;
- Reducing regulatory inefficiencies to streamline the approval for U.S.-based facilities to manufacture medicines; and
- Promoting a global, cooperative approach to diversifying the supply chain.

Tax Incentives to Support U.S.-Based Manufacturing of Essential Medicines

Given the important role the U.S. government plays in encouraging the conditions that support domestic manufacturing, the tax code can be a powerful tool to support the U.S.-based manufacturing of essential medicines. AAM supports two tax incentives to help facilitate greater domestic production:

1. A 50% tax credit to offset the costs of manufacturing medications on the list of "Essential Medicines" in the United States. The credit should be available for as long as the medicine in on the list of essential medicines and for five years thereafter.
2. An increase in the simplified R&D tax credit to 20%.

AAM and our member companies believe that these tax incentives, combined with the other proposals included in AAM's Blueprint, are necessary to incentivize further U.S. manufacturing of essential medicines in the United States. Given that the medicines included on the FDA List of Essential Medicines are mostly high-volume, low-margin products, the tax credits are critical to helping to offset the significant marginal cost advantages enjoyed by competitive foreign producers of the same products. Similarly, as AAM members invest in research and development to innovate new ways to produce these and other medicines, it will be critical that the R&D tax credit is expanded.

We would be glad to discuss these recommendations as the committee determines next steps on the supply chain in preparation for the next pandemic and future public health emergencies.

Conclusion

AAM and our members are committed to the secure and consistent supply of critical medicines for America's patients. The Blueprint's recommendations include action-

[7] FDA, "List of Essential Medicines, Medical Countermeasures and Critical Inputs," October 2020.

able, short-term steps to expedite more U.S.-based production of essential medicines, while putting in place a series of incentives to enhance the security of the U.S. pharmaceutical supply chain. Given that modern manufacturing facilities can take 5–7 years and cost up to $1 billion to build, a long-term, consistent commitment from the federal government is critical to harnessing existing U.S. manufacturing and building an expanded generic manufacturing base in the U.S.

We welcome the opportunity to work with Congress to take the lessons learned from the COVID–19 pandemic and apply those toward policies to help ensure patient access to life-saving medicines continues uninterrupted. Thank you for the opportunity to provide our views.

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Statement of Michael G. Bindner

Chairman Wyden and the Ranking Member Crapo, thank you for the opportunity to submit these comments for the record to the Committee on Finance. Our comments are mainly an update of those delivered to this Committee and the Ways and Means Committee over the past few years. You can find these in four attachments.

Attachment One comes from comments meant for the Senate Budget Committee on Large Corporations. They were never delivered because Senate Budget does not accept comments. Attachment Two addresses taxpayer fairness. Attachment Three is our updated tax reform plan, which now includes a summary listing individual actions. Attachment Four addresses the question of how tax reform impacts trade.

The public discourse on manufacturing uses large corporations as a stand-in for capitalism. Talking about capitalism carries Cold War connotations. For those who are confused, and many are, the Soviet Union was dissolved over twenty years ago. It had not been socialist since the time of the revolution. Because Marx believed that workers would figure everything out, little thought was given to how it would work. It truly has never been tried. The system of state capitalism in the Soviet era has been supplanted by oligarchy in Russia (six on one, half dozen of the other) and it is thriving in China.

Marx focused on capitalism. His main contribution was describing the exploitation of factory workers. In a modern enterprise, creative branding is as important as design and more important than production. Sales is always important, as are company services. The explosion of innovation centers in China are now competing with America on all fronts, not just manufacturing.

In October of last year, we delivered comments to the House Ways and Means Oversight Subcommittee on tax fairness. In it we discuss the causes of the decline in wages as compared to productivity. This started in 1965, which cut post-war high marginal tax rates from 91% to 70 %. This cut took away the disincentive for wage theft by the CEO class. This accelerated with the Reagan tax cuts.

The 1986 tax reform gave us the current system. It has changed round the edges since then, but has not been significantly reformed. The Clinton and Bush to capital gains and dividend rates set up the 2008 Great Recession, delivering too much money to the speculation sector (it is not investment as understood as a factor of GDP). President Obama reversed the Bush cuts and the economy recovered because of them.

The Ryan-Brady-Ryan cuts started us back the other way, but seem to have shown enough restraint to indicate there was more bipartisanship involved than anyone will admit. The main contribution of the Act was bringing corporate and business rates into relative parity. It did nothing for workers and did not bring money home, as promised. No studies have been done on executive compensation subsequent to the Act, although the growth rate one year after passage fell by one whole point of GDP before the Pandemic.

As in the 2000s, monetary policy was providing us with the perfect storm of tax cuts leveraging speculation, this time in Cryptocurrency and securities created so that providers of single family rental housing (which boomed in the foreclosure crisis) could cash out, with these funds packaged, again as AAA bonds, into Exchange Traded Funds. As we exit the pandemic, expect a financial crisis having nothing to

do with COVID. This crisis will be used as an excuse to further move operations off-shore.

The President has put forwarded reasonable rate corrections that may stop the coming crisis, or make it less severe. Still, the proposals are nibbling around the edges. More basic reform is needed.

Loading almost all taxation into payroll and income taxes continues the advantages of the CEO donor class. Splitting the elements of these taxes into a system of consumption and asset value-added tax, as we propose in Attachment Three, extracts revenue at multiple points. Most taxpayers will only be hit once by goods and services and employee payroll OASI taxes and will benefit from making American Recovery Act subsidies for families both permanent and more generous.

Higher tier subtraction VAT rates and residual income surtaxes will reduce wage theft. Offering high income taxpayers an opportunity to purchase tax prepayment bonds, and generally using salary surtaxes to pay down the debt is essential to making sure our economy is competitive when other nations duplicate our system of tax backed debt backing currency. These bonds also avoid interest payments—the item which causes most of the danger of an expanding debt.

Our proposed Asset Value-Added Tax simplifies income tax filing greatly and expands tax breaks for funding Employee Stock Ownership Programs (as well as Cooperatives—which are simply an ESOP with one voting share per employee-owner, with the balance of ownership in preferred shares.) Currently, only sole proprietors can take advantage of the ESOP exclusion from Capital Gains Taxes. Allowing shareholders the same privilege, especially heirs whose Asset VATs are marked to market when sold, will accelerate employee-ownership.

Attachment Four discusses how tax reform affects trade, both in terms of union rights and in joining everyone else in using the zero rating of value-added taxes for export, making American manufacturing more attractive. We also note how internationally based employee ownership of both subsidiaries and supply chains discourages wage and currency arbitrage, which is the best way to share the gains of reform with workers internationally while removing the incentive to send production outside our borders.

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—Large Corporations, February 25, 2021

Corporations vs. Capitalism

One of the great over-generalizations in economic discussion is to assume that all large firms are corporations or that one form of ownership is bad, while others are good, Capitalism can occur in large and small firms, in corporations, partnerships and sole proprietorships. Use of the term "corporations" is a way not to be seen as a Marxist and a Russian sympathizer. What we used to call big businesses are now referred to as corporations.

The rise of Putin shows that capitalist authoritarianism can take many forms, from state capitalism to oligarchs. In the United States, the old Soviet Union and modern (?) Russia, the form of organization of a firm has no bearing on its true nature. The only difference in recent times is that a modern Republican President brought sympathy with Russian authoritarianism, and its methods, to the White House.

The term capitalism is widely misused. Many conflate it with free markets. They are not the same thing. The key feature of capitalism is the exploitation of workers, consumers, suppliers and (in corporations) shareholders. The key feature of that exploitation is not size, it is the withholding of information. Entrepreneurs, whether they are in the C Suite, Trump Tower or the back office is the ability to monopolize information.

In the information age, firms like Wal-Mart and McDonald's track product preferences at the transaction level. They leverage their information to give the people what they want and their relationships to do this at the lowest possible price. Lower prices bring in customers. Like gerrymandering, where politicians pick their voters, information age firms pick their customers.

Firms can become monopolies for many reasons. For some, it is because they have control of an invention or production process. If they don't control something, they use their resources to buy off the competition. This ability dampens innovation, which sets the purpose of the patent and trademark power in the Constitution on

its head. The other way monopolies and oligopolies exist is in control over suppliers and of the workforce.

Perfect competition requires everyone knowing everything. Such competition is rare in real life. Imperfect competition exists in both selling (monopoly) and buying (monopsony). These forms range from total Monopoly and Monopsony to Oligopoly and Oligopsony to Monopolistic and Monopsonistic Competition. The less imperfect forms, where there is a degree of branding but a freer market is what defenders of capitalism like to assume. Big business gives us more monopoly and less competition.

Labor Markets

On the labor side, monopsonistic competition means lower prices and the ability of workers to move from one employer to another to demand better pay, working conditions and management, or to find another job where a fresh start can be made—that is, that some kind of permanent record does not follow the employee around. The perception that there is such a record is used to keep some employees in line.

In monopsonistic and oligopolistic labor markets, such a record does exist, especially on those who attempt to organize their fellow workers into the union movement. With the rise of Internet background services, including their use by larger employers, the concept of a permanent record is becoming more real than dystopian fiction.

There are two ways in which big business fights unionization. One is that they threaten to and go through with closing stores rather than letting workers organize at their store. Their actions on the supply side are equally harsh. Unionized suppliers are simply not used when possible, with foreign governments, from China to Latin America, doing the dirty work to dissuade union organizing, from blacklisting to actual violence.

The other method is franchising. By treating local operations as franchisees, no store is big enough to unionize. These firms earn the label "small business" in government statistics, even when they must abide by corporate rules, from personnel to suppliers. Franchisees often complain, in response to minimum wage hikes, that they will earn less than their employees if the wage hike is passed. More about that below. Franchisees are often sole proprietorships, not corporations. We cannot continue to demonize corporations when small businesses share the sins of capitalism.

Government, by not enforcing labor laws, has become part of the problem—both in not enforcing fair pay and in dropping the ball in helping workers organize.

Undocumented Workers

Opposition to reform provides a supply of undocumented labor forces immigrants into the shadows of the low wage world as well. Undocumented workers do not unionize. Right to work laws are, in fact, right to employ undocumented labor laws.

This is a one-two punch at undocumented workers. The demand for undocumented workers would dry up if they were allowed to unionize and did not face deportation for doing so. Union power would drive wages up, with or without a decent minimum wage. The presence of these workers keeps wages low for domestic workers, which causes friction between poorer American workers and immigrants.

Perverse Incentives

Studies have shown that paying workers more is an incentive toward self-betterment. The theory that low wages and benefits lead to the desire to pull one up by one's bootstraps is a canard. The reality is that keeping people in poverty is an excuse to create and maintain a ready supply of low wage workers.

This is also the rationale for keeping the child tax credit low. A higher credit, preferably one distributed with pay, would help workers to get out of poverty, lower the abortion rate and leave the low wage market.

Solutions

The ultimate cure for low-wage work and the need for government programs to make it possible is employee ownership. The only way for workers to know their productive output is to own the company. Ideally, this does more to provide competition for wages, especially management wages, than any form of capitalism—be it corporate, sole proprietor or governmental. Please see my standard attachment on employee ownership for more details on this option.

Attachment Two—Taxpayer Fairness, October 13, 2020

To start, we must distinguish between fairness and justice. Fairness is having your say. Justice is getting or paying what is due to or for you.

Lower-income taxpayers depend on the fairness of the system, rather than individual fairness. It is costly to make one's case to the IRS when disputes arise. To an extent, they must pay and obey. As long as they can provide information when it is lacking or work out payment arrangements when they do not have funds available the system is fair. Generally, they do, although currently the unopened mail resulting from the pandemic stretches that fairness, as Chairman Neal noted in August (2020).

Higher-income taxpayers have more room to argue, as well as more to argue about. Sometimes their attempts to hide income are too clever by half. If they succeed in beating the system, the result for all of us is both less fair and unjust. A wealth tax, because the elements are both debatable and gameable, compound the problems inherent in current capital gains taxation.

The tax rate on capital gains is seen as unfair because it is lower than the rate for labor. This is technically true, however it is only the richest taxpayers who face a marginal rate problem. For most households, the marginal rate for wages is less than that for capital gains. Higher-income workers are, as the saying goes, crying all the way to the bank.

The injustice in the system is baked in by the maldistribution of income in the economy at large. Prior to the Kennedy-Johnson tax cuts, high marginal rates prevented the extraction of economic rent from workers. Any labor cost savings went to the government, so gains in the economy were shared by all. In 1981, the problem got worse and in 1986, higher marginal rates were traded for reduced tax benefits, with corporations taking the hit. The class warfare which began in 1965 was over twenty years later. Labor lost, both organized and otherwise.

Recently, tax rates for corporations and pass-through income were reduced, generally, to capital gains and capital income levels. This is only fair and may or may not be just. The field of battle has narrowed between the parties. The current marginal and capital rates are seeking a center point, as most as if the recent tax law was based on negotiations, even as arguments flared publicly. Of course, that would never happen in Washington. Never, ever.

Compromise on rates makes compromise on form possible. If the Pease and Affordable Care Act provisions are repealed, a rate of 26% is a good stopping point for pass-through, corporate, capital gains and capital income. A single rate also makes conversion from self-reporting to automatic collection through an asset value added tax levied at point of sale or distribution possible. This would be both just and fair, although absolute fairness is absolute unfairness, because there would be little room to argue about what is due and when.

Ending the machinery of self-reporting also puts an end to the Quixotic campaign to enact a wealth tax. Out of fairness, if the revenue committees do give its proponents and opportunity to testify, it must hear from me as well. It would only be fair.

Attachment Three—Tax Reform, 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.

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 industry. 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.

Attachment Four—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.

HEALTH INDUSTRY DISTRIBUTORS ASSOCIATION
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Statement of Matthew J. Rowan, President and CEO

Thank you, Chairman Wyden and Ranking Member Crapo, for convening the recent Senate Finance Committee hearing, "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing." The Health Industry Distributors Association (HIDA) is pleased to submit this statement for the record as this hearing can play an important role in identifying lessons learned from the COVID–19 pandemic, and developing thoughtful strategies for future public health preparedness—including sustainable domestic production of pandemic supplies.

Based on our distributors' experience and expertise, HIDA is providing a link to our white paper: "Building A More Robust Supply Chain: A Public-Private Framework to Create A Pandemic Response Infrastructure," that outlines steps to strengthen our medical products supply chain. We believe the public and private sectors must work together to:

1. Make the supply chain more robust, utilizing the nation's 500 commercial medical distribution centers to forward deploy critical products;
2. Diversify sourcing;
3. Expand and support surge manufacturing capacity; and
4. Prevent development of a fraudulent opportunistic marketplace.

The framework of this strategy was the basis for bipartisan legislation S. 3827: The Medical Supplies for Pandemics Act introduced in the Senate last year.

HIDA supports expansion of domestic and nearshored manufacturing capacity for critical products to augment global sources. Leveraging the strengths of each manufacturing location (U.S., regional and global) will result in the highest level of supply chain resilience at the lowest overall cost. These policies should apply to all products important for pandemic response including: personal protective equipment (PPE), testing supplies, needles/syringes and infection prevention products, among others.

Domestic production is often more expensive than global sources and will require a strong public/private partnership for long term sustainability. HIDA recommends:

1. Prioritize companies with experience in healthcare—Manufacturing medical grade products requires specialized expertise and capability. Companies selected to receive government support to on-shore production must have an extensive track record of meeting FDA-quality standards for medical grade products.
2. Leverage the established public/private partnerships—The private sector is already actively ramping up investments in U.S. manufacturing. Government incentives and commercial market investments should complement and reinforce each other in a comprehensive plan that includes:
    a. Assessment of on-shoring viability—A detailed plan is needed to target critical supply categories, assess viability of U.S. manufacturing such as raw materials, cost and regulatory issues. A baseline of global production

needs to be established to enable setting and monitoring progress against clear production targets for U.S. manufacturing.

b. Meaningful incentives—Any plan should include infrastructure investments, tax incentives, loan programs and grants. These incentives provide guidance to industry to expand and establish industrial capability, foster research and development and enhance private sector investments.

3. Support the existing supply chain—Payment and trade policies can be used to provide a consistent demand signal to the commercial market for long term viability. Policies should include:

a. Direct procurement—The government should structure their own purchases of medical products through long term, multi-year contracts of committed purchases with manufacturers and distributors.

b. Trade agreements—Leverage existing regional trade agreements to facilitate U.S. and regional production opportunities.

c. Reimbursement—Assess Medicare and Medicaid payment policies across the continuum of care to identify opportunities to incentivize domestic purchasing.

d. Avoid unintended consequences—Federal government purchases can be so large they move markets and disrupt the supply chain. Whenever possible, these purchases should be done in a planned, measured way with regard to quantities and timing.

The Health Industry Distributor's Association (HIDA) is the national trade association that represents medical product distribution companies with 500 medical distribution centers across the care continuum nationwide. HIDA members deliver medical products and supplies, manage logistics, and offer advanced services to virtually every provider across the U.S. Medical-surgical wholesalers distribute items used in everyday medical services and procedures, ranging from gauze and gloves to diagnostic laboratory tests and capital equipment. Their customers include over 230,000 physician offices, 6,000 hospitals, and 41,500 nursing homes and assisted living facilities throughout the country.

Throughout this pandemic, America's healthcare distributors have collaborated with the federal government as trusted partners. Every day, our distributors are using their existing infrastructure to reliably deliver essential medical supplies the last mile to providers. In 2020, HIDA members distributed more than 51 billion units of PPE including 1200% more N95 respirators and 150% more face masks.

HIDA appreciates the important work being done in the Senate Finance Committee, and we look forward to working with you on long-term policy solutions. If you have any questions or need additional information, please reach out to HIDA's Vice President of Government Affairs, Linda Rouse O'Neill at Rouse@HIDA.org. Thank you for your leadership on these issues.

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Ability of the U.S. Tax Code to Incentivize Domestic Manufacturing of Energy Efficiency Technology

Chairman Wyden, Ranking Member Crapo, and Members of the Committee, Huntsman Corporation is pleased to provide this submission for the record for the Committee's hearing "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing."

Huntsman is a leading U.S. producer of spray polyurethane foam insulation (SPF) and the upstream chemicals that are critical to SPF production. We have invested over $1 billion to expand production of SPF and its critical inputs. We have over 1,000 employees involved in R&D and production across seven facilities in Arlington, Houston and The Woodlands, Texas; Derry, New Hampshire; Auburn Hills, Michigan; Ringwood, Illinois; and Geismar, Louisiana.

SPF is the most efficient and cutting-edge insulation technology available today and it is made in America by American workers. Congress can incentivize the continued development and production of this technology and enable significant im-

provements in energy efficiency and reductions in greenhouse gas (GHG) emissions by extending and expanding the Section 25C tax credit.

The application of SPF in a commercial or residential building blocks the loss of conditioned (heated or cooled) air out of the building. The more significant the loss of conditioned air from the building the more frequently the air in the building must be re-heated or re-cooled. The Department of Energy estimates that up to 40% of a building's heating and cooling energy is lost due to air leaks.[1] The application of SPF drastically reduces that air loss resulting in a dramatic reduction in the amount of energy used to keep the building heated or cooled. Combined, commercial and residential buildings account for nearly 40 percent of total energy consumption in the US. Thus, widespread adoption of SPF can drastically reduce energy usage in buildings. These energy savings translate directly into reductions in GHG emissions. According to analysis by the American Chemistry Council the energy savings that could be achieved from the widespread adoption of SPF technology could reduce GHG emissions from residential buildings by as much as 17 percent and total US GHG emissions by as much as 3.5 percent.[2] This is the equivalent of taking 39 million cars off the road.

Thus, the expansion and extension of the Section 25C tax credit can simultaneously further the Committee's goal of incentivizing domestic manufacturing and support significant gains in energy efficiency which will translate into significant reductions in GHG emissions.

As currently designed, the Section 25C credit does not incentivize the use of the best available insulation technology. Thus, the US government is devoting tax credits to insulation that does not achieve the energy efficiency and GHG emissions reductions described above. Huntsman recommends that the Committee and Congress extend and expand on the current 25C credit prior its expiration in December. More specifically, Huntsman recommends that the 25C credit be increased and the full amount of credit be made available to homeowners who install SPF in their home. A proposed amendment to the 25C credit is attached as Attachment 1 to this submission.

Adoption of this proposed amendment would encourage and support US manufacturing and employment and help achieve important climate and energy goals. Huntsman Corporation, 10003 Woodloch Forest Dr., The Woodlands, TX, 77380.

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[1] *https://www.energystar.gov/ia/home_improvement/home_sealing/AirSealingFS_2005.pdf.*

[2] *https://www.sprayfoam.org/files/SPFA%20LCA%20-%20Residential%20Energy%20Modeling%20Analysis%20[Jan%202021].pdf.*

Attachment 1

(a)ALLOWANCE OF CREDIT In the case of an individual, there shall be allowed as a credit against the tax imposed by this chapter for the taxable year an amount equal to the sum of—

(1) ~~10 percent~~30 percent of the amount paid or incurred by the taxpayer for qualified energy efficiency improvements installed during such taxable year, and

(b)LIMITATIONS

(1)LIFETIME LIMITATION
The credit allowed under this section with respect to any taxpayer for any taxable year shall not exceed the excess (if any) of $~~500~~2,400 over the aggregate credits allowed under this section with respect to such taxpayer for all prior taxable years ending after ~~December 31, 2005~~December 31, 2025.

(A) The lifetime limitation for taxpayers that have previously accepted the tax credit is reset.

(B) The credit can be applied to labor and materials qualified under subsection (c)

(3)LIMITATION ON RESIDENTIAL ENERGY PROPERTY EXPENDITURES The amount of the credit allowed under this section by reason of subsection (a)(2) shall not exceed—

(D) $1,200 for any qualified energy efficiency upgrades that include only the building envelope components described in (c)(3)(A)

(E) $2,400 for any qualified energy efficiency upgrades that include building envelope components described in (c)(3)(A) and (c)(3)(B)

(c)QUALIFIED ENERGY EFFICIENCY IMPROVEMENTS For purposes of this section—

(2)Energy efficient building envelope component The term "energy efficient building envelope component" means a building envelope component which meets—

(C) the prescriptive criteria for such component established by the 2018 ~~2009~~ International Energy Conservation Code~~, as such Code (including supplements) is in effect on the date of the enactment of the American Recovery and Reinvestment Tax Act of 2009, in the case of any other component~~.

(3)BUILDING ENVELOPE COMPONENT
The term "building envelope component" means

(A) any insulation material or system which is specifically and primarily designed to reduce the heat loss or gain of a dwelling unit when installed in or on such dwelling unit,

(B) any air barrier material, system, or assembly which is specifically and primarily designed to minimize the passage of air through the building thermal envelope and its assemblies when installed in or on such dwelling unit

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The Honorable Ron Wyden
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219 Dirksen Senate Office Building
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The Honorable Mike Crapo
Ranking Member
U.S. Senate
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Dear Chairman Wyden, Ranking Member Crapo, and Members of the Committee:

On behalf of National Taxpayers Union (NTU), the nation's oldest taxpayer advocacy organization, I wish to submit this letter for the record ahead of your March

16 hearing, "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing." Thank you for your attention to these critical issues and your consideration of NTU's views.

For decades, NTU has been invested in a tax code that is simple, fair, and oriented towards economic growth, a federal budget that is responsible, restrained and—when possible—balanced, and a U.S. economy that affords the most opportunities and rewards to the largest possible group of Americans.

To that end, we would like to share our thoughts with the Committee on how lawmakers can best position U.S. manufacturers for success on a domestic and global scale in the post-COVID economic recovery, with some recommendations for policies to promote and for policies to avoid in the months and years ahead.

First, Do No Harm

Like many stakeholders, we are deeply concerned by the following proposals from lawmakers and Biden administration officials in the tax space that would actively harm domestic manufacturing efforts in the post-COVID economy.

Increasing the corporate tax rate to 28 percent: On the campaign trail, President Biden pledged to raise the corporate rate by a third, from its current 21-percent rate to 28 percent.[1] It is hard to imagine a policy that could make the U.S. less globally competitive in the short and long term than a corporate rate hike, and policymakers should abandon any efforts to raise the corporate rate—especially during a fragile economic recovery.

In 2020, the 21-percent U.S. corporate tax rate ranked tied for 16th-lowest among 36 Organization for Economic Co-Operation and Development (OECD) nations.[2] While our corporate rate is not in an ideal competitive position when compared with our economic peers, it is in a much better position than when the corporate rate was 35 percent in 2017—at the time the second-highest among OECD nations.[3] A 28-percent corporate rate would give the U.S. the third-highest rate in the OECD (along with New Zealand), but an average state corporate tax rate of 6.03 percent would actually bump the U.S. above France for the highest combined corporate tax rate (national and sub-national) among highly developed economies.

As global and domestic businesses look to recover and invest in growth in a post-COVID world, the U.S. would put itself in a severely uncompetitive position by raising its corporate rate by more than 33 percent. It is also worth noting that a significant portion of the tax hike would be borne by workers—between 50 and 100 percent, according to experts at the Tax Foundation.[4] Even alternative estimates from the Tax Policy Center, which assume that shareholders in a company bear a majority of corporate taxes (around 80 percent), find that workers bear 20 percent of the corporate tax.[5] Regardless of the wide range of estimates here, it is clear that a corporate tax hike is, in part, a tax hike on workers as well.

"Buy America" and Protectionism: Though "Buy America" initiatives are often politically popular, they are neither an efficient use of taxpayer dollars nor the most effective way for American businesses large and small to purchase goods. With "Buy America" directives popular in the COVID–19 context, NTU led more than 250 economists last year in writing to former President Trump, Speaker Pelosi, and Leader McConnell:

> Diversifying supply sources and increasing inventories will be costly, but a broad Buy America regime will be more costly. The variety, supply, and price of goods available to Americans will suffer under a broad Buy America regime. Taxpayers and patients will pay more for drugs and medical supplies. Smart policies such as federal government stockpiling look more promising.

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[1] Biden-Harris. (September 2020). "The Biden-Harris Plan to Fight for Workers by Delivering on Buy America and Make It in America." Retrieved from: *https://joebiden.com/the-biden-harris-plan-to-fight-for-workers-by-delivering-on-buy-america-and-make-it-in-america/.* (Accessed March 11, 2021.)

[2] OECD.Stat. "Table II.1. Statutory corporate income tax rate." Retrieved from: *https://stats.oecd.org/Index.aspx?DataSetCode=TABLE_II1.* (Accessed March 11, 2021.)

[3] *Ibid.*

[4] Entin, Stephen J. "Labor Bears Much of the Cost of the Corporate Tax." Tax Foundation, October 24, 2017. Retrieved from: *https://taxfoundation.org/labor-bears-corporate-tax/#:~:text=Indeed%2C%20Mnuchin%20has%20said%20that,tax%20is%20borne%20by%20workers.* (Accessed March 11, 2021.)

[5] Tax Policy Center. "Who bears the burden of the corporate income tax?" Retrieved from: *https://www.taxpolicycenter.org/briefing-book/who-bears-burden-corporate-income-tax.* (Accessed March 11, 2021.)

> A Buy America directive can also hamstring the ability of U.S. pharmaceutical and medical equipment manufacturers to meet our future needs if firms are denied access to essential foreign supplies.
>
> Moreover, we can expect our trading partners to adopt retaliatory "Don't Buy American" barriers targeting U.S. exports as this type of retaliation is already occurring between other countries.[6]

Similarly, NTU has encouraged lawmakers and the Biden administration (and, previously, the Trump administration) to exercise significant caution when utilizing the Defense Production Act (DPA):

> The DPA, which allows presidents to mandate and prioritize manufacturing of certain goods in service of the "national defense," is a 70-year-old law that NTU believes should be used sparingly. NTU and its sister organization NTU Foundation have regularly urged the federal government to exhibit significant caution when invoking the DPA, because "in areas where [the Trump administration] did use the DPA to intervene in the economy [during COVID], the results were predictably disastrous." We have also seen proposals to use the DPA to protect certain parochial interests and favored industries (unrelated to COVID) and we have seen DPA money wasted at the Pentagon in the past year.[7]

Misplaced and Costly Surtaxes: NTU is also significantly concerned with a proposal that President Biden released on the campaign trail last year to attach a "10% Offshoring Penalty surtax . . . on profits of any production by a United States company overseas for sales back to the United States," effectively bringing the corporate rate for those business profits to 30.8 percent.[8] Though some details of the proposal are unclear, we worry that President Biden's surtax idea denies the economic reality of global supply chains, and could harm some of the American companies and workers that the President is trying to support.

Consider some of the several U.S. companies that created and are producing COVID–19 vaccines, including Pfizer, Moderna, Johnson & Johnson, and Novavax. All four companies have global manufacturing partners at various stages of vaccine development, production, and distribution, in several countries across Europe, Asia, and Africa.[9] While it is unclear based if any of these companies would be subject to President Biden's offshoring surtax, on their inputs or finished products, we raise the example of these manufacturers to demonstrate that supply chains are and will continue to be global—for many U.S. industries that employ Americans in high-quality, well-paying jobs—and punishing these companies for simply having global supply chains and a global presence will also punish the American workers employed by these businesses.

In summary, sweeping, top-down industrial policy will only raise costs for taxpayers in the long run, while potentially propping up industries, sectors, or businesses that might be less than efficient for a robust 21st-century American economy. "Buy America" and the DPA both risk falling into this trap, by failing to acknowledge the reality that not every good and input used in America will be made in America. Tax hikes like a corporate rate increase and an "Offshoring Penalty surtax" will also harm economic growth and recovery efforts, especially since workers and consumers bear significant portions of the taxes levied on businesses. Instead, policymakers should pursue simple incentives for multinational and U.S.-based businesses to invest in America, with a particular focus on accelerating cost recovery for companies that make the investments that will drive economic, job, and wage growth.

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[6] National Taxpayers Union. (May 13, 2020). "More than 250 Leading Economists Warn Trump Administration: 'Buy America' Provision Would Harm American Response to Coronavirus." Retrieved from: *https://www.ntu.org/publications/detail/more-than-250-leading-economists-warn-trump-administration-buy-america-provision-would-harm-american-response-to-coronavirus.* (Accessed March 11, 2021.)

[7] Lautz, Andrew. "A Taxpayer- and Market-Oriented Path Forward for Federal Prescription Drug Policy." National Taxpayers Union, February 25, 2021. Retrieved from: *https://www.ntu.org/publications/detail/a-taxpayer-and-market-oriented-path-forward-for-federal-prescription-drug-policy.* (Accessed March 12, 2021.)

[8] Biden-Harris. (September 2020). "The Biden-Harris Plan to Fight for Workers by Delivering on Buy America and Make It in America." Retrieved from: *https://joebiden.com/the-biden-harris-plan-to-fight-for-workers-by-delivering-on-buy-america-and-make-it-in-america/.* (Accessed March 12, 2021.)

[9] Kansteiner, Fraiser, and Sagonowsky, Eric. "What does it take to supply COVID–19 vaccines across the globe? Here's how the leading players are working it." FiercePharma, March 3, 2021. Retrieved from: *https://www.fiercepharma.com/special-reports/vaccine-supply-chains-holding-line-against-covid-19.* (Accessed March 12, 2021.)

For Businesses, Focus on Simplicity, Cost Recovery, and Incentives for Investment

To better help U.S. manufacturers recover in the post-COVID economy, lawmakers should focus on simple changes to the tax code that reward investments in economic, job, and wage growth. To that end, we recommend four ideas that may seem obscure but are nonetheless critical to helping businesses recover the costs of their investments in growth.

Undo five-year R&D amortization, which begins Jan. 1, 2022: According to the National Center for Science and Engineering Statistics (NCSES), businesses performed a "total [of] $441 billion [in] R&D" in the U.S. in 2018, 86 percent of which ($377.8 billion) was "funded primarily by the performing companies."[10] More than half the $441 billion total ($274 billion, or 62 percent) was in manufacturing industries.

Immediate and full cost recovery for businesses' R&D expenditures is an important principle of the U.S. tax code, since R&D investments will spur innovation and growth in the technologies and sectors that will dominate the global economy in the coming decades. Unfortunately, a looming change to the tax code could threaten that progress.

As NTU wrote in a recent issue brief:

> The Tax Cuts and Jobs Act (TCJA), which passed in 2017, made several positive and pro-growth changes to the U.S. tax code. One provision of the law that Congress should repeal, though, is the shift in how the code treats businesses' research and development (R&D) expenditures. Under current law, U.S. companies can immediately write their R&D costs off their tax bill, which provides a major incentive for businesses to invest in innovations that grow the U.S. economy and create jobs. Under TCJA, though, businesses must amortize their R&D costs beginning in 2022—spreading the tax benefit out over five years instead of one. This will crib U.S. efforts, including those in the R&D-intensive biopharmaceutical industry, to dig out of the COVID economic hole and innovate in the years to come. Fortunately, the American Innovation and Competitiveness Act (AICA) from Reps. John Larson (D–CT) and Ron Estes (R–KS) is a popular, bipartisan bill in Congress that would repeal R&D amortization. Congress should pass it in 2021.[11]

Extend full and immediate expensing for short-lived assets: A separate provision of TCJA is critical to businesses' ability to quickly recover the costs of their investments, and Congress should extend this full and immediate expensing provision of the law before it begins to phase down in 2023. Legislation in the Senate and the House last year, the ALIGN Act from Sen. Pat Toomey (R–PA) and Rep. Jodey Arrington (R–TX), would accomplish just that.

As NTU wrote of the legislation at the time:

> While lawmakers recognized the benefits of full expensing by including a 100-percent first-year expensing allowance for qualified assets like machinery and software in Section 168(k) of the TCJA, up from a 50-percent expensing allowance under prior law, they phased out the 100-percent allowance starting in 2023.2 This phase-out could have the effect of decreasing business investment, blunting the positive effects the TCJA has had on the American economy. The ALIGN Act would solve this problem by making the 100-percent allowance permanent.[12]

Both the ALIGN Act and the aforementioned AICA would fit well with President Biden's focus on revitalizing domestic manufacturing and would help companies more confidently invest in American workers and American ingenuity as the country emerges from the COVID–19 crisis.

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[10] Shackelford, Brandon. "Health-Related Applications Account for One-Quarter of 2018 U.S. Business R&D; Most Pharmaceutical R&D Focused on Biotechnology." NCSES, January 6, 2021. Retrieved from: *https://ncses.nsf.gov/pubs/nsf21316.* (Accessed March 12, 2021.)

[11] Lautz, Andrew. "A Taxpayer- and Market-Oriented Path Forward for Federal Prescription Drug Policy." National Taxpayers Union, February 25, 2021. Retrieved from: *https://www.ntu.org/publications/detail/a-taxpayer-and-market-oriented-path-forward-for-federal-prescription-drug-policy.* (Accessed March 12, 2021.)

[12] Arnold, Brandon. "Toomey Bill to Make Full Expensing Permanent Would Fuel Economic Growth." National Taxpayers Union, February 13, 2020. Retrieved from: *https://www.ntu.org/publications/detail/toomey-bill-to-make-full-expensing-permanent-would-fuel-economic-growth.* (Accessed March 15, 2021.)

Explore full and immediate expensing for structures: The final piece of our focus on cost recovery is a more expensive proposition for lawmakers, in terms of foregone revenue, but would nonetheless significantly help businesses open and expand the kinds of facilities that will employ Americans in domestic manufacturing for decades to come.

Experts at the Tax Foundation have pointed out that "when a business purchases a structure, it has to deduct the cost over a period of up to 27.5 years (for residential buildings) or 39 years (for nonresidential buildings)."[13] At NTU, we have noted that:

> This greatly reduces the value of investments in structures, due to inflation and the time value of money. [We support] allowing businesses to fully and immediately deduct the value of their investments in structures in the year they make the investment.
>
> . . . Some critics of full and immediate expensing point out (correctly) that expanding this treatment to structures would result in significant lost revenue for the federal government. Tax Foundation has a thoughtful alternative addressing those concerns, called neutral cost recovery [NCR].[14]

Under NCR, businesses would still deduct the cost of investments in structures over 27.5 or 39 years, but the value of the deduction would increase over time to account for inflation and the time value of money. Therefore, total deductions over the life of the asset would equal the first-year value of the investment.

NTU continues to prefer full and immediate expensing for structures, and we believe it could help manufacturers more quickly and confidently build and expand new facilities for American workers. NCR for structures, though, could be a point of potential compromise for members of Congress who are concerned about expensing's deficit impact but still want to help reduce the cost of domestic investments for businesses.

Extend the EBITDA definition in Section 163(j): A final measure Congress should consider—somewhat unrelated to cost recovery but important for the American manufacturing sector regardless—is the pending expiration of a certain method businesses use to calculate their income for the purposes of deducting interest payments from their tax bill. This provision, Section 163(j) of the tax code, allows businesses to deduct interest up to a certain limit, which includes 30 percent of adjusted taxable income (ATI). Under current law, ATI is calculated by taking a business's earnings before interest, taxes, depreciation, and amortization (EBITDA). Starting in 2022, ATI is limited to 30 percent of earnings before interest and taxes (EBIT), which reduces the amount of interest deductions some businesses in some sectors can take.

According to the Joint Committee on Taxation (JCT), the U.S. manufacturing industry was the top industry (among C corporations) to take advantage of the interest deduction in 2016, with interest deductions valued at more than $180 billion.[15] A separate JCT estimate finds the changes will more than double the tax revenue brought in by the federal government from these businesses, from $4.8 billion in 2021 to $11.4 billion in 2022, escalating to $15.9 billion in 2023 and $18.1 billion in 2024.[16] That tax revenue could be put to better use by these businesses investing in their workers, new equipment, R&D, and more, and Congress should consider extending the EBITDA definition in Section 163(j) beyond 2021.

For Workers, Focus on a Safe Return to High-Quality Jobs

While it is critically important that policymakers make it easier and less expensive for businesses to quickly invest in the American economy in the months and years ahead, support for U.S. businesses—and for the domestic manufacturing sector spe-

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[13] York, Erica, and Li, Huaqun. "Reviewing the Economic and Revenue Implications of Cost Recovery Options." Tax Foundation, April 28, 2020. Retrieved from: *https://taxfoundation.org/full-immediate-expensing/#:~:text=An%20alternative%20to%20full%20expensing,the%20tax%20treatment%20of%20structures.* (Accessed March 15, 2021.)

[14] Lautz, Andrew. "How Improving the Tax Code's Treatment of Structures Could Help Aid America's Economic Recovery." National Taxpayers Union, June 30, 2020. Retrieved from: *https://www.ntu.org/publications/detail/how-improving-the-tax-codes-treatment-of-structures-could-help-aid-americas-economic-recovery.* (Accessed March 15, 2021.)

[15] Joint Committee on Taxation. (March 2019). "Overview of Limitation on Deduction of Business Interest: Section 163(j)." Retrieved from: *https://www.jct.gov/publications/2019/overview-of-limitation-on-deduction-of-business-in/.* (Accessed March 15, 2021.)

[16] Joint Committee on Taxation. (November 5, 2020). "Estimates of Federal Tax Expenditures for Fiscal Years 2020–2024." Retrieved from: *https://www.jct.gov/publications/2020/jcx-23-20/.* (Accessed March 15, 2021.)

cifically—should not be an end itself, but a means to an end or to several ends. One of those ends should be making it easier for workers to obtain high-paying, quality jobs in America. Americans are better off when the tax code rewards work, and when the tax code makes it easier for working adults to balance a number of priorities in their lives such as health care needs, child care expenses, and saving for retirement. To that end, NTU believes Congress should consider several of the succeeding policy proposals, and should avoid expensive, unlimited expansions of struggling taxpayer-funded legacy programs.

Consider a limited, temporary back-to-work bonus for workers coming off UI: Ten million Americans are still out of work from the COVID–19 recession.[17] Last year, when the unemployment situation was even worse, Sen. Rob Portman (R–OH) and Ways and Means Committee Ranking Member Kevin Brady (R–TX) suggested a "back-to-work" bonus that effectively rewards people for finding a job and coming off unemployment insurance (UI).

Congress should still consider such a proposal, given 10 million people are out of work, but the design and implementation of the proposal should be carefully considered. First, any proposal that rushes people back into work too quickly could run counter to public health advice and the pressing need to get the virus under control. Scientists and health experts should still be the first parties that policymakers are turning to for advice when it comes to safely reopening the economy. Second, a "back-to-work" bonus should be targeted at low- and middle-income workers who have been on the labor market sidelines for a significant amount of time. In other words, individuals who were making (and one day again will make) six figures per year do not need access to an additional federal benefit to return to work, nor does someone who experienced or experiences a temporary, 2- or 4-week long blip in their employment situation.

With proper targeting and continued vaccine distribution and the abatement of the virus, a back-to-work bonus could give low- and middle-income workers the additional resources needed to meet family needs during a transition to work, while also providing employers with a larger pool of applicants for in-demand positions.

Continue supporting working families through the Child Tax Credit, but offset the costs: The American Rescue Plan (ARP) expands the Child Tax Credit in a significant way, increasing the value of the credit by $1,000 per child per year (and $1,600 per child per year for children under six) while also making the credit a monthly benefit for the first time (rather than an annual lump sum).

According to reporting, the benefit may cut child poverty in half and could support millions of working families, but it is also expensive. JCT estimates that just one year of the expansion will cost taxpayers nearly $110 billion in foregone revenues.[18] Expanding the CTC permanently, as some policymakers now want to do,[19] is a trillion-dollar proposition each decade, and lawmakers serious about making the more generous CTC permanent should offset the costs to taxpayers.

Senator Mitt Romney (R–UT) outlined a thoughtful CTC expansion plan earlier this year that would have fully offset the cost of expansion with changes to some social programs, duplicative tax credits, and more regressive tax expenditures like the state and local tax (SALT) deduction.[20] Congress should consider this plan, which could be improved by further offsetting its costs by reducing the amount of CTC benefits that flow to very high-income households (such as those making $150,000 or $250,000 or $400,000 per year).

Make it easier for workers to set aside tax-free dollars for health and child care needs: Many workers have access to tax-advantaged savings accounts for health and child care needs, such as health savings accounts (HSAs) and flexible

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[17] Bureau of Labor Statistics. (March 5, 2021). "The Employment Situation—February 2021." Retrieved from: *https://www.bls.gov/news.release/pdf/empsit.pdf.* (Accessed March 15, 2021.)

[18] Joint Committee on Taxation. (March 9, 2021). "Estimated Revenue Effects of H.R. 1319, The "American Rescue Plan Act of 2021," as Amended by the Senate, Scheduled for Consideration by the House of Representatives." Retrieved from: *https://www.jct.gov/publications/2021/jcx-14-21/.* (Accessed March 15, 2021.)

[19] Rubin, Richard. "Democrats Seek Temporary Expansion of Child Tax Credit, but Making It Permanent Is Real Goal." The Wall Street Journal, March 3, 2021. Retrieved from: *https://www.wsj.com/articles/democrats-seek-temporary-expansion-of-child-tax-credit-but-making-it-permanent-is-real-goal-11614776401.* (Accessed March 15, 2021.)

[20] Lautz, Andrew. "Romney Child Tax Credit Plan a Thoughtful Addition to COVID Relief Talks." National Taxpayers Union, February 9, 2021. Retrieved from: *https://www.ntu.org/publications/detail/romney-child-tax-credit-plan-a-thoughtful-addition-to-covid-relief-talks.* (Accessed March 15, 2021.)

spending arrangements (FSAs). Sometimes, though, workers are tied up by outdated or unnecessarily restrictive rules around contributing to and rolling over these funds from year to year. NTU supports bipartisan legislation from Reps. Brad Wenstrup (R–OH) and Cindy Axne (D–IA) to increase the HSA contribution limit (currently only $3,550 for individuals and $7,100 for families),[21] increase rollover limits for FSAs,[22] and bipartisan legislation from Reps. Katie Porter (D–CA) and Jamie Herrera Beutler (R–WA) to increase a contribution limit for dependent care FSAs that has not been updated since the 1980s.[23]

Any of these options would help workers save money on their health and child care expenses by making a larger portion of those contributions tax-free, and would also help employers by making these fringe benefit offerings more attractive to potential workers.

Follow up on the work of the SECURE Act: Key to a healthy and vibrant workforce is the option for workers to save for retirement, and Congress took a big step forward with its passage of the Setting Every Community Up for Retirement Enhancement (SECURE) Act in 2019.

NTU wrote of the SECURE Act at the time:

> . . . the SECURE Act would increase the accessibility and affordability of retirement products for millions of workers, thereby making it easier for people to grow their savings. Specifically, the SECURE Act makes it easier for small businesses to band together to offer retirement plans, enables part-time workers to participate in 401(k) plans, and raises the required distribution age for individual retirement accounts from 70½ to 72. Additionally, the SECURE Act allows employers who offer retirement plans with automatic enrollment to be eligible for tax credits. These meaningful reforms will help families save more and earlier for their future.[24]
>
> Important work remains to be done, including making it easier for small employers to offer retirement options, making it easier for low- and middle-income workers to save for retirement on their own, shoring up Social Security for the decades to come so that it is there for those who most need it, and ensuring that ARP's multiemployer pension plan bailout does not leave taxpayers on the hook for pension plan managers' mistakes for decades to come. NTU looks forward to working with members of both parties to achieve these goals.

Conclusion

America's economic recovery from COVID–19 is underway, and Congress has a unique opportunity to help pave the way for businesses and workers to participate in a manufacturing renaissance that bolsters America's position in the global economy for decades to come. It is clear to us that there are several policy proposals that would work actively against this goal, such as a corporate rate hike or top-down, inefficient federal government industrial policies like "Buy America" and aggressive use of the Defense Production Act.

Equally clear is the path forward for lawmakers: incentivize business investment in America by making cost recovery quicker and more efficient, and support workers with policies that make it easier for families to balance competing priorities with employment in the private sector.

We look forward to working with you and your colleagues on some or all of these priorities. We always welcome your feedback, and if we can answer any questions I am at your service. Thank you for your consideration and for your attention to these critical issues.

Sincerely,

Andrew Lautz
Director of Federal Policy

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[21] Lautz, Andrew. "Bipartisan Bill Would Provide Needed FSA Flexibility for Millions." National Taxpayers Union, May 28, 2020. Retrieved from: *https://www.ntu.org/publications/detail/bipartisan-bill-would-provide-needed-fsa-flexibility-for-millions#.* (Accessed March 15, 2021.)

[22] *Ibid.*

[23] Porter, Katie. (February 4, 2021). "Rep. Porter Reintroduces Bill to Help Families Pay for Childcare." Retrieved from: *https://porter.house.gov/news/documentsingle.aspx?DocumentID=280.* (Accessed March 15, 2021.)

[24] Aiello, Thomas. "NTU Urges Representatives to Support the SECURE Act of 2019." National Taxpayers Union, May 23, 2019. Retrieved from: *https://www.ntu.org/publications/detail/ntu-urges-representatives-to-support-the-secure-act-of-2019.* (Accessed March 15, 2021.)

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Statement of Carlos Rodriguez, President

Chairman Wyden, Ranking Member Crapo, and Members of the Finance Committee, thank you for the opportunity to submit my Statement on behalf of the Puerto Rico Manufacturers Association (PRMA). My name is Carlos Rodriguez. I am President of the PRMA, Puerto Rico's largest and most important business organization whose members are responsible for 350,000 well paying, middle class jobs and one-half of our island's GDP. We also represent over one third of Puerto Rico's tax revenues.

Certainly, manufacturing in Puerto Rico is domestic manufacturing. We operate on U.S. soil, play a key role in the U.S. supply and logistics chain and we employ U.S. Citizens helping the U.S. compete in today's global economy. Our employees also contribute to both the Federal and local tax base. As Congress looks to understand the impact of U.S. tax reform on manufacturing and address the need for new policy designed to reshore manufacturing, we ask that Puerto Rico be included in this new strategy.

We hope to draw your attention to what we hope is an unintended consequence of the provisions of the recently enacted Tax Cut and Jobs Act of 2017 (TCJA), that Senate Majority Leader Schumer once aptly described as: "[a] devastating new business tax that treats Puerto Rico as if it is a foreign country, which could encourage manufacturers to leave the island. This tax could cost thousands of jobs and decimate Puerto Rico's economy at exactly the time when Puerto Rico is hurting from the hurricanes and needs all the help it can get."

It is important to provide some background. As an unincorporated territory, Puerto Rico and its millions of U.S. citizens residing in it have been subject to almost every federal law and its regulations. To that end, Puerto Rico has been included in the U.S. Customs Zone since 1917 and since the 1920s, Congress has enacted tax provisions which actively encouraged U.S. manufacturers to locate in Puerto Rico. And this policy produced results making Puerto Rico a manufacturing center; especially in pharmaceuticals and medical device manufacturing.

Up to 1996, a federal corporate income tax credit—the possessions tax credit—was available to certain U.S. corporations that located in Puerto Rico. In general, the credit equaled the full amount of federal tax liability related to an eligible corporation's income from its operations in a possession—including Puerto Rico—effectively making Puerto Rico an attractive location for manufacturing. In 1996, the tax credit was repealed, although corporations that were existing credit claimants were eligible to claim reduced credits through 2005.

The result of this policy change did not produce additional revenues to the U.S. and created significant adverse consequences for Puerto Rico, as between 2005 and 2016 Puerto Rico's economy suffered year-over-year declines in real output measured by real gross domestic product (GDP). From 2005 to 2016, Puerto Rico's real GDP fell by more than 9 percent (from $82.8 billion to $75.0 billion in 2005 dollars). Puerto Rico's gross national product (GNP) followed a similar pattern over the same period, declining by more than 11 percent from 2005 to 2016 (from $53.8 billion to $47.7 billion in 2005 dollars) with significant job loss to the island. What is more significant is the loss of close to 100,000 well-paid manufacturing jobs between 1996 and 2019.

As a result of a contracting economy, shrinking tax base and growing demands on it, Puerto Rico's government has operated with a deficit, placing itself in an unsustainable financial situation with a $72B debt. As pointed out in a letter from the Puerto Rico Federal Affairs Administration to the Government Accounting Office in response to its report on how Puerto Rico got to this situation, the reasons are not all attributable to deficient self-governance. Under Puerto Rico's territorial status, Congress can and historically has treated the island disparately under multiple federal laws and programs (such as Medicaid, Medicare, Highway funding, Earned Income Tax Credits, participation in tax treaties). However, various requirements are imposed in the same manner as other states such as Federal Minimum Wages, EPA requirements and OSHA regulations.

Contrary to widespread belief, the majority of federal transfers to Puerto Rico are earned, that is, they are benefits for which the recipients have paid and represent 70% of total receipts, consisting mostly of Social Security and Medicare payments to the federal government by Puerto Rico residents. In fiscal year 2017 (which runs from July to June), total federal transfers to Puerto Rico amounted to $21.5 billion, of which $15.1 billion were earned. The majority of federal transfers to Puerto Rico are received by individuals, representing $18.1 billion, of which 83% are earned and consist mostly of Social Security, Medicare Benefits and Veterans benefits. Grants, such as Nutritional Assistance and scholarships (Pell Grants), represent the remaining 17% of total receipts by individuals in Puerto Rico.

This means that Puerto Rico cannot count on the same amount of federal support that State governments and mainland residents receive. Thus the Island's economy must evolve in an uneven playing field. These inequitable policies also lead to an overall quality of life and standard of living in Puerto Rico that is below the standard in the states in multiple respects. This structural inequality explains, in great measure, why Puerto Rico is in the situation it now finds itself.

The TCJA was enacted without adequately addressing Puerto Rico's specific conditions and it treats Puerto Rico as if it were a foreign country and not part of the United States. We do not believe the Congress intended to turn its back on 3.2 million U.S. citizens by ending, without any transitional relief, decades of tax policy that successfully encouraged economic progress in Puerto Rico. Annex 1 to this statement describes the prospects for the Puerto Rican economy post Hurricane María and takes into consideration information provided by the Federal Fiscal Oversight and Management Board created by the Puerto Rico Oversight, Management and Economic Stability Act (PROMESA).

The TCJA generates additional pressures on the Island's economy and particularly manufacturing, due to the combination of a lowered statutory rate (21%) that will translate to a lower effective tax rate for manufacturing firms on the mainland, estimated to be 9.0% with the new law, and the new tax policies regarding international operations (in which Puerto Rico is included). For instance, a new tax has been established with respect to "global intangible low-taxed income" (GILTI), which imposes a new burden on what could be a significant portion of the income derived from Puerto Rico operations. Obviously, if these new international tax policies continue to apply to Puerto Rico, as if it were one more foreign jurisdiction, instead of a U.S. territory, the decades long economic development model that has been implemented in Puerto Rico will have to be altered significantly. This will take time and Puerto Rico needs transitional support in order to assure the success of this transition. Otherwise, Puerto Rico's manufacturing sector may well die a not-so slow death and take the Island's economy with it.

We hope and have to assume that this was not Congress's goal but, by treating the income of U.S. multinational companies operating as Controlled Foreign Corporations (CFCs) in Puerto Rico in the same manner as if they are operating in competing foreign jurisdictions, such as the Dominican Republic, Ireland or Costa Rica, we have been placed at a competitive disadvantage by this new tax law. Economists expect operations to slowly transition to lower cost foreign jurisdictions and little new investment will flow to current operations in Puerto Rico. These jurisdictions are in a favorable competitive position because they do not have to comply with U.S. environmental, labor and other regulatory requirements with which firms in Puerto Rico must comply. It's important to remember that Puerto Rico is the only place in the world where U.S. CFCs employ U.S. Citizens, pay U.S. FICA taxes and operate under U.S. Law and Regulations.

The TCJA does not change the above conditions but places Puerto Rico's manufacturers at a disadvantage without consideration of its impact on U.S. jobs in a Territory that has a population larger than that of 20 States, with a manufacturing sector that is a vital component of the U.S. supply and value chains.

We urge Congress to correct this error and ensure a competitive differential vis-à-vis international destination under Federal tax law regarding income earned in Puerto Rico. This will allow us to effectively compete with foreign jurisdictions seeking to attract the operations of CFCs to their countries. In simple terms, a meaningful reduction or exemption is required from the GILTI provisions imposed on CFC income in Puerto Rico if we are to be competitive with our foreign competition.

We must stress the fact that support in providing a solution to Puerto Rico's economic and social problems is not only the fair and equitable thing to do for the millions of U.S. citizens that have been and/or reside in America's largest territory. It

is also Congress' responsibility because it alone exercises constitutional control of the territory and as such it must assume the responsibilities that come with that control, recognize the damage that the TCJA can cause, take steps to mitigate such damages and provide the residents of the Island with the means to a better economic and social existence.

Thank you for the opportunity to present our statement on behalf of PRMA. We look forward to working with you to enact Federal policy designed to foster economic growth and the welfare of the 3.3 million U.S. citizens in Puerto Rico.

ANNEX 1

Prospects for the Puerto Rican economy post-Hurricane María

The recently certified Fiscal Plan formulated by the Financial Oversight and Management Board projects a contraction of 13% in the economy (real GNP) for fiscal 2018, with positive growth for fiscal 2019 and the return to trend for years following 2020. What this means is that Puerto Rico's GNP will not return to the 2006 level until late in the next decade.

This projection is accompanied by a dramatic loss in population that has pushed the population of Puerto Rico from 3.8 million in 2000 to a projected 2.9 million by 2025, again the number projected in the Fiscal Plan. The loss in population is mostly due to net out-migration that has averaged over 60,000 per year since 2014 and in fiscal 2018 will be at least 150,000.

A characteristic of this migratory phenomenon is that close to two thirds of emigrants from the Island are younger than 40 years and includes a substantial number of professionals and those with university degrees. A consequent condition is that in many critical occupations, Puerto Rico's human capital has been severely eroded. This is particularly so in medical specialties, trained nursing personnel, skilled construction workers and bilingual teachers and policemen. The implications for the social and economic development of the Island are immense and very negative.

Another consequence of the demographic shift is the fact that the population remaining in the Island will have a major component of elderly persons. In fact, by 2025, Puerto Rico's population will be characterized by an inverted pyramid with more persons ages 65 and above than 19 or below. The implications of this are also very significant for a number of reasons. It will be a very low income elderly population, the demand for social services, particularly health, will increases substantially and the government, should present trends be maintained will simply not have the resources to meet these needs. The median age of the population has surpassed the age of forty and is projected to continue moving rapidly towards an even higher median age in the next decade.

The most significant manifestation of the very fragile economic and social situation of the Island is the fact that since 2007 over 200,000 jobs have been lost and, even with a very low labor force participation rate of 40%, the unemployment rate has hovered around 12%. In the manufacturing sector, responsible for a major component of GDP, employment has fallen from a high of 165,000 in the mid-nineties to a current level of some 70,000.

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March 16, 2021

The Honorable Ron Wyden
Senator, State of Oregon
Chairman
U.S. Senate
Committee on Finance
219 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Mike Crapo
Senator, State of Idaho
Ranking Member

U.S. Senate
Committee on Finance
219 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Wyden and Ranking Member Crapo,

I submit this statement for the record for the March 16, 2021, Senate Finance Committee hearing titled "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing" on behalf of the Policy and Taxation Group, which is an organization comprised of family-held businesses from throughout the country that are dedicated to reform of the estate tax. We appreciate the Committee's renewed efforts to examine the effect of the U.S. Tax Code on U.S. businesses, including the domestic manufacturing industry. Our members represent an array of different industries and include a number of manufacturers from around the country, thus we very much understand the challenges presented by our current Tax Code.

At the outset, it is important to note that family-held businesses—including U.S. domestic manufacturers throughout the United States—make up 59 percent of the private sector workforce and are responsible for more than 83 million jobs.[1] Collectively, these businesses make up 54 percent of the private sector GDP and add $7.7 trillion to the U.S. economy.[2] As such, as the Committee examines the effect of the U.S. Tax Code on domestic manufacturers and other industries, it should also be mindful of how current tax policies effect family-held businesses, generally.

Amidst the various tax policy challenges that already exist for family-held businesses, there is one challenge that Congress appears increasingly willing to create: reverting the doubled estate tax exemption to pre-Tax Cuts and Jobs Act of 2017 levels. We believe this is a critical policy change that should not be reversed, but instead, be made permanent. While we believe that eliminating the estate tax is ultimately the best approach, making permanent the doubled exemption as enacted as part of the 2017 tax law would be a step in the right direction. Nevertheless, we believe that more than just a doubling of the exemption is needed.

If the Committee is genuinely concerned about how the Tax Code is negatively effecting U.S. businesses, it must take bold action—especially as relates to protecting family-held businesses. One legislative option that will help *all* family-held businesses subject to the estate tax: reduce the rate—which is arbitrarily the highest rate in the Tax Code—to the capital gains tax rate, while maintaining step-up in basis.

In addition to a reduction in the estate tax rate, there are various other policy changes that could be implemented to protect family-held businesses from the unfair and disastrous consequences of the estate tax. As the Committee continues to examine such policies, we stand ready to serve as a resource to you, your fellow Committee members, and staff and are happy to provide additional information or answer any questions that you may have.

Thank you for your consideration of these important tax policies and your continued efforts to improve our nation's Tax Code.

Sincerely,

Pat Soldano
Founder

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Hon. Ron Wyden
Chairman
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[1] Update 2021: Family Businesses' Contribution to the U.S. Economy, Family Enterprise USA (Feb. 2021).
[2] *Id.*

Hon. Mike Crapo
Ranking Member
U.S. Senate
Committee on Finance
219 Dirksen Senate Office Building
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Dear Chairman Wyden and Ranking Member Crapo,

The Solar Energy Industries Association ("SEIA") submits this letter in support of the Senate Finance Committee's March 16 hearing "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing." SEIA applauds the Committee for holding this critical hearing. Manufacturing is one of the backbones of the United States economy and the Committee's work will be crucial in strengthening the United States' manufacturing capabilities. A strong manufacturing base not only supports U.S. jobs and infrastructure but also the development needs of our friends and allies. Any new economic or infrastructure agenda must include federal manufacturing incentives, and SEIA stands ready to work with Congress in crafting supportive policies.

As the national trade association for the solar industry, SEIA is leading the transformation to a clean energy economy and creating the framework for solar to achieve 20% of U.S. electricity generation by 2030. Achieving this goal will result in hundreds of thousands of new U.S. jobs, more than 14 million solar rooftops, and 500 million metric tons of avoided CO_2 emission. To date, however, while the broader U.S. solar industry has and will continue to flourish, U.S. solar manufacturing has languished.

In September 2020, SEIA released a whitepaper laying out an ambitious vision for U.S. manufacturing, including a goal of 100 Gigawatts (GW) of renewable energy manufacturing capacity by 2030. This target includes solar, energy storage, and wind manufacturing and recognizes that investments in clean energy manufacturing will promote energy security, decarbonization, and jobs.

In the solar sector, we must confront the reality of years of underinvesting in our own manufacturing capabilities. While we have significant capacity to produce polysilicon, racking and mounting equipment, and some balance of system components, we have no domestic capacity for other key elements of the solar supply chain, including silicon wafers, solar cells, and inverters. Simply put, there is a great opportunity for Congress to help grow the solar manufacturing base throughout the United States.

We must also recognize, however, that expanding the U.S. solar supply chain is not going to be easy and will take time, several years in fact. If we are to meet the Administration's ambitious climate goals, we must therefore find a balance between growing the domestic supply chain while continuing to rely upon global inputs.

While we are confident we can reach our 100 GW goal, it is going to take unprecedented, long-term investments by the federal government, as well as a suite of policy incentives focused on: (i) demand drivers, such as a long-term extension of the Investment Tax Credit and federal procurement; (ii) expanding production capacity, *e.g.,* low-cost loans and a manufacturing tax credit; and (iii) ongoing support for factories as they scale and lower costs, *e.g.,* factory production or output tax credit. To be successful, it is essential that we invest in all three areas. The reality is that costs for domestic producers are going to be higher than in competing countries, particularly as we scale up our manufacturing base.

SEIA believes these policies together offer meaningful support for manufacturers. We therefore urge the Subcommittee to include manufacturing incentives in any new economic or infrastructure package.

Thank you for your time and consideration.

Sincerely,

Abigail Ross Hopper, Esq.
President and CEO

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Ability of the U.S. Tax Code to Incentivize the Domestic Manufacturing of Energy Efficiency Technology

Chairman Wyden, Ranking Member Crapo, and Members of the Committee, Suniva is pleased to provide this submission for the record for the Committee's hearing "Made in America: Effect of the U.S. Tax Code on Domestic Manufacturing." Suniva is the sole remaining large-scale U.S. producer of solar cells. Every other major solar cell producer in the United States has been wiped out as a result of competition from imports from producers in China and elsewhere in Southeast Asia. Many of these other producers in Southeast Asia are simply transplants who moved out of China to avoid anti-dumping and countervailing duties imposed by the U.S. on dumped and subsidized imports.[1] While Suniva and other U.S. solar equipment producers have successfully sought trade protection from these imports, this trade protection is undermined by a fundamental flaw in U.S. tax policy that incentivizes the use of imported solar cells and modules.

As currently constructed, in combination Sections 25D and 48 of the Internal Revenue Code, the solar Investment Tax Credit (solar ITC), provides a tax credit based on the amount of solar generation equipment installed.[2] Thus, the cheaper the equipment the further the benefits of the solar ITC go. Therefore, the solar ITC creates the incentive to obtain solar cells and modules at the lowest possible price in order to maximize the amount of the credit available. This incentive to procure the cheapest solar cells possible has driven developers to pursue solar cells, modules and their components from China and its Southeast Asian proxies where producers are heavily subsidized and in some cases rely on forced labor.[3] In fact, independent analysis has determined that "a significant share" of tax credits paid out under the solar ITC have gone to pay for solar cells and modules imported from China.[4]

Two members of this Committee, Senators Schumer and Brown, were prescient when they called for the solar ITC to be available only to U.S. produced solar cells and modules or risk that the overwhelming subsidies provided by the Chinese government would enable imports from China to wipe out the U.S. solar industry.[5] Because the solar ITC was not limited to only U.S. produced products, that is effectively what happened.

Only a small fraction of the U.S. solar manufacturing industry survived the onslaught of imports from China and only as a result of aggressive use of trade remedy laws. However, even in the face of antidumping, countervailing duty and safeguard remedies imports of solar cells and solar panels still dominate the U.S. market.

U.S. imports of solar cells and modules rose from just over 6 GW in 2018, the first year of the global safeguard, to over 16 GW in 2019 and nearly 25 GW in 2020.[6] Part of the reason for the continued dominance of imports in the U.S. market is because the tariffs imposed under this global safeguard have not been enough to offset the incentive the solar ITC creates to use cheap, subsidized imports. In 2018, the solar ITC was 30% and the tariff on modules was 30% while the tariff on solar cells was effectively zero.[7] In 2019, the solar ITC remained at 30% but the tariff on modules declined to 25% while the tariff on solar cells remained effectively zero. In 2020. the solar ITC declined to 26% but the tariff on modules declined further

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[1] U.S. International Trade Commission, Crystalline Silicon Photovoltaic Cells, Inv. No. TA–201–75, Vol. I: Determination and Views of Commissioners, Publication 4739, Nov. 2017, at 40.

[2] The Solar Investment Tax Credit (ITC), Solar Energy Industries Association, available at *https://www.seia.org/initiatives/solar-investment-tax-credit-itc.*

[3] *https://www.nytimes.com/2021/01/08/business/economy/china-solar-companies-forced-labor-xinjiang.html*.

[4] Reclaiming the U.S. Solar Supply Chain from China, Coalition for Prosperous America, March 2021.

[5] *https://www.renewableenergyworld.com/solar/senate-democrats-exclude-chinese-solar-panels-from-itc/#gref*.

[6] U.S. International Trade Commission, Dataweb, imports for consumption, HTS 8541.40.60.

[7] The 201 remedy for solar cells imposed a tariff only after the volume of imported solar cells exceeds 2.5GW. *See* U.S. International Trade Commission, Crystalline Silicon Photovoltaic Cells, Monitoring Developments in the Domestic Industry, Prehearing Report, Inv. NO. TA–201–75 (Monitoring).

to 20% and the effective tariff on cells remained at zero. In 2021, the solar ITC will remain at 26% while the tariff on modules declines to 18% and based on current projections, the tariff on cells will remain effectively zero. The minimal protection afforded by the tariffs will lapse when the safeguard expires in February, 2022 while the solar ITC will remain in place through at least 2023 for both residential and commercial installations. Thus, the incentive caused by the solar ITC to use imports over American made solar cells and modules will continue.

Therefore, the solar ITC continues to strongly incentivize the use of imported of solar cells and modules over solar cells and modules made in America. As has been noted by the U.S. International Trade Commission and other third-party analysts the solar cell is actually what generates electricity, accounts for most of the R&D and is "the heart of photovoltaic energy production."[8]

Suniva recognizes that at this point limiting the solar ITC to only U.S. produced solar cells and modules may not be feasible. Therefore, Suniva strongly encourages Congress to amend the solar ITC to provide an additional tax credit to support the restoration of U.S. solar manufacturing. This credit must be significant enough to offset the incentives provided by the solar ITC to use cheap and subsidized imports. Suniva recommends that such a credit be based on actual production or production costs rather than revenue or income in order to effectively combat the advantage in marginal production costs foreign producers enjoy. Such a credit would complement the recent bipartisan proposal American Jobs in Energy Manufacturing Act. Suniva stands ready to work with you and the Committee to develop such a credit and support consideration of the American Jobs in Energy Manufacturing Act.

[8] Reclaiming the U.S. Solar Supply Chain from China, Coalition for Prosperous America, March 2021.