AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

SUPPLY CHAIN RESILIENCY AND THE ROLE OF SMALL MANUFACTURERS

HEARING

BEFORE THE

SUBCOMMITTEE ON ECONOMIC GROWTH, TAX, AND CAPITAL ACCESS

OF THE

COMMITTEE ON SMALL BUSINESS UNITED STATES HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

HEARING HELD
APRIL 29, 2021



Small Business Committee Document Number 117–010
Available via the GPO Website: www.govinfo.gov

U.S. GOVERNMENT PUBLISHING OFFICE
44–563 WASHINGTON : 2021

HOUSE COMMITTEE ON SMALL BUSINESS

NYDIA VELÁZQUEZ, New York, *Chairwoman*
JARED GOLDEN, Maine
JASON CROW, Colorado
SHARICE DAVIDS, Kansas
KWEISI MFUME, Maryland
DEAN PHILLIPS, Minnesota
MARIE NEWMAN, Illinois
CAROLYN BOURDEAUX, Georgia
JUDY CHU, California
DWIGHT EVANS, Pennsylvania
ANTONIO DELGADO, New York
CHRISSY HOULAHAN, Pennsylvania
ANDY KIM, New Jersey
ANGIE CRAIG, Minnesota
BLAINE LUETKEMEYER, Missouri, *Ranking Member*
ROGER WILLIAMS, Texas
JIM HAGEDORN, Minnesota
PETE STAUBER, Minnesota
DAN MEUSER, Pennsylvania
CLAUDIE TENNEY, New York
ANDREW GARBARINO, New York
YOUNG KIM, California
BETH VAN DUYNE, Texas
BYRON DONALDS, Florida
MARIA SALAZAR, Florida
SCOTT FITZGERALD, Wisconsin

MELISSA JUNG, *Majority Staff Director*
ELLEN HARRINGTON, *Majority Deputy Staff Director*
DAVID PLANNING, *Staff Director*

CONTENTS

OPENING STATEMENTS

	Page
Hon. Sharice Davids	1
Hon. Dan Meuser	3

WITNESSES

Mr. Claudio Dente, President, DenTec Safety Specialists, Lenexa, KS	6
Mr. Wes Hampp, Co-Founder & Managing Partner, Holleway Capital Partners, LLC, Overland Park, KS	7
Ms. Kimberly Glas, President & CEO, National Council of Textile Organizations, Washington, DC	9
Mr. David Taylor, President & CEO, Pennsylvania Manufacturers' Association, Harrisburg, PA	10

APPENDIX

Prepared Statements:	
Mr. Claudio Dente, President, DenTec Safety Specialists, Lenexa, KS	21
Mr. Wes Hampp, Co-Founder & Managing Partner, Holleway Capital Partners, LLC, Overland Park, KS	26
Ms. Kimberly Glas, President & CEO, National Council of Textile Organizations, Washington, DC	34
Mr. David Taylor, President & CEO, Pennsylvania Manufacturers' Association, Harrisburg, PA	43
Questions for the Record:	
None.	
Answers for the Record:	
None.	
Additional Material for the Record:	
Alliance for American Manufacturing	47
American Fashion Network (AFN)	50
CATO	53
Job Creators Network (JCN) Statement of Carlos Ruiz	120
Job Creators Network (JCN) Statement of Guy Berkebile	121
Manufactured Housing Institute (MHI)	123
National Waste & Recycling Association	125

SUPPLY CHAIN RESILIENCY AND THE ROLE OF SMALL MANUFACTURERS

THURSDAY, APRIL 29, 2021

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SMALL BUSINESS,
SUBCOMMITTEE ON ECONOMIC GROWTH,
TAX, AND CAPITAL ACCESS,
Washington, DC.

The Subcommittee met, pursuant to call, at 1:00 p.m., via Zoom platform. Hon. Sharice Davids [chairwoman of the Subcommittee] presiding.

Present: Representatives Davids, Newman, Evans, Andy Kim, Meuser, Van Duyne, and Donalds.

Chairwoman DAVIDS. Good afternoon, everybody. I call this hearing to order.

Without objection, the Chair is authorized to declare a recess at any time.

I want to thank everyone, especially our witnesses for joining us today for our Subcommittee's remote hearing. I want to make sure to note some important requirements.

Let me begin by saying that the standing House and Committee rules and practice will continue to apply during remote proceedings. All members are reminded that they are expected to adhere to these standing rules including decorum when they are participating in any remote event.

With that said, the technology we are utilizing today requires us to make some small modifications to ensure that the members can fully participate in these proceedings. House regulations require members to be visible through a video connection throughout the proceeding, so please keep your cameras on. Also, if you participate in another proceeding, please exit and log back in later.

In the event a member encounters technical issues that prevent them from being recognized for their questioning, I will move to the next available member of the same party. I will recognize that member at the next appropriate time slot provided they have returned to the proceeding.

Should a member's time be interrupted by technical issues, I will recognize that member for the next appropriate spot for the remainder of their time once their issues have been resolved. In the event a witness loses connectivity during testimony or questioning, I will preserve their time as the staff addresses the technical issue. I may need to recess the proceedings to provide time for the witness to reconnect.

And finally, remember to remain muted until you are recognized to minimize background noise.

In accordance with the rules established under H.R. 965, staff have been advised to mute participants only in the event that there is inadvertent background noise. Should a member wish to be recognized, they must unmute themselves and seek recognition at the appropriate time.

All right. Well, the COVID-19 pandemic has exposed long-standing weaknesses in global supply chains. As countries around the world shut down to slow the spread of the virus, entire sections of the domestic and global economies were brought to a standstill. In the United States, businesses across every sector suffered supply shortages. Gaps in supply chain had a substantial impact on our fight against COVID. The scarcity of personal protective equipment forced medical professionals on the frontlines to fight the virus with garbage bags as gowns and coffee filters as masks.

At the same time, we saw insufficient supply in critical industries like clothing manufacturing, electronic components, and agriculture. In total, nearly 80 percent of U.S. businesses experienced a disruption in their supply chain. These disruptions often hit small businesses the hardest. Small firms regularly have limited inventory, depend on lower costs from overseas suppliers, and do not have the margins to sustain extended product shortages.

While small businesses are uniquely vulnerable to disruptions, they also play a pivotal role in building more resilient supply chains. Small firms are agile and adapt to changing market conditions more quickly than large corporations. Small manufacturers can also quickly adapt their business models to meet changing demands. As we saw last year when small distillers began producing hand sanitizer, independent manufacturers can shift operations to meet the needs of their communities. These small domestic manufacturers will play a critical role as we seek to strengthen our supply chains and prepare for future economic disruption.

That is why we have to recognize the significant obstacles that these enterprises face in a post-COVID world and work to address those. The overall manufacturing sector could take longer than 5 years to recover to the pre-crisis GDP levels. To return to pre-pandemic output, factories are going to need to address various challenges related to meeting new health and sanitation requirements. This will require the implementation of new systems, the adoption of digital technologies to protect their workers, and modernization in the wake of the pandemic.

To meet these challenges, small manufacturers will need reliable access to affordable capital. Unfortunately, these firms traditionally have a much harder time obtaining funding than their larger counterparts. This leads many to rely on antiquated equipment and facilities with lower productivity. Without increased access to affordable capital, small manufacturers will find it difficult to find the upgrades necessitated by the pandemic further weakening America's manufacturing base.

Fortunately, the Small Business Administration has several programs in place that small manufacturers can take advantage of. Every year, the 7(a) loan guarantee program, the 504/CDC loan guarantee program, and the Small Business Investment Company

Program supply small manufacturers with billions of dollars in capital on favorable terms. This money helps these businesses pay for fixed assets, purchase new equipment, access venture capital, and finance a variety of other expenditures. We must utilize these programs and others to strengthen our manufacturing base and avoid future supply chain disruptions.

That is why I fought to secure $10 billion for the Defense Production Act in the American Rescue Plan, to ramp up domestic production of critical supplies. It is also why I recently introduced the Supplies Act, a bill that would create $100 million grant program to increase domestic manufacturing of medical supplies by our small businesses. I hope that today's hearing gives us a chance to find more ways to empower small manufacturers and improve the SBA lending program to serve them.

I now yield to the Ranking Member for his opening statement.

Mr. MEUSER. Thank you, Madam Chairwoman. I appreciate it very much. I certainly appreciate our witnesses appearing with us today.

Am I coming through okay, Madam Chair? Okay, great.

Coming from a manufacturing background, I am very much looking forward to this hearing and hearing from all on some ideas, suggestions that the Federal Government and the U.S. Congress can engage in to improve our strength and ability for small manufacturers, and all manufacturers for that matter. And I thank you, Madam Chairwoman. I appreciate your convening today's hearing on this very important topic. Given the great influence these businesses have on our national economy, I think it is particularly appropriate that we dedicate the Subcommittee's first hearing for one of America's most vital industries. In fact, it is difficult to overstate the importance of manufacturing to our economy. At a microlevel, manufacturing is a significant job creator, reaching higher than average salaries, raising the standard of living for millions of Americans across the country. Pennsylvania manufacturers account for over 12 percent of the total output in the state, employing nearly 600,000 individuals directly and 10 percent of our workforce. Pennsylvania manufacturers help sustain millions of additional jobs up and down the supply change. Prior to the pandemic, total manufacturing was almost $100 billion in 2019.

Manufacturing is also a most significant of a multiplier effect. It generates more economic activity than any other economic sector. For every dollar spent in manufacturing from the private sector, another $1.89 is added to the overall economy. At a microlevel, manufacturing drives productivity growth which drives R&D growth.

Productivity growth is the lifeblood of technological development. The bulk of innovation happens in manufacturing growth from other sectors and springs from innovation within the sector. Given its significance, this hearing should help us understand top concerns threatening the industry. The workforce crisis in manufacturing in Pennsylvania, and I am sure in most states, is exasperated by the gradual retirement of an aging workforce and negative perception of manufacturing by the younger generation. That is why we need more tours and more career technical investments because these manufacturing facilities are far cleaner and they are

not the traditional manufacturing of our fathers' days. A skills gap resulting from declining science, technology engineering in the U.S. and the inability to recruit qualified candidates in skilled production line positions. These struggles are only one piece of the broader picture.

Outsourcing of U.S. manufacturing to foreign nations, from China, most of Southeast Asia and down the list, we have driven supply chains vulnerable to failure and exploitation by foreign actors weakening our national position in defense, health, and all other sectors. The aggressive economic tactics by competitive Nations creating global market distortions which will depress competition.

On top of all this, the maze of Federal acquisition processes, like the contract timelines and emergency clearances and accounting requirements creates significant hurdlers for U.S. manufacturers and all businesses for that matter seem to grow and thrive in the Federal marketplace, as well as a tendency for the U.S. not to create the most competitive atmosphere and truly appreciate that is what draws manufacturing to the U.S. from other countries who compete on a global scale. All manufacturers in particular hit hardest by such challenges.

Even though the overall picture might seem quite challenging, the silver lining in this is the power of the small manufacturers will reshape our Nation. Many small manufacturers do not make finished products but are a source for many domestic manufacturers of finished products. From my business career in manufacturing, close to 25 years, I know firsthand the importance of reliable, quality, cost-effective, financially solvent supply chain.

Given any impact to small manufacturers, positive or negative that can cause a significant ripple throughout the rest of our economy, we as members of Congress need to consider carefully our policies and their impact on these essential businesses, especially now as we are recovering from the pandemic. In short, manufacturing matters. I look forward to the testimony of the witnesses today and I yield back. Thank you.

Chairwoman DAVIDS. Thank you, Mr. Meuser. The gentleman yields back.

I would like to take a moment to explain how this remote hearing will proceed. Each witness will have 5 minutes to provide a statement, and each Committee member will have 5 minutes for questions. Please ensure that your microphone is on when you begin speaking and that you return to mute when you have finished.

I would now like to introduce our witnesses.

Our first witness is Mr. Claudio Dente. Mr. Dente is the president of Dentec Safety Specialists, a manufacturer of personal protective equipment located in Lenexa, Kansas, which is in my home district. His business had to pivot at the height of the pandemic in order to meet the sharp increase in demand for PPE and face severe supply chain management challenges. I am looking forward to hearing about how Dentec adapted to the market conditions brought on by the pandemic. Welcome, Mr. Dente.

Our second witness is Mr. Wes Hampp. Mr. Hampp is the cofounder and managing partner of Holleway Capital Partners, an

SBA-licensed small business investment company (SBIC) located in my district that targets small manufacturers in the Greater Midwest and Southern U.S. His insights are critical for us to learn how SBA's capital programs, such as SBIC, can play a role in helping finance the future of our domestic manufacturing base. Welcome, Mr. Hampp.

And then our third witness today is Ms. Kimberly Glas, president and CEO of the National Council of Textile Organizations. NCTO represents and advocates for domestic textile manufacturers, the vast majority of whom are small businesses. Prior to joining NCTO, Ms. Glass held positions at the Department of Commerce as the deputy assistant secretary for textiles, consumer goods and materials, and led the Blue Green Alliance. Your long history and expertise in this industry will certainly help us craft a path forward for small business manufacturers. Welcome, Ms. Glass.

And I would like to now yield to our Ranking Member, Mr. Meuser, to introduce our final witness.

Mr. MEUSER. I thank you, Madam Chairwoman, very much.

I would like to welcome our final witness who is from the great Commonwealth of Pennsylvania, Mr. David Taylor. Mr. Taylor is the president and chief executive officer of the Pennsylvania Manufacturers' Association (PMA), the century-old statewide trade organization representing the hardworking manufacturers throughout the Commonwealth. PMA is the official Pennsylvania state partner of the National Association of Manufacturers (MAN), the Nation's foremost advocate for manufacturers representing 14,000 member companies across the country in every industrial sector. Mr. Taylor brings with him a wealth of knowledge and experience having spent over 2 decades with PMA as its spokesman in the state capitol and as a leader. Mr. Taylor is a frequently sought-after guest and commentator by media outlets across the Commonwealth, and we are fortunate to have him here with us today.

In addition to his role at PMA, Mr. Taylor serves as Chairman of the Pennsylvania Leadership Council. He is a member of the American Institute's Leadership Network. He currently serves as a member of the Executive Committee of the Conference of State Manufacturers' Association. He is on the Board of Directors of the Pennsylvania Steel Alliance, Foundation for Free Enterprise Education, Business Industry Political Action Committee, the Lincoln Institute for Public Opinion Research. He serves as the board president of REACH cyber charter school, an online public school providing a broad range of science, technology, engineering, and math enrichment of students. Prior to joining PMA, Mr. Taylor worked for the United States Senate and the Senate of Pennsylvania. He is a native of Huntington, Pennsylvania where I was just last weekend and a graduate of Dickinson College.

Mr. Taylor, thank you for all that you do for Pennsylvania and for your participation today. We look forward to your testimony and I yield back.

Chairwoman DAVIDS. Thank you for doing that introduction.

Mr. Dente, we are going to go ahead and get started. You are recognized for 5 minutes.

STATEMENTS OF CLAUDIO DENTE, PRESIDENT, DENTEC SAFETY SPECIALISTS; WES HAMPP, CO-FOUNDER & MANAGING PARTNER, HOLLEWAY CAPITAL PARTNERS, LLC; KIMBERLY GLAS, PRESIDENT & CEO, NATIONAL COUNCIL OF TEXTILE ORGANIZATIONS; DAVID TAYLOR, PRESIDENT & CEO, PENNSYLVANIA MANUFACTURERS' ASSOCIATION

STATEMENT OF CLAUDIO DENTE

Mr. DENTE. Sorry about that. Wrong button.

I appreciate it very much, Madam Chair. I appreciate the opportunity to participate in this conversation.

I would like to let you know first that I am a 41-year veteran of personal protective equipment and manufacturing, distribution, and design. I know nothing but this industry. I am going to share with you my journey through this experience.

I purchased a respirator manufacturing operation located in the Kansas City, Kansas area called U.S. Safety. That company had been manufacturing reusable respirators, filters, and cartridges for some 40-plus odd years. My interest in the business was because respiratory protection is a critical product in our industry and because I have been through all the viruses, and I wanted to be able to bring a product to market that was manufactured and assembled in the United States.

The effect of COVID, what happened, I was in New York when it first hit. I was traveling on business. It was in February. The news started to spread. From New York I went to Kansas and then, of course, COVID blew up. It was like something I have never seen or experienced, all of us have. Quickly, the supply or disposable N95 respirators, surgical masks from overseas, and also from domestic supply completely collapsed. Nothing was available.

Fortunately for us and our business, we manufacture reusable rubber half masks and an N95 filter in our facility. We quickly deployed a marketing campaign to the marketplace, and it became an incredible success because we were able to help not only healthcare workers but general industry for those that could keep working. However, folks, the orders were overwhelming for a company of our size. They were massive. They continued to hit us with orders every single day.

My team worked 6-, 7-day weeks, 2 shifts, 10-12 hour days. I do not know how they did it and I do not know how they still do it. God bless them. We experienced everything that you could imagine—raw material shortages, equipment breakdowns, employees coming and going. Very, very difficult. So, in summary, surge demand orders, which I had been through in the past unlike what I have seen here during COVID, are absolutely enormous. Not only for a small business but also for a big business.

And the challenges that when you have to set up and get going are equipment, which are molds. Everything I make is plastic or rubber, so we are dependent on molds and injection molding machines. We are dependent on cycle time. My product has a lot of hand assembly to it. So, you have to make arrangements to acquire those goods in a fashionable time. Fortunately, we received a grant and funding from the CARE/SPARKS program, and we have modernized our facility in a manner that I did not dream was possible

in the next 10 years. The next time you come, Ms. Davids, I think you will be quite impressed.

We also had enormous space challenges, as you can appreciate. When you have to make product of this magnitude, it is absolutely incredible. So, all of these are expenses that we have to incur. And as an entrepreneur and an owner of a business, you are fearful of committing yourself beyond when the pandemic resides.

So, a couple of recommendations that I would like to pose to the Committee are that instead of not only subsidizing people during a time, critical businesses like ours, help us hire people by subsidizing an additional wage to them, an hourly wage. Rather, this would create tax income as well and not just debt.

Staffing, of course, was a challenge to hire people. What I ask, when you identify critical businesses such as ours, perhaps we could have access to some military personnel to help us ramp up. They are process oriented, great workers, wonderful personalities, and if we could have access to people like that for a short period of time while we ramp up it would make an enormous difference for us as a business.

And then finally, financing. We want to be careful again as an entrepreneur and an owner, I do not want to extend myself beyond because it as quickly as COVID came upon us, all of a sudden it will stop and then you are stuck with the overhead, capital investment and so forth and loans. So, my suggestion would be to—of course, grants are fantastic for those that are worthy of it, but also loans in a manner that are not as challenging and maybe recognize the concerns of when the event subsides. Thank you very much.

Chairwoman DAVIDS. Mr. Hampp, you are now recognized for 5 minutes.

STATEMENT OF WES HAMPP

Mr. HAMPP. Thank you, Chair Davids, Ranking Member Meuser, and members of the Subcommittee. Thank you for inviting me to testify at this important hearing.

My name is Wes Hampp. As Chair Davids said, I am a cofounder and managing partner of Holloway Capital Partners. We are a small business investment company (SBIC). We are headquartered in St. Louis but we have an office in Overland Park, Kansas where I sit. We focus on investing in small manufacturers throughout the Midwest.

I am going to highlight several challenges with the U.S. supply chain we are experiencing in our portfolio companies and suggest a few solutions.

Challenge 1. COVID-19 exposed our country's massive reliance on China and our supply chain across nearly all industry sectors. While U.S. businesses compete successfully in a global economic environment, there are positive economic arguments for global supply chains but COVID-19 exposed an urgent need for more domestic manufacturing to reduce our reliance on imports.

Manufacturing is an interconnected ecosystem where the impacts on any one business can affect other associated businesses. The Paycheck Protection Program (PPP) was a lifesaver and helped stabilize the financial uncertainty many small businesses faced in the early days of the pandemic. Today, however, domestic supply

chains are in a state of chaos. Prices are rising, in some cases 25 percent week to week, and lead times have been extended in some cases four times longer than pre-pandemic levels. PPP allowed many small businesses to surge back but many of their larger company suppliers lost their workforces and were unable to quickly restart and return to pre-pandemic production levels which has led to domestic supply chain disruptions.

After COVID-19 hit last year, some large companies that supply products to smaller manufacturers stopped making growth investments, shuttered capacity, and even laid off employees. As demand rebounded in late 2020 and so far this year, these larger suppliers are now struggling to hire and train employees to ramp output to meet demand. In some cases, it appears that supply chain disruptions may have been an unintended consequence of limiting PPP to small businesses.

Challenge 3, our biggest challenge facing small manufacturers is labor supply. Small manufacturers are unable to find employees to fill open positions which is hindering our growth. In some cases, our companies have raised starting wages 20 percent but positions remain unfulfilled. This issue is currently more acute for unskilled entry-level positions but is a challenge for skilled labor as well.

These are the key challenges. Let me offer a few solutions.

Solution 1. Access to patient capital is critical for domestic small businesses in order to keep the U.S. competitive and strengthen supply chains. Since SBICs invest exclusively in domestic companies, and heavily in manufacturing, they are an excellent vehicle to get capital to small manufacturers. Congress should support policies that reward and encourage SBIC investments and not do anything to hinder the program's success. Particularly, lawmakers should support more equity investing in U.S. small businesses that otherwise need to rely on debt financing where in some cases equity is more appropriate.

Congress should write tax policies that encourage, not discourage, long-term investing in America's small businesses. Before Congress doubles the capital gains rate, I would implore you to consider what doing so would do to small business owners across the country, especially older entrepreneurs that are beginning to explore retirement. Small business owners build their businesses over years, even the majority of a lifetime. They typically get to sell that investment once. And when the entrepreneur sells their business it is commonly going to generate more than $1 million in income but that nest egg kind of becomes what they expect to live on for the rest of their lives. If capital gains taxes are raised, there should be serious consideration given to investments in American small businesses.

Solution 3. Our leaders in government, business, and education should work together to promote and provide opportunities to learn skilled trades through apprenticeships and technical education. Finding workers is one of the biggest problems in the manufacturing sector and it is holding back small business growth and national economic growth. Four-year college degrees are not for everyone and people can make good livings working in the trades and support manufacturing. And these types of careers should be supported and encouraged.

Thank you again for the opportunity to testify before the Subcommittee, and I welcome your questions.

Chairwoman DAVIDS. Thank you, Mr. Hampp.

Ms. Glas, you are now recognized for 5 minutes.

STATEMENT OF KIMBERLY GLAS

Ms. GLAS. Thank you so much for the opportunity to testify before you today. I am the president and CEO of the National Council of Textile Organizations and I represent the domestic textile industry and the 539,000 workers it employs. We are predominantly comprised of small businesses.

Today's focus on supply chains and bolstering our small businesses is an incredible opportunity. There are immense challenges faced by our industry as a result of this pandemic. Literally, overnight, billions of orders were canceled. And I was looking out at an industry that was really confronting bankruptcy.

In the spring of last year when PPE shortages were hitting every front line, and workers were wearing garbage bags as gowns or reusing N95 masks, our industry really stepped up. But it is important for me to highlight that the reason that these supply chains broke down was that our predominant supply for these items was in China. And Chinese subsidies, coupled with significant global demand, exacerbated by export controls placed by the Chinese on certain products and raw materials, had a cascading impact that we were reading on the front pages.

Simply put, it was like fighting a fire with a garden hose on every front. U.S. textile manufacturers quickly mobilized. Virtually overnight, our members were able to retool supply chains to make over a billion face masks, isolation gowns, and other textile components. In fact, I am in New York's garment district right now and this garment district played a significant role in retooling their supply chain.

In order to help the Nation's PPE crisis, manufacturers retooled overnight, but they had to purchase expensive equipment at a time when capital was really uncertain and at a considerable expense. In addition, industry needed to expend significant resources to ensure safe workplaces to get workers back to work and purchase the raw materials necessary to making lifesaving PPE. Please note that while PPE was important for our frontline workers, it did not make up for the significant loss of orders of normal business in our industry. Industrial expenses were vast and wide-ranging, including everything from health and safety measures, to thermometers, to more pay for workers, to bringing them back on the job. We appreciate that there are many solutions necessary for small textile manufacturers to weather the challenges of the pandemic and the crisis that we are still confronting.

For many of our small businesses, SBS programs serve an important role. Many of our companies take advantage of everything from the Paycheck Protection Program to Main Street lending, 7(a) loans and 504 loans. Our members really appreciate the aspect of the SBA loans, including the lower down payment and extended payment term. These advantages, however, are sometimes offset by other factors that disincentivize their use. And I have several key

solutions to project for the Committee, and for you all to consider moving forward.

First, we think that we need to reform our domestic procurement rules for federal purchases of PPE. Right now, we need to extend the Berry Amendment rules for our military for PPE items that are purchased by other agencies across the Federal Government. We appreciate the president's "Build Back Better" initiative to strengthen our supply chains, but we need legislation to move forward. We want to highlight that Congressman McHenry from North Carolina and Congressman Bill Pascrell from New Jersey have co-sponsored the American PPE Supply Chain Integrity Act which does just that.

In addition, we believe that there needs to be more tools and investments in small businesses to manufacture these products moving forward. We appreciate the support for the Defense Production Act, but we also need Federal protection grants and tax credits to ensure manufacturing capacity.

Chairwoman Davids, I want to highlight your bill as well. The $100 million fund set aside for small businesses is an important tool moving forward, but we need more tools moving ahead.

Further, private sector investment is important to U.S. supply chains and can be bolstered by contracting reforms that promote long-term contracts for U.S. suppliers. We need a demand signal. In fact, our industry is starting to see orders dry up for PPE. We have had 60-day contracts and 90-day contracts. We need certain set-asides for small businesses, but we should ensure that when we are providing contracts to small businesses, those companies can deliver and have the capital necessary to help the U.S. Government.

And the last recommendation I had is to ensure that the SBA loan process is streamlined and that communication is better with borrowers. During the height of the pandemic, it was difficult for some of our manufacturers to tap into the resources because they simply did not know where the paperwork trail would eventually begin.

Our industry is ready to work with this Committee. I want to amplify the comments made about workforce. We really do need more funding to help bring workers back on the job, and our industry stands ready to help this Committee in any way possible.

Chairwoman DAVIDS. Thank you, Ms. Glas.

And Mr. Taylor, you are recognized for 5 minutes.

STATEMENT OF DAVID TAYLOR

Mr. TAYLOR. Thank you, Chairwoman Davids and Ranking Member Meuser and members of the Subcommittee, thank you for the privilege of testifying today.

As Congressman Meuser was so kind to introduce me, I am David Taylor. I am the president and CEO of the Pennsylvania Manufacturers' Association. We are the statewide not-for-profit group representing the people who make things and Pennsylvania's public policy sector. I also want to thank Congressman Evans from Philadelphia, my great friend. It is good to see you, sir.

I want to express three important points. First, the workforce crisis is real and is a hard cap on America's economic growth. Second,

the Federal Government becomes a competitor to employers when it pays people more to stay home than they would earn at work. And third, Congress can help address the workforce crisis by working with the states to reinvent the existing tangle of taxpayer-funded workforce development and job training programs. And I will expand on each of those points as I go on.

Manufacturing is the sector of our economy that adds the most value, pays the highest wages and benefits, and has the strongest multiplier effect on job creation. No matter what product is being made, manufacturing takes raw materials or component parts and goes through a multi-stage process to yield a finished good, almost always consuming a large amount of energy and usually deploying some kind of chemical process. Because of that multi-stage process of adding value, manufacturing sustains not only the jobs on the plant floor but also jobs through supply chains, distribution networks, and vendors of industrial services. In that way, the major manufacturer is often the small business owner's best customer.

I know the Subcommittee is looking to examine the supply chains for small business, however the most critical input that is lacking for manufacturers today is the supply of qualified workers. Nationally, manufacturers are facing an alarming problem: our workforce is aging and retiring and there is a shortage of skilled hands to succeed them. Pennsylvania is no exception to this problem. According to our sources at the Manufacturing Institute, at any given point in time there are about 6,000 open manufacturing positions in Pennsylvania. When you couple the current shortage with the fact that some companies have more than half of their current workforce within just a few years of retirement, then we could consider this workforce problem a workforce crisis. The manufacturing sector and the workforce at large face an increasingly pressing problem: the glut of unfilled jobs due to a skills gap. As a result of employers' inability to find enough qualified new hires, businesses are not able to grow to meet current levels of customer demand. Those employers are "leaving money on the table" because they cannot find the quality employees they need to increase production capacity to be able to bid on new work, which is available. This is what I am trying to express when I say that the workforce crisis is a hard cap on growth.

Of course, to get people into the workforce, they first have to want to work. This is one of the problems of the current moment because of Congress's policy of subsidizing state unemployment compensation payments. The Federal Government was correct to respond to the needs of our citizens caused by the economic shutdown triggered by the pandemic. Many people are still dealing with both the health crisis and the economic consequences of the shutdown. The impulse to be generous is understandable, but regrettably, the Federal taxpayer subsidy to state unemployment benefits is keeping many employees out of the workforce.

One final thought that I want to share with you concerns the efficacy of the Nation's job training and workforce development programs. In Pennsylvania, roughly $2 billion dollars in state and Federal taxpayer money is spent annually on more than four dozen programs that run through at least five different state cabinet agencies. Following a 2019 audit of the state's workforce develop-

ment system, Pennsylvania's Auditor General at the time, Democrat Eugene DePasquale said, and I quote, "I think it needs to be restructured entirely. You have to envision nothing exists right now and how you would create it. None of us would have it look the way it does today."

I am convinced that there are hundreds of millions of dollars in efficiencies that could be realized if Pennsylvania, working in partnership with Congress and the respective Federal departments, could realign, rework, and move dollars between programs. The existing waiver process has been used to great effect by the state of Indiana, and I would recommend using their experience as a model for future reforms.

So thanks again for the great honor of speaking with you and I will do my best to answer your questions.

Chairwoman DAVIDS. Thank you, Mr. Taylor. And thank you to all our witnesses. We appreciate your expertise and everything you have shared today.

We will go ahead and get started with the questions. I will begin by recognizing myself for 5 minutes.

Mr. Dente, in your testimony you gave both recommendations and a bit about the story of the difficulty that you faced in pivoting and transitioning. I am wondering if you could speak specifically to the challenges that Dentec faced while searching for capital to produce the N95s during the height of their shortage here domestically.

Mr. DENTE. Thank you. Please understand, I do not manufacture disposable N95s. We manufacture reusable product. Right? So again, when the volume of orders which were massive came to us, right now I am self-funded but I was at a point where I was saying, what the heck am I going to do? We were fortunate when the CARES Act grant program came out, we qualified for that. We also qualified for a loan from the Department of Commerce for Kansas as well. Had I not qualified for those programs I would have had to go to the street, but the problem is the speed, trying to get things accomplished during a chaotic time like that, I do not know how we would have done it. Do not know how we would have done it. I hope that answers.

Chairwoman DAVIDS. Thank you, Mr. Dente.

I am going to switch over. Mr. Hampp, I know that a lot of manufacturers had to reassess their supply chains following the pandemic-related disruptions and realized that there was a lot of risk and vulnerability in the supply chains that they were making use of. I am wondering if you could tell us a little bit about the role that SBICs can play in establishing a more stable supply chain for our small and mid-size domestic manufacturers.

Mr. HAMPP. Sure. I will talk about, you know, we focus on manufacturing. And you know, as the supply chain stretched out and it became very difficult, prices are increasing regularly. Sometimes products that we would get come just in time basis were not even available. What we did was we encouraged our portfolio companies to invest in inventory. To take down as much inventory as they could as quickly as they could to get through what was an uncertain time. Again, the PPP program helped. But what happens in those situations where we have a company that needs capital to ad-

dress a short-term issue, the SBICs would typically stand behind those portfolio companies and inject capital if needed. But all of our companies were able to, through the PPP loan, keep employees employed and then they had capacity to buy the inventory more than they would normally hold to get through the situation. But knowing that you have got a financial partner in an SBIC makes making that investment easier unlike Claudio. You know, it is not all on the individual to source that capital when you have an institutional investor alongside as an investor.

Chairwoman DAVIDS. I appreciate that.

I guess in the remaining time, Ms. Glas, I would love to hear from you. You mentioned quite a bit in your testimony, and as you know, last year I introduced the Supplies Act which would provide grant funding to small manufacturers who are able to produce PPE and other emergency medical items during the crisis. I am curious if you see a role for the SBA and other Federal agencies to support domestic PPE manufacturing in the long term.

Ms. GLAS. Absolutely. In fact, our industry collectively is really seeking a long-term Federal Government plan associated with onshoring PPE production. Our industry responded, provided materials for the Strategic National Stockpile, FEMA, and Defense Logistics Agency. And with the kind of investment that you are talking about in your bill—about people being able to invest in manufacturing equipment—we can be a globally competitive industry. There is no doubt our industry has become much more efficient since March of last year when they were making products for the first time. They want to invest in equipment in their manufacturing facilities to be more globally competitive, but they also want a strong demand signal. We think working with the Small Business Committee here; the SBA leveraging those loans or grant opportunities; and working with your agency partners across the Federal Government on procurement policies and long-term contracts will ensure that this small business community is supported in the long term, so that we are bringing these supply chains home and reshoring essential production like PPE.

Chairwoman DAVIDS. Thank you, Ms. Glas.

And thank you to everyone who answered my questions. My time is now expired.

The Ranking Member, Mr. Meuser, is now recognized for 5 minutes.

Mr. MEUSER. Thank you again, Madam Chair.

Pennsylvania, my home state, the great Commonwealth of Pennsylvania, is known as a manufacturing state. We have a long history of coal, steel, garments is mentioned. Concrete, masonry, fabricators, candy, beer, crayons, guitars, batteries, airplanes to name a few. We have, however, suffered over the last several years or over the last we will say 40 years and for the last several years we made somewhat of a comeback.

Mr. Taylor, you and I both know well the statewide burdens that exist in Pennsylvania related to taxes and regulations. Can you speak about the importance of natural gas on how natural gas creates competitiveness for our small and large manufacturers?

Mr. TAYLOR. Yes, sir. I will be glad to.

Mr. MEUSER. As well as provides what is necessary for manufacturing?

Mr. TAYLOR. Yes, sir. I will be glad to do my best with that.

So in 2005, the Marcellus Shale Play was discovered and starting 2008, production began in earnest. And the discovery really is world historic. We are talking about trillions of recoverable feet of natural gas. And so this has helped very much to power our economy, but in thinking about what the other testifier said about the need to reshore supply chains, that Pennsylvania, along with having the methane, the natural gas that is used for fuel and for electricity generation and industrial furnaces, that we also have abundant natural gas that comes with natural gas byproducts—ethane, butane, pentane, propane, and natural gasoline and that there has been an $8 billion investment by Royal Dutch Shell in Western Pennsylvania for a facility to produce polyethylene, which again is at the top of a value chain that can derive every kind of plastic, Styrofoam and rubber and every kind of coating in the marketplace. So that domestic source of this industrial input I think is critical to making our supply chains resilient and price competitive domestically.

Chairwoman DAVIDS. Thank you, Mr. Taylor. It appears as though our Ranking Member might have had a technical difficulty and dropped off. I think that we will probably come back with approximately 2 minutes 40 seconds remaining for the Ranking Member's questioning and then hopefully he will get to get back on this so he can finish his questions.

So I think what we will do is go next to Rep. Marie Newman from Illinois. You are recognized for 5 minutes.

Ms. NEWMAN. well, thank you, Chairwoman. And thank you, Ranking Member. I hope you come back soon.

So thank you to all our guests this afternoon. It has been great hearing your testimony. And thank you for offering solutions. We love it when guests come with both problem and solution, so thank you for that.

I am going to I think start with Ms. Glas because I think she is the logical person to ask this question. But I would open it to others if they have commentary.

In Illinois 3, we have an unusually high concentration of manufacturers, and I work with a partner organization called IMEC here in Illinois. And I think it is well-known in the industrial Midwest, we have a lot of micromanufacturers. So in my district, about 70 percent of all manufacturers are under 20 employees. And what that means is that that is a huge employment base but we are particularly productive. And so with that I have a couple of questions around that.

Those are the types of manufacturers that have kind of suffered the most around things like reshoring. What I mean by that is that I am a fan of bringing everything back here and making sure our workforce and our production process, our supply chain and our partners stay here. Some of the things that I think are helpful in that mix are incentivizing business partners. And so I guess I wanted to hear what your thoughts are on incentivizing the customers of our micromanufacturers so that they buy here, stay here,

workforce is here, all of those good things. So I will put myself on pause and I would love for you to give us your thoughts.

Ms. GLAS. Congressman, thank you so much for that question. You know, it is clear to me that you are very proud of the work that is being done in your congressional district and the ingenuity that exists with a lot of those small manufacturers in a really dynamic period of time.

When you look at the customers for PPE, the biggest buyer is not the U.S. Government. It is an important buyer, okay, and we need to make sure we get all those roles right and help reshore production. But I think a lot of our manufacturers, similar to yours, are looking to sell their products in the private marketplace—to hospitals, to other kinds of customers. And are there ways that Congress can incentivize the customers or even incentivize the actual manufacturers to produce these products or purchase these products. We, as an industry, have all collectively been talking about the fact that there may be unique arrangements that can be made with hospitals and nursing homes and others that would get an incentive for buying Made in the USA product or get a better Medicare-Medicaid reimbursement rate as a result. I think this is a time for creative thinking, similar to the micro-manufacturers in your district who all probably came together in unique partnerships during this period; to think about what it would take to actually bring some of these production teams on shore and how to incentivize the private marketplace.

Ms. NEWMAN. And if any of our other guests have any suggestions, I am all ears.

If you would like to go, Claudio, that would be great to hear from you.

Mr. DENTE. I am sorry; I keep pressing the button up there, not down there. I apologize for that, Representative Newman, thank you. Great comments there, Kim.

The issue is not the end user. And I hope there are no distributors on this call. Distribution is what I sell through, and they are the people, the carrier to move product to the end-user. The distributors are the challenge because they are the ones that do not want to disrupt their current supply chain which may be overseas. Right? So, your idea, Kim, about incentivizing the end-user is great.

So, think about it like this: in our industries, in all industries, there are buying groups. And buying groups create and collect rebates. So why not create some type of rebate program, some type of funds that go back to the end-user that rewards them for working with American made manufacturers. That is my comment.

Ms. NEWMAN. Great. Any of our other guests like to share any thoughts?

Mr. TAYLOR. Yes, if I may.

Ms. NEWMAN. David.

Mr. TAYLOR. Thank you very much.

The kind of smaller companies that you are describing, very important job creators, very important part of the overall ecosystem of manufacturing. The smaller companies are more vulnerable to disruptions and to pitfalls. One of the things about the pandemic that has been hard to see is that you had companies that really

stuck their necks out by retooling to go from the product that they knew to do something different that was needed to cope with the pandemic, whether it was the distillers putting out hand sanitizer or there was a company in Pennsylvania that would make airplane parts and they converted over to make ventilator parts. These companies took a risk and one of the things that they really need from Congress is some kind of safe harbor for protection against predatory lawsuits. And that is something that in good faith I would like to see Congress take up.

Ms. NEWMAN. When you say "predatory lawsuits," give me an example, David.

Mr. TAYLOR. Well, I mean, just being exploited——

Chairwoman DAVIDS. The gentlelady's time has expired.

Ms. NEWMAN. Oh, okay.

Mr. TAYLOR. Okay. Well, I will do my best to respond just to say that opportunistic, inevitably when you are doing something new you do not get it 100 percent right the first time.

Chairwoman DAVIDS. Mr. Taylor, thank you for the follow up. Thank you.

Ms. NEWMAN. Thank you, Chairwoman. Thank you, Chairwoman.

Chairwoman DAVIDS. Thank you. And we are actually going to go back to Ranking Member Meuser who has returned. I believe you had about 2 minutes and 45 seconds left.

Mr. MEUSER. Thank you, Madam Chair. I apologize about that operational difficulty.

So Mr. Taylor, thanks for your answer related to natural gas. Obviously, very important from a competitive standpoint as well as manufacturing via the packer plants.

At the Federal level, what can we do? You brought up workforce development. On a Federal level, what are your suggestions providing for a stronger, more available workforce availability, as well as comment on do you believe that manufacturers who are not being able to bring their workforce into their operation today will invest in robotics and other machines so as those manufacturing jobs could be done forever if they do not get fulfilled within the next year?

Mr. TAYLOR. Okay, Congressman, I will try to respond to that. Certainly, the trend towards automation continues at pace. And new technologies enable manufacturers to innovate and increase their operational tempo. And so as a result of those technology efficiencies that you see the manufacturing workforce tighten but that those jobs that remain become much more valuable. You know, certainly to have a pro-growth, pro-production agenda for American manufacturing, valuing the way that manufacturing is a positive dynamic for the quality of life for our citizens, certainly in the communities where a manufacturing entity is located, they are also, along with being major employers they are also major taxpayers which makes them important to state and local government as well. So it is just the whole spectrum of competitiveness and having our Federal Government recognize the contribution of domestic manufacturing and to support it through all of those competitive fundamentals. As for the workforce issue, I have got to say it is the phoniest most multifaceted challenge that we face. I do think that

the one opportunity that is before us as I mentioned, is working to reinvent our highly fragmented job training and workforce development system. If Congress would partner with the states to help to rationalize that, and I am not just asking for the feds to block grants although that would be awesome, but to work in partnership to allow the state authorities to realign the program, to move money between the silos, I think that there are huge savings that could be realized. And again, we could get more bang out of what is being spent without having to increase expenditures.

Mr. MEUSER. Thank you.

The plan to increase corporate net income tax, income taxes, capital gains tax, what effect will that have on U.S. manufacturing?

Mr. TAYLOR. It is very negative. And I would say that there were two really positive things from the previous administration's tax changes. Number one, bringing the rate down to just slightly below the OECD average, that that greatly improved competitiveness. And also, that there was an existing penalty as it were for U.S. companies that earned profits overseas that prevented them from bringing that money back to the U.S. I actually know of one instance where a company in Minnesota, it was easier for them to invert and become a foreign company to be able to reinvest their overseas earnings back in the U.S. and that is just perverse. We do not want that. We want American global corporate leadership. And so I would argue very strongly against changing the improvements that were recently made.

Mr. MEUSER. Thank you. I yield back, Madam Chair.

Chairwoman DAVIDS. Thank you. The Ranking Member yields back.

And next I would like to recognize Rep. Evans for 5 minutes.

Mr. EVANS. Thank you. Thank you, Madam Chair. Thank the Ranking Member. It is good to see Mr. Taylor. It is a pleasure.

Ms. Glas, you stated that the U.S. needed stronger workforce training programs. What percentage of textile manufacturing businesses provide on-the-job training? Would on-the-job training be more flexible with government assistance? And what tools do textile manufacturers need to do more recruiting?

Ms. GLAS. This is a quintessential and timely question, Congressman Evans. You know, actually, business is starting to come back but we simply do not have the workforce to fulfill the orders, which is a missed opportunity for our industry. Our industry does provide onsite worker training. We do heavy recruitment at technical colleges. A lot of our manufacturers do not have 4-year degrees. There is a pathway forward for good paying jobs in our field, but we are having a hard time retaining a workforce in this environment. And so if there are incentives or ways to help bolster the domestic supply chain in clusters for textile manufacturers to recruit additional workers, or ways to incentivize small manufacturers to actually help pay some of their workforce an additional bonus to work during this time, those are all important tools in the toolbox. But right now it is a real challenge across our industry to retain a workforce in this environment. And part of it is because COVID has impacted manufacturers' ability. People are staying at home with their children. I mean, lives have been disrupted incredibly and it has been really hard to recruit people back into the

workforce because they have other things that are pulling at them at this time.

Mr. EVANS. Thank you.

I yield back the balance of my time, Madam Chair.

Chairwoman DAVIDS. Thank you. The gentleman yields back.

Next, I would like to recognize Rep. Van Duyne for 5 minutes.

Ms. VAN DUYNE. Great. Thank you.

I think all the panelists today have hit on issues with the workforce. Mr. Taylor, you made a point in your testimony that small employers are having to compete with the Federal Government for workers thanks to the luxurious unemployment benefits that are being offered currently. So not only is the Federal Government hurting employers with extended benefits, but they are also stagnating the workforce on learning skills that they will eventually need to return to work. Can you elaborate on how the extended unemployment benefits have affected hiring and the workforce? And can you also explain a little bit about your concern with workers not having the skills needed when they do return to work?

Mr. TAYLOR. Yes. I will do my best to respond to that. And again, it is an unintended consequence I am sure, but that impulse to be generous of raising unemployment benefits beyond what people would earn if they returned to work, it is keeping people on the sidelines. It is essentially making the government a competitive employer, like you are outbidding the market. Surely there is a precedent in history with the New Deal three letter agencies to give unemployed people work. But at least in those instances they were actually engaging the program participants. That they were doing work. They were hopefully upgrading their skills. They were at least keeping current and would have something that they could list on a resume that employers know the longer somebody is on the sidelines the more their skills degrade, the longer that gap comes on their resume and the more difficult it is for somebody to reenter the workforce.

Ms. VAN DUYNE. I appreciate that.

It is also evident by the testimony we have heard today that small manufacturers, while agile and highly resilient, has faced a tough time during COVID-19. President Biden has proposed increasing corporate taxes among other tax hikes.

So Mr. Taylor, how would increased taxes affect small manufacturers?

Mr. TAYLOR. Well, I mean, in Pennsylvania, about 80 percent of our manufacturing employers, they are not C corporations. They are S corps or LLCs or partnerships. So the higher corporate tax rate again would hurt the big fish in the ocean but because of supply chains and distribution networks, those smaller companies that are suppliers or vendors or part of the distribution for the major manufacturers, they would see less business.

In my lifetime, the example, it would be when Bethlehem Steel left Johnstown. And that not only do you lose that major employer, but because so many of the smaller businesses were part of that ecosystem as suppliers, they were part of logistics, you know, forklift and warehouse jobs, you know, people who do payroll or HR or legal services or any of those things, if you lose what happens on the plant floor, all the rest of it goes away. And so with our eye

to competitiveness, especially with reshoring in a very demanding global marketplace, I would recommend strongly against raising the U.S. tax rates.

Ms. VAN DUYNE. I appreciate that also.

Also in your testimony you mentioned the potential to cast a wider hiring net, including those that had been incarcerated before. Are there any regulatory burdens that make it difficult to hire these types of workers and can they be changed to allow employers to cast that wider net?

Mr. TAYLOR. Well, that is a great question and I really believe it is the question of our time. I want to stay in my lane here. I am an advocate in Pennsylvania on state public policy but I would ask our Nation's leaders to look to Pennsylvania because we have made a lot of progress. And that in particular, our secretary of corrections, John Wetzel, has been a real leader with corrections reform. Secretary Wetzel is, himself, a former corrections officer so he has walked the block. He was the only African American in Governor Corbett's cabinet. He is now the only Republican in Governor Tom Wolf's cabinet. And so there really is a bipartisan consensus on this. And that is the upswing.

I remember being at a company out in Allegheny County and most of their workforce is ex-military. They have very tough standards and that they were one of those companies leaving work on the table because they could not find enough new people. And it was the owners there who said we are going to have to cast the net wider. We are going to have to do better. And so this is a moment where everybody needs to level up. But if we do it, we can have real social progress because the jobs in manufacturing that go wanting are really good paying, family sustaining jobs with great wages and benefits and pensions. And so I do not have all of the answers to know how we can make that happen. Maybe Representative Evans and I need to work on this together because we need to find a way to get those citizens who have been outside the workforce, who have not succeeded in our society. This gravitational pull of demography, because there are more jobs available than people looking for work, this should be the time when we help to bring those marginalized folks back into the workforce, into productive living, and into the dignity of work and the real sense of identity that can come from having a profession and still trade.

Ms. VAN DUYNE. Thank you very much.

Chairwoman, I appreciate that you extended time.

Chairwoman DAVIDS. Thank you, Rep. Van Duyne. The gentlelady yields back.

First of all, I would like to say thank you to all our witnesses for taking the time, for joining us today and sharing your expertise. Your testimony has certainly given the Subcommittee members valuable insight into the problems that have been created because of the pandemic. And particularly for our small manufacturers and the challenges that they are facing moving forward. The pandemic has taught us a hard lesson in the value of domestic manufacturing and a robust supply chain. Today, we continue to feel the effects of supply chain disruptions and shortages on our economy. And we obviously want to avoid a repeat of this situation which means we have to find ways to empower small manufacturers. One of the

most common sense ways to do that is by ensuring that they have ample access to affordable capital, and I hope today's hearing has shed light on critical SBA lending programs. And I am looking forward to working with all of you to find ways to improve them.

I would ask unanimous consent that members have 5 legislative days to submit statements and supporting materials for the record.

Without objection, so ordered. And if there is no further business to come before the Committee, we are adjourned. Thank you very much.

[Whereupon, at 2:03 p.m., the subcommittee was adjourned.]

APPENDIX

COMMITTEE ON SMALL BUSINESS SUBCOMMITTEE ON
ECONOMIC GROWTH, TAX, AND CAPITAL ACCESS REMOTE HEARING

April 27, 2021

Subject: Written Testimony – Claudio Dente on Behalf Of Dentec Safety Specialists Corp.

Dear Committee Members,

April 26, 2021
Subject: Written Testimony – Claudio Dente on Behalf Of Dentec Safety Specialists Corp.
Dear Committee Members,
I greatly appreciate the opportunity to participate in such an important hearing of this nature particularly during a time as difficult as we are experiencing because of COVID-19. I have been asked to share my experience as a manufacturer for what has been identified as a critical PPE product for pandemic events.
COMPANY HISTORY
I acquired the assets of a respirator manufacturing operation called US Safety located in Lenexa, Kansas in March of 2014. I had a long-standing relationship spanning twenty-seven years acting as their master importer for Canada. US Safety was one of the originating manufacturers of reusable respirators made of various elastomeric rubber materials as well as chemical cartridges and various types of particulate filters that are all NIOSH approved. Since the acquisition, I have invested in new product development to expand the product offering including additional NIOSH approvals. Also invested in new moulds and injection moulding machines. I have remained committed to continuing to manufacture and assemble our products in Lenexa, Kansas and to source our raw materials from US manufactures. I worked through all the pandemics since SARS and believed the respirator business would be a critical product because of future viruses and to help reduce the markets dependency on foreign supply. My objective was to offer an alternative to foreign suppliers for a product that offers unique features, great comfort while remaining competitive to foreign manufactured competitive products. Please visit our website should you wish to see the kind of products we produce.
https://www.dentecsafety.com/home_us.htm
COVID-19 IMPACT
I was travelling in New York in February of 2020 when the news of COVID-19 was announced. I left New York just as the city was starting to announce how serious COVID was becoming. I flew from New York to my factory in Lenexa, Kansas to meet with our team and then flew home. That was the last time I was on an airplane. I have worked throughout all the pandemics since SARS however I have not experienced the challenges nor seen the devastation that COVID-19 has presented.

As the supply of disposable N95 respirators and surgical masks started to deplete from foreign suppliers, our company was targeted by distribution to supply reusable respirators. Fortunately for us, we manufacture our reusable respirators made of a variety of elastomeric rubber half masks and filters that are NIOSH approved as N95. We quickly created a sales and marketing campaign to explain how our reusable respirator products could replace disposable respirators. Our story was compelling because our respirators are safer by providing an airtight seal. Less expensive to use because our N95 filters are encapsulated in a plastic protective housing allowing them to last longer than disposable respirators. The enormity of orders that we started to receive were overwhelming as customers quickly came to understand our product and the benefits it would provide not only for the healthcare and frontline workers but also general industry.

I committed not to increase prices during this time. My team worked six and seven day weeks, ten and twelve hour days with two shifts. We would have hired more employees however finding good workers is difficult during normal times; especially during a pandemic such as COVID-19.

We experienced raw material shortages, equipment breakdowns, employees that would join us and would either not show up for work or quit after a week. Our facility is 19,000 square foot where we conduct production,

assembly, and distribution. We took every precaution possible to protect our team members from the spread of COVID and fortunately we only had two instances where employees contracted the virus outside of our workplace. We were able to take prevented measures to ensure the safety of our employees and continue operations. These instances caused us to close our operation for a few days per event.

Quite simply our operation was not set up to handle this kind of volume and in such a short period of time. Despite this we were able to increase our unit output (shipped product) by more then 2,000%. We would have increased it by 5,000% however we could not ship all the backorders because of assembly, equipment breakdown and raw material delays. None the less we shipped and continue to ship respirators each and everyday.

SURGE DEMAND CHALLENGES

As I understand the objective of these hearings is to discuss the financial challenges to businesses when surge events of this nature occur by creating programs to support small businesses such as ours to ramp up production during extraordinary times such as this. I will share my personal experience and what we had to deal with while we trying to build capacity to meet the new demand.

Operations such as ours produce products made of plastic and rubber that require moulds, injection moulding machines, sophisticated filter manufacturing and assembly equipment. I would like to address each item:

Moulds – We now have over 60 different moulds to produce the various parts for a half mask respirator, filters and cartridges. Production of parts in based on the cycle time of the injection moulding process such as 45 – 60 seconds depending on the number of cavities. This is the parts production restriction we must deal with. With the grant and loan funds we received we ordered additional moulds with increased cavities. If we had a four-cavity mould, we ordered an eight and so on. The time to build a mould can be between two and four months depending on the complexity of the tool. The cost to manufacture a mould , for what we produce, ranges between $35,000 - $120,000 depending on the complexity of the tool and the number of cavities.

Injection Moulding Machines – Our injection moulding machines range from 75 to 350 ton. However due to the surge demand orders, we had to outsource the moulding of many parts to moulding operations that could run 24/7 while we concentrated on critical parts production and assembly and keep up with our NIOSH testing quality control program. Moulding machines of this nature range from $50,000 to $300,000 per machine depending on size, new equipment versus used and their availability. Once you order an injection moulding machine you must then have it installed which requires space, electrical or hydraulic hook ups ranging in cost from $5,000 - $10,000 per machine. You then must arrange to have technicians come on site to set up the equipment and with travel restrictions such as COVID, this also created delays and anxieties of having someone come into our factory where we created a "bubble" for our employees. We had an understanding of their commitment to prevent the exposure of COVID into our facility.

Filter Production Equipment – Is used to produce our N95 filter which is sophisticated to manufacture. Costs range from $60,000 to $150,000 depending on the machine. Delivery and installation can take three to five months depending on the manufacturers book of business prior to your order.

Raw Materials – The is the most difficult piece of the puzzle because you must commit to the volume and pay up front during pandemics. We were often negotiating against a competitor or another operation not producing respirator products. If the surge demand continues you never buy enough but if the event subsides you can be caught with far too much inventory which, in turn, creates great stress on working capital.

Space Requirements – In our situation, we could not move the existing operation into one facility because of the cost to move the equipment and could not stop production during demand of this nature. Fortunately for us we were able to lease another building five minutes from our existing facility where we had to commit to a three year lease. With the addition of this facility, we turned our existing facility into parts production and the new location into assembly, warehousing, and distribution.

All of the above created very large capital requirements however it also has caused to me make commitments that will be in place well beyond when COVID-19 subsides. This is the danger in ramping up for surge demand orders such as this. My objective was that we would be able to convert customers from foreign suppliers to support American made products which we believe has happened. The obvious benefits for the State of Kansas and the USA are increased tax revenue and jobs for US Citizens.

You cannot ramp up quickly enough when a pandemic such as COVID-19 arrives. No one will sit on equipment, raw materials and make space commitments in hopes that another event of this nature occurs. It is not financially sound particularly for small business such as Dentec Safety Specialists. The following are ideas I would like to propose to the Committee.

TARGET KEY CRITICAL BUSINESSES

To prepare for the next pandemic, I believe that Governments, both Federal and State, should target businesses that already produce critical products such as respirators, ventilators, etc. Meet with them to understand what funding they would need to ramp up production and if they would be interested in participating in a project such as this. This type of project is not for the faint of heart. A company that is already in the business of producing a critical product is more understanding of what is needed to ramp up than a company that has no knowledge of the product or challenges they may encounter.

More importantly a company that is in the business of producing a critical product also has an existing customer base that they can sell to when the pandemic subsides. COVID-19 has created a patriotism unlike I have ever seen before to support made in America products. We must do everything possible to continue this drive to reduce our exposure to having insufficient supply of product from foreign sources as they have their own people to take care of understandably.

Our Governments must do everything possible to ensure we do in fact remain committed to supporting US production for the future and cannot allow this interest to subside as COVID-19 subsides. If companies that manufacture critical products in the US are not interested in participating in this initiative then a call to action to other manufacturing operations to produce the critical essential products by converting their existing operations or starting up a new operation. However, speed to bring product to market must be the priority but it is also the biggest challenge.

EARNED WAGE SUBSIDY INCENTIVE (EWSI)

Products such as ours require a great deal of assembly by hand which cannot be automated. During the pandemic the Governments provided wage subsidies to individuals that were put out of work because of COVID due to mandatory closings. Critical Essential Businesses (CEB) such as ours had great difficulty in hiring staff during this time when surge demand occurs. Individuals that qualified for the wage subsidy chose to stay home as their income was somewhat unchanged. A suggestion would be to offer what I call an "earned wage incentive subsidy" to individuals to seek out employment at companies such as ours. The idea would be for the Governments to pay these individuals some thirty to fifty percent of the hourly wage being offered provided during a period of time. The individuals would have to submit forms to prove they worked at a EWSI business and would be paid directly by the Governments. Thus the term "EARNED". Rather than paying someone to stay at home, this would provide incentive and reward individuals for participating to help critical essential businesses provide product or services during challenging times such as a pandemic. The Governments would earn taxes on the additional hourly pay which would help reduce the net impact to national debt.

COMMITTEE ON SMALL BUSINESS SUBCOMMITTEE ON
ECONOMIC GROWTH, TAX, AND CAPITAL ACCESS REMOTE HEARING

STAFFING

As noted above, products such as ours require a great deal of manual assembly that cannot be automated. The process to find, attract, hire, and retain employees during times like this are very difficult. To assist companies such as ours that are deemed "Critical Essential Businesses", a suggestion would be to allow us access to military staff to set up a new operation, assemble and manufacture product for a period of time. In general terms, military personnel are well trained on a variety of duties and mechanically inclined. This would provide quick access to employees for small businesses with greater skills including ; work ethic, process oriented, organized, focus, technically capable and driven to support their people, I suggest a fee be paid by companies that use this type or personnel based on a formula that pays the minimum wage plus a reasonable percentage directly to the Government for each military personnel used by the CEB. Again, this would reduce the net impact to the Government's debt and provide great assistance to CEB companies in dire need of employees to produce and assemble product.

FINANCING

Capital intense projects of this nature during normal times are well planned and thought out by the companies as a natural course of business. However, committing to funds of this nature without the security of knowing the business will remain viable when the pandemic subsides is the concern for a small or large company.

Loans in the form of interest free, guaranteed, forgivable or grants should be considered to support initiatives of this nature. However, as an entrepreneur myself, my concern would focus on the financial impact to my business after the pandemic subsides. If I choose to participate in a project of this nature, I will require the assurance that I would not be burdened with the overhead should the order volume die off as it did during SARS, HIN1, etc. I have seen this first had many companies were on the brink of collapsing or folding altogether.

One of the ways Governments can assist small companies such as ours would be to provide orders to ensure the supply of critical product to protect those designated as critical workers after the pandemic subsides. This would be in addition to the funding offered to small businesses.

As reported in the media recently, disposable respirator and mask manufacturers that ramped up in the United States are preparing to terminate some 2,000 workers they hired in these new operations because they have no business to sell their products. They thought they would receive Government orders, but they did not for whatever reason. In addition, they are new entries into this supply channel with no existing distribution relationships. Basically, they ramped up production, to help manufacture much needed product however they cannot move the inventory because they have no distribution. This is the danger business faces during times such as this.

SUMMARY

There is no easy answer however based on my personal experience and opinion, I believe it should be a combination of financing and Government orders to help companies such as Dentec Safety participate in initiatives of this magnitude. As bad as COVID-19 is and continues to linger, the fear is what will the next one be like?

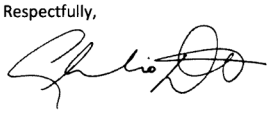
- Dentec, and small companies like us, have enormous PPE industry knowledge about Respiratory Diseases caused from biological events like COVID-19; and more from silicosis and other hazards faced by Industrial, Commercial, and Military related workers.
- Dentec has a 40 Year relationship with NIOSH and even has a semi-annually audited laboratory and operations. Most pandemic-only makers will never invest in this type of technology.
- Dentec will continue to produce PPE Equipment long after the COVID-19 pandemic is over and "Pandemic Suppliers" abandon the manufacture of essential goods to move on to their next entrepreneurial venture. Dentec will be in the most optimal position to support the United States when the next pandemic appears, or the next hurricane or other natural disaster occurs and assistance is needed to protect

workers or FEMA, or when the next Deep Water Horizon event takes place. This is our charter and our focus and, most of all, our passion; to protect people.

Thanks to the Committee members for involving me in this hearing and hope you found my comments of value.

Take care and be safe!

Respectfully,



Claudio Dente
President / CEO

Statement for the Record

By Wes Hampp
Founder and Managing Partner, Holleway Capital Partners,
Overland Park, KS

Hearing Entitled, "Supply Chain Resiliency and the Role of Small Manufacturers"

U.S. House Committee on Small Business
Subcommittee on Economic Growth, Tax, and Capital Access

April 29, 2021

Chair Davids, Ranking Member Meuser, and Members of the Subcommittee, thank you for inviting me to testify at this important hearing.

My name is Wes Hampp, and I am a Co-founder and a Managing Partner at Holleway Capital Partners ("Holleway"). Holleway is a Small Business Investment Company ("SBIC") founded in 2018 by my partner Holly Huels and me that focuses on supporting the growth of small manufacturing businesses. While we are technically a first-time fund, the two founding practitioners each have been in the SBIC program for over 20 years and have built their careers investing in American small businesses. My partner Holly was the first woman chairperson of our trade association, the Small Business Investor Alliance (SBIA), and Holleway is one of the small but growing number of SBICs co-founded by a woman.

After working inside of larger institutions for 20+ years, Holly and I decided the time was right to take an entrepreneurial path, using our SBIC experience, investment knowledge, and track record to start a new Midwest-based fund. I am excited to talk about our business model and the SBIC program, which has allowed our team to stay focused on providing capital to small businesses in the manufacturing sector and navigating them through growth and increased employment, including during the ongoing COVID-19 pandemic.

My testimony provides fuller details about these key points I want to highlight regarding supply chain resiliency and the role of small manufacturers:

- COVID-19 exposed several key weaknesses in U.S. supply chains that need to be addressed in order to reduce our over-reliance on foreign goods to produce the critical products we need.
- The SBIC program is a vital source of patient capital (particularly equity capital) for small businesses to help them grow and create jobs.

Holleway's Investment Strategy and Criteria

Holleway is headquartered in St. Louis, MO with an office in Kansas City, KS. We focus on investing in small manufacturers and distributors of industrial products in the middle of the country, including the Midwest, Plains, Rocky Mountains, and the South.

Over the last 25 years, the principals of Holleway have invested in over 50 companies, with the vast majority of investments in small manufacturing concerns. We have retained or created thousands of jobs over our careers, many in smaller communities throughout the Greater Midwest. We have lived through several economic downturns, including the Great Recession, and now we can add a global pandemic to our library of investment experiences.

Some examples of recent small business investments include a manufacturer of wildland firefighting equipment and apparatus based in Arvada, CO, an industrial electronics manufacturer based in Detroit, MI and an overhead door distribution and installation company based in San Antonio, TX. All of our companies were impacted by COVID and have experienced international and domestic supply chain issues.

SBIC Program Overview

SBICs are an American success story and an example of a successful federal public policy that aligns the power of private markets with the public interest of job creation and economic growth. Congress declared in its original authorizing legislation that the SBIC program should "stimulate and supplement the flow of

private equity capital and long-term loan funds which small business concerns need for the sound financing of their business operations" while also stimulating the national economy and job growth.[1]

As of the first quarter of 2021, the SBIC program has grown to a combined SBA guaranteed and private capital program exceeding $33 billion, an increase of 19 percent since 2016 and the highest level ever in program history.[2] SBICs completed $630 million in financings to small businesses in December 2020, which was a 25 percent jump from $500 million in December 2019.[3]

At the end of fiscal year 2020, the SBIC program included more than 300 licensed funds.[4] Over the last five fiscal years, on average, SBICs have invested nearly $6 billion annually in over 1,100 small businesses, creating or sustaining nearly 109,000 jobs annually.[5]

A recent independent study prepared for the Library of Congress found that SBIC-backed small businesses created almost 3 million new jobs and supported an additional 6.5 million jobs over the 20-year period of their study.[6] The program is also structured so that the private capital is in first-loss position. This is an added safeguard to protect taxpayer dollars. Because of this structure, the SBIC program has operated at zero subsidy for over twenty years. A recent study on the SBIC program by the American Action Forum called it "one of the most successful public-private partnerships in U.S. history."[7]

Weaknesses in U.S. Supply Chains

Over-Reliance on Foreign Supply Chains and the Need to Invest in American Manufacturing

The COVID-19 pandemic exposed glaring weaknesses in U.S. supply chains and the need to have more domestic manufacturing. 60 years ago, the United States was the manufacturing engine of the world, but in 2020, we were unable to make adequate supplies of paper masks. A year after the pandemic, there are still mass shortages of simple manufactured products, like wood fence posts, as well as advanced computer processing chips. Manufacturing competitiveness and innovation does not happen in a vacuum or happen on demand. The entire manufacturing ecosystem needs to be supported because innovation comes from doing and not by government or corporate command. We need policies that focus on supporting manufacturing with an emphasis on small business investment. Tomorrow's large and advanced manufacturers are small businesses today.

COVID-19 exposed our massive overreliance on China's supply chain, not just for PPE and medical supplies, but also in nearly all industry sectors. When COVID-19 disrupted supply chains from China, we faced and still face massive disruptions at home. U.S. businesses compete successfully in a global economic environment and there are positive economic arguments for global supply chains, but the COVID-19 pandemic exposed an urgent need for supply chain diversification and more domestic manufacturing of all types of products to reduce our reliance on certain imports critical for public health and necessary to

[1] Small Business Investment Act of 1958, Pub. L. 85-699 (Aug. 21, 1958). 15 U.S.C. 661.
[2] *An Update from SBA's Office of Investment and Innovation,* presentation to SBIA Outlook 2021 Virtual Conference at 2, https://www.sbia.org/wp-content/uploads/2021/02/SBIA-Outlook-SBA-Update-Presentation-HANDOUT-1.pdf (last visited Feb. 7, 2021).
[3] Id.
[4] SBA – *SBIC Program Overview* at 2 (Sept. 30, 2020). Accessed Feb. 1, 2021 (unpublished).
[5] Id. SBA estimates jobs created or sustained using "The 1999 Arizona Venture Capital Impact Study" (confirmed by the DRI-WEFA study of 2001) whereby one (1) job is created for every $36,000 of SBIC investment (adjusted for inflation).
[6] Paglia and Robinson, Measuring the Role of the SBIC Program in Small Business Job Creation, Report for the Library of Congress, at 4 (January 2017) <https://www.sba.gov/sites/default/files/articles/SBA_SBIC_Jobs_Report.pdf>.
[7] Wade, The Small Business Investment Company Program: A Primer (March 2021) https://www.americanactionforum.org/insight/the-small-business-investment-company-program-a-primer/

sustain our economy. The nation that built its way out of World War II needs a manufacturing base that is robust and not hollowed out.

At Holleway, our portfolio companies do not source a large quantity of products from overseas suppliers, however, the products which they do source overseas have become more expensive, have longer lead times, and are seeing more quality issues. COVID-19's disruptions have illustrated the risk of reliance on overseas supply chains. While it may be cheaper to source products overseas, the pandemic illuminated a trade-off between costs and sourcing products from thousands of miles away.

Symbiosis of Small and Big Businesses – The Mismatched Recovery

Manufacturing is an ecosystem with small and large businesses interacting and mutually benefitting from each other. Large U.S. businesses contract with smaller domestic companies. Likewise, small businesses buy products and materials from large businesses. Small and large need each other to operate and are part of a mutually beneficial domestic supply chain. As a small business investor, we are focused on small manufacturers, but we know the critical role large companies play as both suppliers and customers for our small businesses. Both large and small need to be healthy.

Similar in nature to the global supply chain issues discussed, domestic supply chains are also in a state of chaos. Prices are rising, and lead times have been extended. In some cases, we are seeing prices rise 25% week to week, inputs simply not available for months instead of weeks, or in some cases not available at any price for the foreseeable future. Anecdotally, we hear this is generally COVID-19 related in a few ways. First, international supply chain issues. Second, some companies are actually seeing more COVID-related illness among the workers in the plants in 2021 than they did in 2020. Third, larger companies that supply products to our smaller manufacturing companies stopped making growth investments as COVID-19 hit last year, shuttered capacity in anticipation of a global recession, or even laid off employees given the uncertainty. As demand rebounded in late 2020 and so far in 2021, these larger suppliers are now struggling to hire and train employees to ramp up output and meet demand. As a result, prices are going up, and even after a year and at this stage of the recovery, lead times for some orders at our portfolio companies are 12 weeks or longer (which is at least *four times longer* than pre-pandemic), creating serious delays and disruptions.

It should be noted that the availability of financing through the Paycheck Protection Program (PPP) helped stabilize the financial uncertainty many small businesses faced in the early days of the pandemic. PPP loans/grants were a small business lifesaver that kept employees paid – but equally important – kept employees connected to their small business employers. Maintaining this connection helped many small businesses survive and left them in a position to quickly restart and recover because their workforce was intact. Without PPP, many small manufacturers we work with would have laid off employees and struggled to rehire in order to restart. However, the supply chain disruption was an unintended consequence of limiting PPP to small businesses. PPP allowed many small businesses to surge back, but many of their large company suppliers had lost their workforce and were/are unable to quickly restart and return to pre-pandemic production levels. Without the subsidy to make an anti-economic decision to keep paying their workforce during a prolonged economic stoppage, large businesses were forced to cut their workforce, which led to domestic supply chain disruptions and a severe reduction in productivity nationwide of the raw materials and upstream products that many of those small manufacturers needed. PPP was a smashing success for small businesses and employees of small businesses, but there was no similar tool available to upstream manufacturers.

Labor Shortages

The biggest challenge facing our small business portfolio and across the small business space is labor supply. These small manufacturers are unable to find employees to fill the open positions, which is hindering growth. This issue is more acute for unskilled/entry level positions, but it is a challenge for skilled labor as well. In some cases, our companies have raised the starting wages 20%, and yet open positions remain unfilled. Increased unemployment insurance payments appear to have created a disincentive for labor to return to the workplace. Whether this is a result of current unemployment policy or just not enough workers in this country, this is a material issue for the long-term viability of manufacturing in the US.

I should note that in addition to good salaries, we prioritize the health and safety of our employees. From the outset of the pandemic, Holleway did everything we could to provide PPE for our portfolio's employees and did our best to maintain social distancing in order to keep people working. We made sure people were sent home and isolated for the required amount of time, with pay, if they were exposed to COVID-19 or tested positive.

Solutions to Supply Chain Challenges in Manufacturing

1. **Ensuring that Small Businesses Have Access to Patient Capital (with a Particular Focus on Equity Capital).**

Access to long term "patient" capital is critical for domestic small businesses in order to keep the U.S. competitive and strengthen supply chains. Businesses that have long term capital are far more likely to be able to adapt to changing markets and to survive economic downturns.

Since SBICs invest exclusively in domestic companies (and heavily in the manufacturing sector) and are largely prevented from offshoring because they may not pursue a strategy that increases domestic unemployment , they are an excellent vehicle to get capital to small manufacturers. SBIC also are unique in that instead of concentrating their investments in the metro areas, SBICs invest in all geographic regions of the country – big cities and small towns, big states and small states. Congress and the Administration should support policies that reward and encourage SBIC investments and not do anything to hinder the program's success, such as:

- timely appointment of a leader for SBA's Office of Investment and Innovation ("OII") – the position has been open for over 6 months – to supplement the strong career leadership already present within OII
- providing adequate staffing (SBIC frontline regulators are managing over 45 SBICs per regulator when they are supposed to manage about 10 – a 4.5X staffing overload),
- licensing more small SBIC funds in underserved geographies,
- continuing to streamline the SBIC licensing process (particularly for repeat licensees),
- providing adequate resources for the SBA OII's Information Technology (no one in the private sector would be managing $33 Billion with an Excel spreadsheet and an Access database),
- encouraging SBA to get comfortable with more equity-oriented investing,
- removing unintentional barriers to inclusivity by having more clear, objective licensing standards and by making decisions based on the official record; and
- releasing an SBIA annual report with industry sector, geographic region, and performance data.

Congress and the Administration should also support more equity investing in U.S. small businesses like manufacturing because it encourages long-term, patient capital investments in those companies that

otherwise rely on debt financing. Debt financing requires interest payments, which takes money out of the business, but equity financing lets businesses use all their available cash to grow the business in exchange for equity ownership. The SBIC program is more debt-oriented, with less emphasis on equity investing. Congress should provide more tools to allow for more equity investments.

2. Pro-Small Business Tax Policy - Capital Gains Taxes

Congress should write tax policies that encourage, not discourage, long-term investing in America's small businesses and small manufacturers. Doubling the capital gains rate for anyone with an annual income over a million dollars would be a major setback for entrepreneurs or those that are considering starting a small business, particularly a manufacturer. Small business owners build their small business over years (and in some cases the majority of their lifetime), and they typically get to sell that investment once. When they sell their business, they take the money and either retire or start a new business. Manufacturing has significant start-up costs and often expensive machinery. When an entrepreneur sells their business, they are commonly going to have more than $1 million in income for that year – and it may be all the money they may have to live on for the rest of their life. Unlike government employees, most small business owners do not have pensions, and many have the eventual sale of their business as nearly all of their retirement plan. Before Congress doubles the capital gains rate, I would implore you to consider what doing so would do to small businesses and small manufacturers, because the story that $1 million income makes a person "rich" ignores the irregular, and probably one time, in a person's life that this may occur.

Long term capital gains are also a critical part of attracting and retaining talented leaders in growing small businesses. People that are key to the growth of a small business are commonly granted ownership incentives to come to work at and/or stay with the small businesses. Doubling the capital gains tax removes the benefit of sticking with a small business. If all the income is going to be taxed the same, then it is easier and less risky to work for a big business, get paid more, keep the same amount of after-tax take home pay, and not be personally vested in the business because the person will always be an employee and never an owner.

If capital gains taxes are raised, then there should be serious consideration given to investments in American small businesses, including manufacturers. We need more, not less, investment in American small businesses, particularly domestic manufacturing.

3. Encourage Expanded Workforce Development for Skilled Trades.

In addition, as a nation we should urge our leaders in government at all levels, business, and education to promote and provide opportunities for all interested persons to learn skilled trades by supporting apprenticeships and technical education.

As mentioned previously, our portfolio companies, and those of many others in the SBIC space, are struggling to find both skilled and unskilled workers, but skilled workers are extremely difficult to find. It is one of the biggest problems in the manufacturing sector, and it is holding back small business growth and national economic growth. A four-year college degree is not for everyone. People can make a good living in trades that support manufacturing and contribute to our country's economic success. Congress should support practical opportunities to encourage more young people to pursue this route out of high school to help fill these needs in manufacturing.

Conclusion

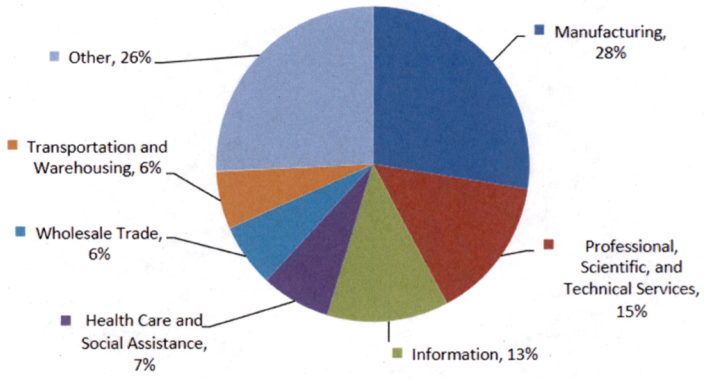
The U.S. is at a critical juncture, and our supply chains need to be strengthened in order for us to compete globally and meet our needs domestically. The SBIC program is perfectly situated to provide much needed capital to small manufacturers to help them lead the way in producing innovative products that continue to spur America's growth through the 21st century.

Thank you again for the opportunity to testify before the Subcommittee.

###

Distribution of SBIC Financing Dollars by Industry
FY 2010-2014
(SBA has not released updated data on this subject since 2016)

Exhibit 4-7: Distribution of SBIC Financing Dollars by Industry Reported FY 2010-2014
Total SBIC Financings = $17.1 Billion



** Numbers will not add to 100% due to rounding.*

NCTO
NATIONAL COUNCIL OF TEXTILE ORGANIZATIONS

AMERICAN TEXTILES
WE MAKE AMAZING

Testimony of Kimberly Glas, President & CEO
National Council of Textile Organizations

House Small Business Economic Growth, Tax, and Capital Access Subcommittee Hearing on Supply Chain Resiliency and the Role of Small Manufacturers

April 29, 2020

Chairwoman Davids and Ranking Member Meuser, thank you for the opportunity to testify on this subject that is so important to our nation, and to the U.S. textile industry and our workers.

My name is Kimberly Glas, and I am President and CEO of the National Council of Textile Organizations (NCTO). NCTO represents the full spectrum of the U.S. textile sector, from fiber through finished sewn products, as well as suppliers of machinery, chemicals, and other products and services with a stake in the prosperity of our industry. U.S. textile and apparel manufacturers produced $64 billion in output in 2020, and our sector's supply chain employs more than 530,000 workers.

Textile manufacturers are considered an "essential" industry in the United States due to the many consumer, military, and industrial products that we manufacture, including personal protective equipment (PPE) and textile and apparel products for the military. In fact, the U.S. textile industry supplies more than 8,000 different textile products for the U.S. military alone. The United States is also the world leader in textile research and development, with the U.S. textile complex developing next generation textile materials such as conductive fabric with anti-static properties, electronic textiles that can monitor heart rate and other vital signs, antimicrobial fibers, lifesaving body armor, and new fabrics that adapt to the climate to make the wearer warmer or cooler.

In my remarks today, I hope to demonstrate for the subcommittee the astounding resiliency of the U.S. textile industry supply chain — the preponderance of which is comprised of small businesses that are in many cases multi-generational, family-owned companies. My testimony will provide an overview of our industry's response to the COVID-19 pandemic, including a review of the impact the pandemic has had on small U.S. textile manufacturers and our workforce. I will then discuss the several options available to small manufacturers to access capital during the pandemic's ensuing economic downturn and some of the challenges we have faced accessing that support. Finally, I will offer some recommendations for key areas of action where the subcommittee can focus future efforts to ensure the resiliency and long-term viability of industries like ours that play a central role in U.S. manufacturing, output, and employment.

U.S. Textile Industry's Response to COVID-19

With the focus of today's hearing being supply chain resiliency and how to bolster small business, there is much to learn from studying and acknowledging the overwhelming challenges the industrial base confronted during the ongoing pandemic. As our country faced devastating challenges in responding to COVID-19 beginning last spring, U.S. textile manufacturers stepped forward and answered America's call during this time of crisis. Our industry received pleas, from the highest levels of government to nurses

and doctors on the front lines, asking for immediate assistance. The U.S. textile industry was honored to help during this critical time and feel it is our duty to contribute to the health and safety of our nation.

Decades of offshoring these industries to China put our healthcare workers in harm's way when global supply chains broke down. The sheer dominance of these essential supply chains in China coupled with the export controls they placed on PPE and raw materials as global demand surged led to the shocking headlines revealing nurses wearing garbage bags and reusing N95 masks.

U.S. textile manufacturers quickly mobilized to find innovative solutions to the crisis, proactively retooling production lines and retraining workers to provide U.S.-made PPE to front-line medical workers. They put aside competitive differences to construct multi-company PPE supply chains virtually overnight. In doing so, our members were able to manufacture and supply over 1 billion urgently needed items including face masks, isolation gowns, and their textile components at a time when global supply failed to meet the needs this crisis has required.

While the U.S. textile industry and its small-business backbone has undertaken heroic efforts to confront the ongoing crisis, the onshoring of a permanent PPE industry will only materialize if proper government policies and other actions are put in place to help domestic manufacturers survive the current economic crisis and incentivize the long-term investment needed to fully bring PPE production back to the United States.

Impact of the Pandemic on the U.S. Textile Industry

While domestic textile manufacturers remain a fully committed partner in the government's efforts to battle the pandemic and supply essential PPE, the severity of the economic crisis brought on by COVID-19 and its impact particularly on small businesses cannot be overstated. Despite all their PPE production efforts, many U.S. textile companies were confronted with idle capacity, rampant cancellation of orders, plant closures, and workers being furloughed at the height of the pandemic. Orders for the military also declined because of COVID restrictions. Regrettably, conditions have been so severe at certain points that century-old textile companies that survived the Great Depression, the onslaught of imports over the past 40 years, and the recent Great Recession have faced possible bankruptcy.

COVID-19 has created unprecedented demand destruction for apparel and textiles. Billions of dollars of orders for fiber, yarn, and fabric were cancelled last year as retail shopping outlets were closed for many months and then operated at reduced capacity. The Census Bureau reports that for March through May 2020, clothing sales were down $44 billion, or 66 percent, relative to the same three months in 2019. In fact, clothing sales exhibited the largest percentage decline of all major spending categories within the U.S. economy over this time period. [1]

While there was some improvement in the latter months of 2020 and moving into 2021, sales are still not back to pre-pandemic levels. For the full calendar year 2020, clothing sales were down $70 billion, or 26 percent, compared to 2019.[2] This historic downturn in demand led to many U.S. textile manufacturers operating at barely 10 percent of existing capacity beginning in March 2020. The

[1] U.S. Census Bureau, Monthly Retail Trade Report, Seasonally Adjusted Monthly Sales for 448: Clothing and Clothing Accessories Stores
[2] Ibid.

collapse in demand has been felt throughout the supply chain, including very acutely among small manufacturers.

These grim statistics lead to the conclusion that U.S. textile manufacturers have suffered as much as any single segment of the U.S. economy because of the COVID crisis. Noting that our ability to make PPE long term in the United States depends on the overall health of a strong domestic textile industry, we must use all the tools necessary to ensure this small-business-heavy manufacturing sector and other key sectors survive and thrive long after this crisis is over.

Textile Manufacturers' Increased Capital & Operating Expenses During the Pandemic

To paraphrase an old adage, crisis creates opportunity — and the COVID-19 pandemic, while devastating to existing textile business, created opportunities for many of our small manufacturers to rise above the challenges and serve our country by producing lifesaving PPE. Many textile manufacturers retooled facilities and production lines, at their own considerable expense, to produce these essential products. This required industry to purchase expensive equipment, at a time with incredible market and capital uncertainty, to reconstitute production chains to make essential supplies. Simultaneously, industry needed to expend significant resources to ensure safe workplaces to bring workers back on the job and to acquire raw materials necessary for making PPE.

While much of the industry is automated with sophisticated production chains, textile manufacturing still requires trained workers onsite to operate machinery, conduct quality control, facilitate logistics, and complete other necessary duties that cannot be easily automated or offloaded to software. In order to provide a safe environment for their workforce, immediate capital expenditures were required for these small textile businesses to remain open during the pandemic.

A recent survey of our membership indicates expenses were vast and wide ranging, including purchasing:

- Disinfectant wipes and additional cleaning supplies
- Hand sanitizer, including public stations and personal supplies for employees
- Disposable and reusable face masks and other PPE for employees to use both at work and at home
- Instant thermometers for checking employees and visitors
- Specialized cleaning services, including rapid decontamination when infections were discovered; in many cases this included expanding places and surfaces that were cleaned, and increasing the number of cleanings per week
- COVID-19 testing and vaccination costs for workforce
- Installation of plexiglass dividers at entrances, in office spaces, break rooms, and work floors
- Expanded break areas with additional tables and seating to allow for safe social distancing
- Upgrades for portion of staff who could complete duties from home, including computer equipment and IT upgrades
- Bonuses, incentives, and "hero pay"

- Additional costs associated with requirements for companies to cover healthcare expenses for employees infected with coronavirus
- Acquiring raw material supply for manufacturing PPE
- Machinery upgrades to produce PPE and critical medical supplies

One small business, a fabric manufacturer, estimated their COVID-related expenditures in these areas over the past year to total $200,000 just to ensure a safe workplace. All of these expenditures were necessary to remain operational, protect worker safety, and maintain productivity in the face of a severe economic crisis.

Throughout 2020, there was a high level of business uncertainty, and many small manufacturers did all they could to stay afloat until government relief arrived. It is impossible to fully quantify the uncertainty the pandemic created within the industry about the future stability of our business operations.

Now that PPE orders have largely subsided as China continues to dominate the marketplace and vaccines continue to be deployed, many companies are sitting with idle equipment purchased during the pandemic while struggling with legitimate concerns over the long-term viability of producing PPE in the United States. Further compounding the problem is a severe shortage of labor across the industry exacerbated by the COVID-19 crisis.

Without strong federal government policies to incentivize this production chain long term, including domestic procurement requirements and other production investments, our industry fears that this opportunity to onshore the domestic PPE supply chain will be lost forever. We simply cannot let that happen — this is a serious public health security and national security issue. Your continued leadership to find ways to bolster the small business industrial base is essential to improving the resiliency and global competitiveness of the U.S. textile industry and the overall industrial base.

Textile Manufacturers' Access to Capital During the Pandemic

As you can see, many of the solutions necessary for small textile manufacturers to weather the challenges of the pandemic required access to capital. Textile manufacturing is a capital-intensive industry, with small businesses reliant on massive outlays for facilities, machinery, automation, R&D, and workforce training and retention, among other areas. In addition, because textile manufacturing is increasingly automated, energy costs are a major operating expense for textile mills. For smaller businesses in our sector, Small Business Administration (SBA) programs serve an important role in ensuring they can remain viable in a highly competitive industry.

Our members have availed themselves of many federal small business programs available to them prior to and during the pandemic, including the Paycheck Protection Program (PPP), Economic Injury Disaster Loans (EIDL), Main Street Lending Program (MSLP), 7(a) loans, and 504 loans.

Overall, our membership appreciates several aspects of SBA loans, including the lower down payment and extended payment terms often associated with them. These advantages, however, are sometimes offset by other factors that can disincentivize their use. I will review some of these challenges shortly.

These various programs took on outsized importance this past year as manufacturers in crisis scrambled to access the capital needed to weather the pandemic.

Paycheck Protection Program (PPP)

We cannot overstate the value of the Paycheck Protection Program to small textile manufacturers. This program alone kept innumerable essential textile businesses open, thousands of workers on payroll, and facilities viable. Many of our small manufacturers consider the PPP as the lifeline that saved their businesses during the worst of the economic downturn experienced in 2020.

Economic Injury Disaster Loans (EIDL) and Main Street Lending Program (MSLP)

To a lesser extent, EIDL and MSLP were accessed by textile manufacturers during this past year. Our members have also shared that there were unexpected challenges in attempting to access these programs as additional avenues of support.

A small textile manufacturer from the northeastern United States shared with us that they applied for both PPP and EIDL funds at approximately the same time in early April 2020. The PPP funds were disbursed within about two weeks and kept every employee on payroll for two months. The EIDL, however, was not as helpful for several reasons. First, the borrower was not provided with a formula upfront to calculate how much capital they were eligible to borrow. Instead, they submitted significant amounts of personal and business information to the SBA with no idea what kind of relief they could expect to receive. It took about 60 days to learn that they would receive only a fraction of what was needed with no explanation about why the figure was unexpectedly low.

This past January, this same borrower applied for a second EIDL loan only to learn that they had unwittingly maxed out their first loan — the one with the smaller than expected benefit — which as they understood it was due to the small amount of funding available to SBA for the program. This borrower felt that a significant amount of their time was wasted in this effort, time that could have been saved had SBA more clearly communicated the program's details and informed them early on that they did not qualify for additional funds.

In general, our membership found these programs to be too complicated in terms of eligibility requirements and cumbersome in terms of the application procedures to respond to the emergency environment ushered in by the COVID pandemic.

In a business environment that demands a level of certainty, we would recommend that SBA improve communication with prospective borrowers by providing concise, easy-to-understand guidance about each of the programs available to small businesses, including eligibility criteria and ways to calculate their expected benefits. This is especially important as small businesses often have limited staffing, time, and resources in comparison to larger companies who might retain dedicated legal and financing staff.

7(a) and 504 Loans

When it comes to the more standard loans available to small businesses through SBA, we note some frustration some small companies have expressed when attempting to access these funds.

As mentioned earlier, SBA loans have attractive upsides, including lower down payments, extended payment terms, and currently extremely generous interest rates. For certain companies, these advantages can be offset by several factors that, on balance, might make SBA loans less attractive options.

Historically, SBA loans carry with them expensive upfront fees, significant paperwork, and other policies that some find counterproductive, and these loans can rely too much on personal guarantees. Each of these issues can present a barrier to accessing the capital needed to build and grow a competitive small business.

One of our small businesses shared recently that they have not taken advantage of SBA loans in the past because they do not own real estate, and their other assets were already pledged to the bank as collateral on traditional loans.

We would ask the subcommittee to consider taking steps to help mitigate some of these problems by reviewing ways to reduce paperwork, lower application fees, and reduce personal guarantees. The subcommittee should also examine ways in which banks can also play an increased role in assisting small businesses by sharing these responsibilities with borrowers.

Recommendations

One silver lining associated with the immense challenges posed by the COVID-19 crisis is that it afforded the domestic textile industry an opportunity to demonstrate its enormous resiliency, flexibility, and overall value to the U.S. economy. Despite the fact that there was virtually no U.S. production of textile-based PPE prior to the pandemic, the heroic actions of domestic textile manufacturers resulted in the ability to supply homegrown PPE at the height of the greatest healthcare emergency our country has faced in the past 100 years.

The ability to successfully respond to this current challenge was honed by a series of severe trials that have confronted the U.S. textile sector over past three decades. Most notably among them was the emergence of highly subsidized, state-owned competitors in China and Vietnam that continue to benefit from central government planning intended to help those countries dominate global textile markets.

These difficult, unfair, and often illegal circumstances in recent years have proven the need for sound government policies that allow U.S. manufacturers a reasonable and legitimate ability to compete in an extremely hostile global marketplace. From a textile perspective, chief among these valuable policies is the Berry Amendment, which governs textile related defense procurement, and the strong rules of origin that govern trade under our various free trade agreements, including USMCA and CAFTA-DR.

As we exit the current crisis, rational federal policies are once again needed to ensure a stable overall environment where small businesses can compete and thrive, and targeted initiatives are required to ensure that domestic supply chains for critical materials, such as PPE, exist in the United States.
In that regard, NCTO has proactively coordinated with 20 additional trade associations and labor groups representing the entire domestic supply chain to develop and propose a commonsense approach to strengthening the integrated U.S. textile sector, including fiber producers, yarn and fabric

manufacturers, cut-and-sew operators, and American workers.[3] We are united in our support for key policy improvements in a number of areas, such as those listed below.

Strengthen Buy American Procurement Rules: First, we must maintain and expand strong domestic procurement rules for federal purchases of textile products. These buy American rules should mirror the existing Berry Amendment, which can serve as a model for any new domestic procurement rules covering federal purchases of PPE.

Our military leadership recognizes the importance of having a U.S. manufacturing base capable of servicing its mission critical needs. Otherwise, our national defense would be severely hampered in times of conflict by disrupted international supply chains and our military effectiveness beholden to the whims of potentially hostile regimes who control production through state-owned businesses.

We are pleased that the President's Build Back Better initiative outlines the importance of having stronger domestic manufacturing supply chains. In January, President Biden issued an Executive Order to identify ways to strengthen Buy American rules. For our industry, it is essential that we couple these Executive Orders with legislation that ensures our supply chain is resilient and significantly stronger as we confront the next crisis.

The Berry Amendment, a domestic procurement law which ensures that we have the domestic industries capable of servicing our men and women in uniform, sets the standard that America needs to follow to safeguard our public health. As with military procurement, new federal government domestic purchasing requirements for PPE will create the stable demand for U.S.-made PPE that will incentivize investment in and the viability of domestic PPE manufacturing. This is especially true for small businesses who need a strong and consistent demand signal from the federal government in order to justify the capital investment required to expand U.S. PPE production.

Further, our taxpayer dollars should not go to China and other offshore PPE producers, only to have those same offshore producers withhold access to vital supplies and equipment in the face of global shortages. To the contrary, applying strong procurement rules across federal government purchases of PPE will unequivocally lead to investments in this sector and help onshore this industry.

In this regard, we support H.R. 1466, the American PPE Supply Chain Integrity Act, sponsored by Representatives McHenry of North Carolina and Pascrell of New Jersey. This bipartisan bill would implement a buy-American mandate modeled on the Berry Amendment across all key federal agencies involved in PPE procurement.

In addition to the need for buy-American mandates for targeted product sectors, further policy enhancements are needed to nurture these important supply chains, including:

Provide Funding Assistance for Companies to Reconstitute Domestic Supply Chains Important to U.S. National and Healthcare Security: This can be done through focusing the Defense Production Act and federal production grants and tax credits on textiles and other key sectors to support future investments in manufacturing capacity for strategically important supply chains.

---

[3] Joint Statement on Policy Objectives for Reshoring and Safeguarding Domestic PPE Manufacturing, http://www.ncto.org/wp-content/uploads/2020/07/2020-07-20-Joint-Industry-Statement-on-PPE-Principles-Final.pdf

In this regard, we support H.R. 346, the SUPPLIES Act. This bill, sponsored by Chairwoman Davids, will create a $100 million fund to help small businesses dedicate new and expand existing manufacturing capacity to the production of medical PPE in the United States.

Key Contracting Reforms: Private sector investment in important U.S. supply chains can be further bolstered by contracting reforms that promote long-term contracts for U.S. suppliers and that emphasize the following:

- Employing a "best value" as opposed to "lowest price technically acceptable" selection process in making awards
- Awarding contracts directly to manufacturers over distributors
- Dedicating a certain portion of contracts to set-asides for small business manufacturers with proven abilities to manufacture products
- Conducting a due diligence process in which the U.S. government fully vets awardees and ensures contracts are awarded to those who clearly demonstrate the ability to meet the federal government obligations, including having the necessary credit to execute on contract awards

We believe these vetting tools being deployed prior to contracts being awarded will help strengthen the federal government contracting process and ensure the government is receiving quality/timely products.

These reforms are essential to strengthen the U.S. industrial base and ensure the government is receiving quality product from capable domestic suppliers. These necessary contract reforms will help U.S. manufacturers better compete with offshore suppliers who often have significant price advantages due to government subsidies, along with undervalued, and in some abhorrent instances, forced labor.

Streamline the SBA Loan Application Process: In addition to designating specific funding for small businesses involved in strategic supply chains, we believe that a streamlining of SBA's loan process is warranted as well as clear communication with borrowers. This would include reducing the significant paperwork required in the application process and lowering borrowers' costs associated with SBA loans, like expensive upfront fees and excessive personal guarantees. These issues serve as a hidden deterrent in the SBA application process for small businesses who are naturally constrained from a personnel and resource standpoint.

Provide Additional Funding for Workforce Training: As a result of the pandemic, our industry is finding it increasingly difficult to find workers at a time when orders are rebounding. This significant labor shortage cannot be overstated. Incentivizing small manufacturers and providing additional tools for workforce training and recruitment would help the industry more fully rebound.

Conclusion

In summary, the COVID-19 crisis once again demonstrated the enormous contribution the U.S. textile industry makes to our overall economy and to our national and healthcare security. While we have suffered significantly due to market contractions and forced production shutdowns, we are confident that the domestic textile industry will exit the current crisis stronger and more agile than before the onset of the pandemic. With that said, NCTO and our members stand ready to work with this

committee and the Congress as a whole to enact rational policies that strengthen U.S. small businesses, and particularly those small businesses involved in strategically critical domestic supply chains.

Thank you for allowing to me this opportunity to testify at this important hearing, and I look forward to working with you to further strengthen America's small business community.



Pennsylvania Manufacturers' Association

April 29, 2021

Testimony before the:

U.S. House of Representatives, Committee on Small Business, Subcommittee on Economic Growth

Supply Chain: Workforce Crisis

David N. Taylor, President & CEO

The Frederick W. Anton III Center • 225 State Street • Harrisburg, Pennsylvania 17101
Phone (717) 232-0737 • Fax (717) 232-8623 • www.pamanufacturers.org

Chairwoman Davids, Ranking Member Meuser, and members of the subcommittee, thank you for the privilege of testifying today. I am David N. Taylor and I serve as President & CEO of the Pennsylvania Manufacturers' Association, which is the statewide non-profit organization representing the manufacturing sector in our state's public policy process. PMA is the official state partner of the National Association of Manufacturers, and I also work with my colleagues from across the country as a member of the executive committee of the Conference of State Manufacturers Associations.

Along with my friend Rep. Meuser from northeastern Pennsylvania, I want to recognize my friend Rep. Evans from Philadelphia, who was a longtime leader at the state Capitol in Harrisburg before coming to Congress. Good to see you, sir.

I want to express three important points. First, the workforce crisis is real and is a hard cap on America's economic growth. Second, the federal government becomes a competitor to employers when it pays people more to stay home than they would earn at work. Third, Congress can help address the workforce crisis by working with the states to reinvent the existing tangle of taxpayer-funded workforce development and job training programs. I'll expand on each of those points as we go on.

From the nation's earliest days, our leaders have recognized the role manufacturing plays in building America's economic strength. As you probably know, Treasury Secretary Alexander Hamilton submitted his "Report on Manufactures" (meaning manufactured goods) to the U.S. House of Representatives in 1791. From Hamilton to Henry Clay of Kentucky to President Lincoln, this approach became known as "The American System", which led to the great industrial revolution of the 19th and 20th centuries.

Manufacturing is the sector of our economy that adds the most value, pays the highest wages and benefits, and has the strongest multiplier effect on job creation. No matter what product is being made, manufacturing takes raw materials or component parts and goes through a multi-stage process to yield a finished good, almost always consuming a large amount of energy and usually deploying some kind of chemical process. Because of that multi-stage process of adding value, manufacturing sustains not only the jobs on the plant floor but also jobs through supply chains, distribution networks, and vendors of industrial services. In that way, the major manufacturer is often the small business owner's best customer.

In a particular community, the manufacturing firm is almost always a significant taxpayer in addition to being a major employer, which makes the health of the business environment an important public concern. As we have seen too many times since giving the People's Republic of China full access to our markets in 2000, the loss of a manufacturing employer is a deep wound, after which local authorities struggle to help find new work for displaced employees, attempt to attract new businesses, and scramble to close shortfalls in government budgets.

I know the subcommittee is looking to examine the supply chains for small business, however the most critical input that is lacking for manufacturers today is the supply of qualified workers.

Nationally, manufacturers are facing an alarming problem: our workforce is aging and retiring and there is a shortage of skilled hands to succeed them. Pennsylvania is no exception to this problem. According to our sources at the Manufacturing Institute, at any given point in time there are roughly 6,000 open manufacturing positions in Pennsylvania. Couple the current shortage with the fact that some companies have more than half of their current workforce within just a few years of retirement and we could consider

this workforce problem a workforce crisis. The manufacturing sector and the workforce at large face an increasingly pressing problem: the glut of unfilled jobs due to a skills gap.

As a result of employers' inability to find enough qualified new hires, businesses are not able to grow to meet current levels of customer demand. Those employers are "leaving money on the table" because they can't find the quality employees they need to increase production capacity to be able to bid on new work, which is available. This is what I am trying to express when I say that the workforce crisis is a hard cap on growth.

At the same time, this workforce crisis also offers an opportunity for true social progress in America. Due to the reality of more jobs available than people looking for work, employers will be compelled to cast the net wider by considering candidates that they would not have considered before: people who have been outside the workforce due to unemployment, being on public assistance, or ex-offenders who are trying to begin their lives again. This is a subject for a longer conversation at another time, but I wanted to at least note that potential for progress at the heart of this issue.

Of course, to get people into the workforce, they first have to want to work. This is one of the problems of the current moment because of Congress' policy of subsidizing state unemployment compensation payments. The federal government was correct to respond to the needs of our citizens caused by the economic shutdown triggered by the pandemic. Many people are still dealing with both the health crisis and the economic consequences of the shutdown. The impulse to be generous is understandable, but, regrettably, the federal taxpayer subsidy to state unemployment benefits is keeping many employees out of the workforce.

As a local businessman told me at church last week, the government has become a competitor in hiring with the private sector, as employees are declining offers to return to work because they are receiving more in benefits to stay home. While there is a precedent with New Deal three-letter agencies to provide work to the unemployed, at least those programs actively engaged individuals, upgraded their skills, and gave them something to list on a resume. Although I recognize that the political winds are against it, I implore you to please reconsider the federal unemployment subsidy.

One final thought that I want to share with you concerns the efficacy of the nation's job training and workforce development programs. In Pennsylvania, roughly two billion dollars in state and federal taxpayer money is spent annually on more than four dozen programs that run through at least five different state cabinet agencies. Following a 2019 audit of the state's workforce development system, Pennsylvania's Auditor General at the time (Eugene DePasquale - D) said "I think it needs to be restructured entirely... You have to envision nothing exists right now and how you would create it. None of us would have it look like it does today." https://www.thecentersquare.com/pennsylvania/auditor-general-pennsylvania-workforce-development-needs-to-be-restructured-entirely/article_be5852de-4b1d-11e9-bf0b-e387a8e0b7a0.html

I am convinced that there are hundreds of millions of dollars in efficiencies that could be realized if Pennsylvania, working in partnership with Congress and the respective federal departments, could realign, rework, and move dollars between programs. The existing waiver process has been used to great effect by the state of Indiana, and I would recommend using their experience as a model for future reforms.
https://www.dol.gov/sites/dolgov/files/ETA/wioa/pdfs/Signed_Indiana_State_Board_Waiver_Ltr.pdf

There are a variety of issues that need to be examined when it comes to our supply chains. Whether it's related to energy development, natural gas liquids, semiconductor materials, rare earth minerals, transportation infrastructure challenges; all of these are topics that have real implications for our manufacturers. However, as is true in all facets of life: people first. Our workforce crisis is the single largest threat to the overall supply chain that our manufacturers, our consumers, and our markets, rely upon. Thank you for the great honor of speaking with you to highlight this issue, and I will do my best to answer your questions.

ALLIANCE FOR
american
manufacturing

Statement of Scott N. Paul,
President, Alliance for American Manufacturing
Before the House Committee on Small Business
Subcommittee on Economic Growth, Tax, and Capital Access Hearing entitled:
"Supply Chain Resiliency and the Role of Small Manufacturers."
April 29, 2021

Chairwoman Davids, Ranking Member Meuser, and members of the subcommittee, thank you for the opportunity to share our views on the issue of "supply chain resiliency and the role of small manufacturers." This is a timely hearing, and we encourage Congress to prioritize policy actions that bolster U.S. production and shore up fragile supply chains. We cannot wait until the next crisis hits to begin working on rebuilding lost manufacturing capabilities. Moreover, the answer to these challenges cannot be a continued reliance on imports and outsourced supply chains.

Americans are rightly concerned that years of tax and trade policies that encourage outsourcing, coupled with a failure to invest in our domestic manufacturing base, have brought into clear view our inability to protect the health and safety of Americans during a time of national crisis. Focusing on supply chain challenges and constraints with a bias towards a continued reliance on imports is the wrong approach. Now is the time to break the vicious cycle of implementing policies that reward imports over domestic production. Both our economic and national security are at stake. We must be better prepared for the next crisis, and that requires taking bold action, starting right away.

I would like to offer several policy recommendations necessary for the rebuilding of domestic manufacturing and U.S. supply chains:

- Small- and mid-sized manufacturers face significant barriers in serving multinational companies focused on high margins, low unit costs, and exploiting advantages gained from purchasing products made in countries like China with lax labor and environmental enforcement regimes and massive state subsidies for industries. Just as our federal policy should include a focus on "Buy America" to ensure tax dollars do not leak to China, we must develop incentives – through both benefits and penalties – for multinational firms to utilize and nurture domestic supply chains. Such actions will enhance national and economic security and promote job creation in America.

- We must confront the reality that China is using the COVID-19 crisis to propel its own interests forward. In early March, a Chinese official remarked that "it is possible to turn the crisis into an opportunity — to increase the trust and the dependence of all countries around the world of 'Made in China'"[1] We cannot continue allowing heavily subsidized imports to prevent American entrepreneurs from stepping forward to fill gaps in our fragile domestic supply chains. Since China's 2001 entry into the world trade system, Beijing's predatory economic behavior has fueled an unprecedented $5 trillion bilateral goods trade deficit, including a record $419 billion goods deficit in 2018. Our communities have shed more than 54,000 manufacturing facilities. A staggering 3.7 million jobs, largely in manufacturing, have been lost because of this massive trade

[1] "Viral Moment: China's Post-COVID Planning," Horizon Advisory. March 2020.

711 D Street, NW, 3rd Floor • Washington, DC 20004 • 202-393-3430 • americanmanufacturing.org

imbalance, impacting every state and nearly every sector of our economy. These trends are unsustainable and put the future of our economy, national security, and country at risk.

- Congress should enact measures to prevent China's state-owned and state-supported firms from accessing recovery dollars or future spending to rebuild our manufacturing capabilities. The *New York Times* reported on August 2, 2020, on findings by geopolitical consultancy Horizon Advisory that more than 125 Chinese-backed companies received loans from the Paycheck Protection Program (PPP), which was created at the start of the COVID-19 shutdowns to keep America's small businesses afloat and keep workers employed during this unprecedented crisis.[2]

  According to the report, "These PRC entities span State-owned enterprises (SOEs); companies with ties to China's military and military-civil fusion programs; companies that the US government has identified as national security threats; companies complicit in China's genocide against the Uighur minority in Xinjiang; and media outlets owned by, or that take direction from, the CCP… The identified recipients linked to PRC-based ownership span critical and strategic industries including aerospace and defense; pharmaceuticals and medical technology; legacy and emerging automotive manufacturing; advanced manufacturing and manufacturing components (e.g., semiconductors, robotics); telecommunications; financial technology; entertainment; and media."

  As much as $419 million in PPP funds have gone to these companies, many of which have direct ties to China's authoritarian regime. In some cases, it even appears that U.S. taxpayer money went to companies with direct links to the Chinese military. According to the Horizon Advisory report, at least 32 of these Chinese companies secured loans of $1 million or more. Some even received loans between $5 and $10 million.

- Congress must make strong domestic content preference laws a key piece of our recovery efforts. Congress has already missed several opportunities to ensure that investments are targeted at recovery here in America and discouraged from being used for purchases of imported goods. While the Small Business Administration's application for Paycheck Protection Program (PPP) loans included a certification that "*To the extent feasible, I will purchase only American-made equipment and products*," the provision was unenforceable and, to our knowledge, completely ignored.

- Buy American laws applied to direct federal procurement should be strengthened to ensure that spending fosters a healthy and resilient industrial base, and concerted efforts to support key industries should be undertaken. Buy American laws and other domestic preference requirements like the Berry Amendment and Specialty Metals Clause have far too many loopholes and compliance failures, leading to billions of dollars spent on foreign-sourced products.

  Reinvesting tax dollars here at home creates American jobs, invests in goods produced under strong environmental and workplace safety standards, and protects our economic

[2] "U.S. Small Business Bailout Money Flowed to Chinese-Owned Companies," Alan Rappeport. *New York Times*. 2 August 2020.

711 D Street, NW, 3rd Floor • Washington, DC 20004 • 202-393-3430 • americanmanufacturing.org

ALLIANCE FOR american manufacturing

and national security. Without these policies in place, predatory foreign governments would be free to undercut domestic production with dumped and subsidized, environmentally-unfriendly, and substandard products – bypassing American workers and sending U.S. tax dollars offshore rather than reinvesting in the United States.

- Congress should create greater transparency into a product's country of origin to empower consumers, small businesses, and government purchases to be part of the solution. We should be taking steps to make it easier and more reliable for American consumers to buy products labeled "Made in USA." This requires stronger enforcement of labeling laws, as well as broader application to reflect the changing nature of retail sales. Online retailers currently do not need to disclose country of origin information for products they sell, making it nearly impossible for consumers, who in poll after poll express strong preferences for American-made products, to align their spending with their values.

- Finally, we must be prepared to invest significant federal resources to reshore critical supply chains. The makers of respirators and pharmaceuticals, for instance, not only compete with other companies, but also with other governments such as China.

Thank you for the opportunity to share our views and thank you for your work to rebuild America's manufacturing capabilities.

AAM is a non-profit, non-partisan partnership formed in 2007 by some of America's leading manufacturers and the United Steelworkers. Our mission is to strengthen American manufacturing and create new private-sector jobs through smart public policies. We believe that an innovative and growing manufacturing base is vital to America's economic and national security, as well as to providing good jobs for future generations. AAM achieves its mission through research, public education, advocacy, strategic communications, and coalition building around the issues that matter most to America's manufacturers and workers.

711 D Street, NW, 3rd Floor • Washington, DC 20004 • 202-393-3430 • americanmanufacturing.org

Testimony of

Jackie Wilson

CEO and Founder, American Fashion Network
East Syracuse, NY

House Committee on Small Business Subcommittee on
Economic Growth, Tax, and Capital Access

"Supply Chain Resiliency and the Role of Small Manufacturers"

April 29, 2021

The American Fashion Network is pleased to submit the following testimony to the Committee. My name is Jackie Wilson, I am the Founder and CEO of the American Fashion Network (AFN), a women-owned small business based in Syracuse, New York. Over the last year, I have seen firsthand how domestic manufacturing policies such as President Biden's Executive Order 13788, *Ensuring the Future Is Made in All of America by All of America's Workers*, the *Defense Production Act* and the *Berry Amendment* can significantly benefit small businesses like mine. At the beginning of the COVID-19 pandemic, AFN made the decision to pursue federal work, as we watched the retail industry suffer under the economic strain of lockdowns. Thanks to these policies, AFN has been able to support American workers in the process.

It has always been my goal to continue to keep manufacturing in the United States. Born and raised in Los Angeles County, California, I was able to experience the glory of American-made first-hand in the 1970s and 1980s, before many of the jobs moved overseas. Together with the U.S. government, I believe we can keep it alive. With this in mind, I founded AFN in 2005, and have since grown into a full manufacturing enterprise, providing clothing, fabric and promotional specialty products to the world's most prestigious retailers and corporations including, but not limited to: Amazon, Kohl's, JCPenney, American Eagle, Lucky Brand, H&M, Express, Comcast, Charter/Spectrum, Syracuse University, PETCO and WESCO.

AFN is committed to quality and innovation through customization to our corporate partners. Our domestic manufacturing footprint features three offices in Syracuse, New York, Milwaukee, Wisconsin, and Los Angeles, California. Despite AFN's monumental growth and success in the corporate retail industry, the COVID-19 pandemic was a major setback for us. When millions of dollars in sales were canceled, I knew I had to pivot to keep my business and employees afloat. I decided to try and enter the federal market to diversify my business model. With the help of my partners, I was able to begin producing masks for COVID-19 protection, from design to shipping—in just five days. Since March 2020, AFN has shipped millions of masks to US and international customers. Domestic mask recipients of our masks include the U.S. Postal Service, Charter/Spectrum, Comcast and America's retail sector. AFN kept Americans safe from week one of the pandemic by manufacturing Centers for Disease Control and Prevention (CDC) compliant, reusable and washable masks. The masks shipped in March 2020 are still being worn today.

Policies like "Buy American" that encourage small business participation and give domestic preferences in the federal procurement marketplace have allowed my business to thrive. Especially with the uncertainty of the past year, federal contracting opportunities provide small businesses with security and long-term stability. In the fashion industry, there is a constant ebb and flow of business. Most recently, AFN won a $46.8 million contract from the U.S. Marine Corps to produce a new line of fitness training uniforms for service members. I cannot express enough how grateful and proud I am for the opportunity to provide garments for U.S. military personnel. This is the biggest federal contract AFN has won; giving me the opportunity to hire an additional 5 employees, while also looking to hire even more. Our contract with the Marine Corps gives us a foundation and opportunity to steadily build.

Despite our success, I know there is still a lot of work to be done to ensure our supply chains are resilient and our small domestic manufacturers are supported. Small businesses have stepped up to the plate and put their livelihoods on the line this past year, therefore I recommend the following

policies to strengthen these businesses. First, Congress should consider strengthening procurement legislation that supports small business manufacturer success. Many small manufacturers have taken on large financial burdens to obtain the technology, machinery, workforce, and training necessary to produce essential personal protective equipment (PPE). Bills such as the *SUPPLIES Act* would help recover these costs. It is crucial that Congress passes legislation providing long-term stability and new manufacturing opportunities for small businesses.

Second, Congress should incentivize federal agencies that reward procuring items that are American made by small manufacturers. As the pandemic begins to wind down, small manufactures will again have to pivot as the demand for certain PPE will inevitably decrease. Providing such incentives for government agencies to utilize small, domestic manufacturers will ensure that small businesses continue to get a piece of the pie, while strengthening the U.S. economy.

Thank you for considering my testimony on this important matter. I applaud the Committee's effort to address these issues and look forward to future opportunities to share my input on ways Congress can support small manufactures.

April 28, 2021

The Honorable Sharice Davids
Chair
Subcommittee on Economic Growth, Tax, and Capital Access
Committee on Small Business
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Dan Meuser
Ranking Member
Subcommittee on Economic Growth, Tax, and Capital Access
Committee on Small Business
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairwoman Davids, Ranking Member Meuser, and Members of the Subcommittee:

My name is Scott Lincicome, and I am a senior fellow in economic studies at the Cato Institute. I would like to thank the Subcommittee on Economic Growth, Tax, and Capital Access for convening this Hearing on Supply Chain Resiliency and the Role of Small Manufacturers, on April 29, 2021, and for providing the opportunity to express my views regarding this topic. In particular, I am writing to discuss the how domestic and global supply chains adapted during the pandemic and how the federal government can best assist small manufacturers going forward.

Since March of last year, a common refrain, including from Presidents Trump and Biden, has been that that pandemic-related shortages revealed major weaknesses in America's "economic resilience"—weaknesses caused by past U.S. policies and demanding new federal government action. Surely, these claims have a nugget of truth: Global supply chains and a nation's openness to trade and investment inevitably involve a risk that a "shock"—war, pandemic, natural disaster, etc.—hits the world or certain key nations and roils domestic supply. Such issues definitely arose a year ago, when factories shut down, container ships sat empty at port, and our grocery store shelves were empty. Such is the nature of a once-in-a-lifetime shock to global supply and demand.

However, the story of COVID-19 and our supply chains did not end in April 2020, though many today act like it did. Since then, governments and markets have responded, using both global supply chains *and* the significant industrial capacity that—contra the conventional wisdom—still exists in the United States. These experiences and previous ones reveal that federal government attempts to re-shore supply chains raise their own risks, especially for small manufacturers, and that freer markets can bolster U.S. resiliency by increasing economic growth, mitigating the impact of *domestic* shocks, and maximizing flexibility in times of severe economic uncertainty. This reality argues for a different approach to achieving *real* resiliency—one based on the open and flexible policies that America does best.

The Reality of American Manufacturing and Pandemic Resilience

Contrary to conventional wisdom, there is little evidence of systemic weaknesses in the United States' "industrial capabilities" (i.e., the ability to produce the goods that the country needs in times of war or other national emergency)—the metric that, along with access to similar capabilities abroad, the Department of Defense considers critical for national security.

In fact, as I explained in a recent Cato Institute policy analysis (see enclosure), the U.S. manufacturing sector remains among the most productive in the world and is a global leader in medical goods production.

- Data from 2018—before the trade wars began—show that U.S. manufacturing sector's output, exports, foreign direct investment, and worker productivity sat on or near the top of the world ladder. American manufacturing also performed well on a historical basis, continuing earlier trends of expansion. Real (inflation-adjusted) value-added and gross output were up significantly between 1997 and 2018, while investment—capital expenditures, research and development (R&D), and FDI—also has been consistent and historically strong. Finally, the sector experienced improved financial performance since 2001 (the first year of data available), with real gains in revenues, post-tax income, and assets.
- Second, the manufacturing industries most closely associated with the pandemic have generally prospered in recent years. The vast majority of essential medical equipment (hand sanitizer, masks, personal protective equipment, ventilators, etc.) consumed in America in 2018 was made here, and the United States was a top global producer, importer, and exporter of medical goods that same year. Domestic production of medical equipment and supplies saw expanding real output and value-added between 1997 and 2018. And there is particular strength in pharmaceuticals—a fact underscored by the development and production of the BioNTech/Pfizer and Moderna COVID-19 vaccines. Historical data on output, R&D, and capital expenditures show that American pharmaceutical manufacturers have performed well, and the United States is home to more than 500 pharmaceutical manufacturing facilities—among the highest concentrations in the world. The Food and Drug Administration further reports that a significant share of all global pharmaceutical input ("API") manufacturing facilities are in the United States, and that the United States was home to 510 API facilities in 2019.

Perhaps more importantly, there is substantial evidence that domestic producers and supply chains have thus far weathered the pandemic as well as could be expected, given 2020's massive and unforeseen shocks to global medical goods supply and demand. In particular, an extensive December 2020 analysis of "U.S. industries producing COVID-19 related goods and the supply chain challenges and constraints that impacted the availability of such goods" from the nonpartisan U.S. International Trade Commission (USITC) drew the following conclusions:

- The United States is a large global producer of pharmaceuticals, medical devices, soap and cleaning products, and N95 masks. Prior to the pandemic, the U.S. market for these goods was primarily satisfied by domestic manufacturers, with imports supplementing that production.
- The United States was a smaller producer of low-value PPE products—surgical masks, medical gowns, and rubber gloves—that are primarily produced in developing countries with low labor costs or abundant supply of raw materials (especially in the case of rubber gloves).
- Pharmaceutical and medical device production and supply chains proved resilient during the pandemic, and supply concerns remained limited throughout 2020. With respect to pharmaceuticals in particular, the USITC's conclusions echoed the agency's

previous analysis showing China and India to be major suppliers of certain drug products but little evidence of potentially problematic U.S. "dependency."

- The most significant factor affecting the availability of COVID-19-related goods was the unprecedented demand for such items in the United States and abroad. In response, U.S. producers significantly increased production but in most cases still could not keep up with demand. For example, U.S. N95 mask producers supplied 80 percent of the domestic market in 2019 (30 million units per month, with medical professionals needing only about 10 percent—or 3 million—of those) and increased production six-fold by the end of 2020 in response to the pandemic. However, domestic demand for N95 masks increased by as much as *ten-fold* during the summer of 2020, easily outpacing the U.S. expansions.
- Imports of medical goods, especially PPE, helped fill the gap between domestic supply and demand, which in many cases exceeded historical volumes by several times over. Import sources were widely varied overall, with China the dominant import source for only surgical masks and medical gowns. Although some shortages did exist in the first half of 2020, they were mostly alleviated in subsequent months (though PPE supply remains tight). Only rubber gloves continued to be a concern going into 2021, mainly due to the limited availability of natural rubber (sourced primarily from Malaysia) and artificial alternatives.
- Beyond demand, the most common concerns raised by U.S. producers and importers were regulatory barriers (especially for surgical masks, medical gowns, and hand sanitizer), tariffs on finished goods and manufacturing inputs, and uncertainty regarding future demand once the pandemic ends.

Overall, the report shows a large and diverse U.S. medical goods market in which both domestic production and imports vary according to comparative advantages and work in tandem to satisfy consumer demand—demand that skyrocketed in response to a once-in-a-generation pandemic and was met (albeit imperfectly) by both imports and increased domestic production, most of which came without government support.

In short, the system was stressed but ended up working pretty well.

Anecdotal evidence supports the USITC's findings. Many U.S. companies shifted operations to produce high-demand PPE during the pandemic—an example of the U.S. manufacturing sector's pre-existing industrial capacity and flexibility. Others were drawn into the market by sky-high demand: online crafts retailer Etsy, for example, sold more than $600 million in facemasks during the second and third quarters of 2020 (12 million units in April alone), and "more than 110,000 sellers sold at least one mask between April and June." Although short-term gaps in U.S. PPE supply inevitably emerged during the pandemic (due to astronomical demand, pre-pandemic stockpiling mistakes, or other issues), they were filled in by foreign producers and government stockpiles. By late summer 2020, N95 masks were readily available (for individual or bulk purchase) online, and just last week the *Associated Press* reported that "U.S. manufacturers say they have vast surpluses for sale, and hospitals say they have three to 12 month stockpiles." Several members of Congress also recently wrote to President Biden complaining of a *glut* of U.S.-made PPE, because the "industry retooled production chains in the spring to respond to the crisis," and as a result, "domestic production capabilities for essential products like isolation gowns, N95 masks, testing swabs and other critical products have grown exponentially."

The Problems with "Fixing" Supply Chains

Given how domestic and global supply chains performed during the pandemic, the federal government should avoid widescale repatriation and "self-sufficiency" policies, which defy basic economic sense and would produce significant distortions.

Most notably, there is the problem of maintaining pandemic-level capacity in non-pandemic times. The USITC calculated that in 2020, the United States used many times the number of N95 masks, medical gowns, surgical masks, and other essential goods that were used in 2019. Maintaining that much excess capacity in times of normal demand is extremely costly (for many industries, profitability kicks in at around 80 percent capacity utilization), and running at that level in non-pandemic times would produce a global glut—ironically, similar to the ones the U.S. government complains about when China subsidizes "global excess capacity" and certain to cause new trade tensions. Indeed, we appear to already have a glut of American-made PPE, and foreign governments are already speaking out about other nations' pandemic-era subsidies.

Compounding this issue is policymakers' inability to know which products to target both during and after the pandemic. Ventilators, for example, were on no one's radar before COVID-19 hit. In March 2020, when they were suddenly considered essential for fighting the coronavirus, the U.S. government invoked the Defense Production Act (DPA) to push domestic manufacturers to make them. By the summer, however, medical professionals determined that ventilators were not as critical as once thought, but producers continued to churn them out under government orders, leading to reports of the goods "piling up" in a strategic reserve or being donated to "countries that don't need or can't use them." (Recall, moreover, that the United States was already a major global producer of these and other medical devices before the pandemic began.) According to the USITC's December 2020 report, other DPA-funded medical goods production will only come online after mid-2021, when the pandemic may have subsided. Where will these "essential goods" go when they are no longer essential?

Given these interventions, as well as the numerous U.S. companies that independently expanded operations or entered the medical goods market in response to the pandemic, it is an open question as to whether additional government action is needed to boost domestic production of medical goods. Indeed, companies such as Mark Cuban's new generic drug company, are in the process of adding domestic capacity without government subsidies. By the time U.S. policymakers decide to intervene in the U.S. market, it will look much different than the one on which they based their decision and will likely change again by the time any government-supported production comes online.

Finally, there is a serious risk that future government interventions will have political, rather than economic, motivations—similar to the ones that reportedly drove the Trump administration's doomed subsidies to Eastman Kodak. According to a July 2020 Congressional Research Service report, for example, the Department of Defense invoked the DPA to give hundreds of millions of dollars, appropriated under the Coronavirus Aid, Relief, and Economic Security Act to fight COVID-19, to politically connected industries (shipbuilding, semiconductors, space-based defense, aviation, microelectronics, rare earth mining, etc.) that are at best tangentially related to the pandemic. The report adds that these and other COVID-19

actions lacked transparency and accountability, led to the reassignment of one official, and were opposed by several House committees because they were not, as Congress intended, "reserved for health and medical countermeasures." The Government Accountability Office found similar transparency problems a few months later.

As explained in my recent paper (see enclosure), moreover, protectionism often *undermines* economic resiliency by weakening a country's economy and manufacturing sector—a conclusion supported by decades of academic research. For example, International Monetary Fund economists in 2018 examined data for 151 countries over 51 years (1963–2014) and found that "tariff increases lead, in the medium term, to economically and statistically significant declines in domestic output and productivity" as well as more unemployment and higher inequality. These harms were amplified for the U.S. manufacturing sector: increased tariffs on manufacturing inputs (e.g., steel) resulted in a statistically significant decline in manufacturing sector-wide output (6.4 percent) and productivity (3.9 percent) five years after the tariff hikes in question. Economists have come to similar conclusions in the context of COVID-19: a November 2020 analysis, for example, found that the economic costs of "localizing" global supply chains for medical goods would lower economic activity and incomes yet also prove unable to insulate countries from a pandemic-induced economic shock.

The United States' history of implementing nationalist policies on economic security grounds—for steel, ships, machine tools, semiconductors, and other "essential" goods—also reveals a long track record of high costs, high risks, failed objectives, and unintended consequences. In case after case, consumers (including many American manufacturers) were harmed and the protected industries did not emerge stronger or more resilient—in fact, just the opposite. This checkered history must be considered when evaluating new proposals to support certain industries on "resiliency" grounds.

Tariffs, "Buy American" mandates, and other economic nationalist measures can impose amplified harms for small U.S. manufacturers that lack the market power to negotiate discounts with their suppliers or to pass on higher input costs to their customers, or lack the resources—lawyers, accountants, lobbyists, etc.—to secure government subsidies or exemptions from import restrictions. For example, the exclusion processes for the current "Section 232" (steel and aluminum) and "Section 301" (China) tariffs, with which I have intimate familiarity as a former practicing trade attorney, are opaque, costly, and thus dominated by larger U.S. importers. Completing an exclusion request can take days, if not weeks, and cost companies tens of thousands of dollars in legal fees (not to mention time that in-house employees could have better spent on their actual jobs).

By contrast, there is little to indicate that trade and investment openness has made the United States less economically resilient. In fact, openness in many cases can *decrease* a country's vulnerability to demand or supply shocks, or it can help the economy recover. This conclusion makes intuitive sense—greater trade and investment openness might make an economy more vulnerable to *external* supply or demand shocks, but it also helps reduce a nation's vulnerability to (and improve its recovery from) *domestic* shocks—and is borne out in academic research. Extensive literature also ties trade openness to improved economic performance more broadly. A 2018 paper from Robert Feenstra summarized the studies on the long-run, overall gains from trade for the United States, calculating total average gross domestic product (GDP) gains of 1.1 percent per year due to increased product variety arising

from imports, the productivity-enhancing effects of trade-induced creative destruction, and pro-competitive effects on domestic prices. Other studies have shown similar benefits for the U.S. economy.

Overall, the evidence and analysis refute current arguments that economic nationalism would bolster the U.S. industrial base (and thus national resiliency).

Market-Oriented Reforms Can Support Resiliency and Small Manufacturers

While the "death" of the U.S. manufacturing sector and our economic "vulnerability" and dependency have been greatly exaggerated, several market-oriented policy reforms would support resiliency and smaller manufacturers by strengthening the U.S. economy generally and boosting the manufacturing sector's performance in particular:

- **Unilateral liberalization of tariffs on industrial inputs and medical goods.** President Trump's tariffs harmed the U.S. manufacturing sector (particularly smaller producers), increased uncertainty, and antagonized allies while providing little long-term benefit to the protected domestic industries at issue. At the same time, imports of PPE and pharmaceuticals have proven vital in fighting COVID-19. Eliminating import restrictions would thus provide an immediate boost to the U.S. manufacturing sector and additional relief during and after the pandemic. Longer term, Congress should reform or eliminate the U.S. laws that provide the president with vast discretion to impose tariffs on "national security" or other grounds without any congressional input or oversight.
- **Eliminating Buy American restrictions.** As Cato scholars have argued for decades, Buy American procurement requirements are bad law, bad economics, bad trade policy, and bad politics—and can especially harm U.S. manufacturers. The federal government should eliminate these restrictions, particularly for the procurement of essential goods and services.
- **Improving human capital.** In order to address immediate concerns regarding the dearth of qualified U.S. manufacturing workers in science, technology, engineering, and mathematics fields, the federal government should significantly expand high-skilled immigration—restrictions on which have been shown to encourage multinational corporations to offshore jobs and R&D activities to their affiliates in more welcoming countries and to benefit potential U.S. adversaries, especially China, in terms of new jobs, new businesses, and new innovations. Over the longer term, private-sector training and apprenticeship programs, such as the employer-funded Federation for Advanced Manufacturing Education program, can equip native workers for the future needs of advanced manufacturing industries and supplement federal, state, and local government educational policies.
- **Eliminating "never needed" regulations.** During the COVID-19 pandemic, state and federal governments temporarily suspended hundreds of regulations to boost domestic production, investment, and adjustment during the national emergency, revealing in the process that these "never needed" regulations discouraged economic growth and dynamism while providing little, if any, public benefit. Although many of these regulations affect nonmanufacturing issues and industries (e.g., physician licensing), many others—such as FDA testing and approval of medical goods—directly inhibit the domestic production of certain essential goods. The USITC cited these and other U.S.

regulations as a major impediment to boosting domestic medical goods production during the pandemic. Other regulations, such as biofuels mandates, increase production costs for U.S. manufacturers. Repeal of these regulations would therefore boost not only economic growth generally but also American manufacturers directly—all to the benefit of economic resiliency.

Additional government action—for example, subsidies, government stockpiles or private inventory mandates—need not be considered unless and until these and other market-oriented policies prove insufficient to satisfy legitimate security concerns. It is difficult to conceive, however, of scenarios in which new and expansive industrial policy programs would be warranted.

Conclusion

Economic openness and global interdependence undoubtedly risk the importation of economic shocks—including pandemics—into the United States that roil supply chains for essential goods and cause serious disruptions to our daily lives. However, both theory and practice show that this same openness can promote global stability and improve the nation's resilience in times of national emergency, *and* that nationalist policies present a far *greater* risk to our ability to withstand and respond to economic shocks—even when such policies are implemented on security, rather than purely economic, grounds.

Such risks are most acute for small U.S. manufacturers that lack the size or resources to pass on higher costs or win special treatment from the government - not only discouraging these companies from additional investing and hiring but likely putting them at a competitive disadvantage *vis a vis* their larger domestic competitors. Indeed, research shows that American industrial policies often boost the market power of large firms, especially manufacturing input providers, at the expense of their smaller customers or competitors. Market-oriented policies, by contrast, can act as a check on such power and improve U.S. economic dynamism and performance in the process.

Sincerely,

/s/

Scott Lincicome
Senior Fellow in Economic Studies
Cato Institute

Enclosure

Policy Analysis CATO INSTITUTE

January 27, 2021 | Number 907

Manufactured Crisis

"Deindustrialization," Free Markets, and National Security

By Scott Lincicome

EXECUTIVE SUMMARY

Both the American left and right often use "national security" to justify sweeping proposals for new U.S. protectionism and industrial policy. "Free markets" and a lack of government support for the manufacturing sector are alleged to have crippled the U.S. defense industrial base's ability to supply "essential" goods during war or other emergencies, thus imperiling national security and demanding a fundamental rethink of U.S. trade and manufacturing policy. The COVID-19 crisis and U.S.-China tensions have amplified these claims.

This resurgent "security nationalism," however, extends far beyond the limited theoretical scenarios in which national security might justify government action, and it suffers from several flaws.

First, reports of the demise of the U.S. manufacturing sector are exaggerated. Although U.S. manufacturing sector employment and share of national economic output (gross domestic product) have declined, these data are mostly irrelevant to national security and reflect macroeconomic trends affecting many other countries. By contrast, the most relevant data—on the U.S. manufacturing sector's output, exports, financial performance, and investment—show that the nation's total productive capacity and most of the industries typically associated with "national security" are still expanding.

Second, "security nationalism" assumes a need for broad and novel U.S. government interventions while ignoring the targeted federal policies intended to support the defense industrial base. In fact, many U.S. laws already authorize the federal government to support or protect discrete U.S. industries on national security grounds.

Third, several of these laws and policies provide a cautionary tale regarding the inefficacy of certain core "security nationalist" priorities. Case studies of past government support for steel, shipbuilding, semiconductors, and machine tools show that security-related protectionism and industrial policy in the United States often *undermines* national security.

Fourth, although the United States is not nearly as open (and thus allegedly "vulnerable") to external shocks as claimed, global integration and trade openness often bolster U.S. national security by encouraging peace among trading nations or mitigating the impact of domestic shocks.

Together, these points rebut the most common claims in support of "security nationalism" and show why skepticism of such initiatives is necessary when national security is involved. They also reveal market-oriented trade, immigration, tax, and regulatory policies that would generally benefit the U.S. economy while also supporting the defense industrial base and national security.

Scott Lincicome is a senior fellow in economic studies at the Cato Institute.

2

> "Free marketers largely reject the interventionist critique but do acknowledge the potential need for security-related protectionism and industrial policy."

THEORETICAL JUSTIFICATIONS FOR NATIONAL SECURITY PROTECTIONISM AND INDUSTRIAL POLICY

"National security" has long been invoked to justify government policies intended to support manufacturing in case of war or another emergency. The justification has been offered not only by trade skeptics and supporters of industrial policy (i.e., targeted and directed government efforts to plan for specific future industrial outputs and outcomes[1]) from Alexander Hamilton to Donald Trump but also by advocates of free markets.[2]

The general argument of each side is similar: open markets may be good in most cases, but ensuring the productive capacity of essential manufacturing sectors can warrant the imposition of tariffs, subsidies, or other types of industrial planning. Trade skeptics and industrial policy advocates go further, however, by arguing that American "deindustrialization" (and, by extension, "dependency" on foreign production) justifies interventionist U.S. trade and economic policy. Indeed, the absence of such policies is often alleged to have caused the manufacturing sector's demise. Related to the first point, the skeptics and industrial policy advocates are also trusting of the efficacy of protectionism and industrial policy to achieve national security objectives. These same individuals further assume that open trade is incompatible with national security and economic "resiliency."

An April 2020 op-ed from Sen. Marco Rubio (R-FL) is indicative of the interventionist case:

> Any prudent policymaker should recognize that both efficiency and resiliency are values we should prioritize and seek to balance. But that's not what we have done in recent decades. [U.S. economic policy] choices, from offshoring to building an economy based on finance and service, have produced one of the most efficient economic engines of all time. But a pendulum can swing too far in one direction. And when an economy lacks resiliency, it can be devastating in a crisis. . . .
>
> Today, the result of these failed policy choices is that our manufacturing base is severely diminished, and millions of productive jobs that relied on it are gone. The American domestic supply chain devoted to producing vital medical supplies like generic pharmaceuticals and respirators has withered.[3]

Rubio goes on to claim that these problems require "a new vision to create a more resilient economy" and proposes a "sweeping pro-American industrial policy" that involves "re-shoring of supply chains integral to our national interest—everything from basic medicines and equipment to vital rare-earth minerals and technologies of the future." And he is certainly not alone: prominent politicians and pundits on the right and left routinely lament the harms that "deindustrialization" has imposed on U.S. national and economic security and propose "sweeping" programs (protectionism, domestic procurement mandates, subsidies, etc.) to fix this alleged problem.

Free marketers largely reject the interventionist critique but do acknowledge the potential need for security-related protectionism and industrial policy. Adam Smith explained in *The Wealth of Nations* that one of the "two cases in which it will generally be advantageous to lay some burden upon foreign for the encouragement of domestic industry" is "when some particular sort of industry is necessary for the defence of the country."[4] Smith noted that Great Britain's military, for example, needed to maintain "the number of its sailors and shipping" and therefore supported measures to promote the domestic shipping industry at the expense of domestic consumers or other countries. Two centuries later, Milton and Rose Friedman noted that while "the argument that a thriving domestic steel industry, for example, is needed for defense . . . is more often a rationalization for particular tariffs than a valid reason for

them, it cannot be denied that on occasion it might justify the maintenance of otherwise uneconomical productive facilities."[5] To this day, stalwart defenders of open trade and free markets permit a "national security" exception to those policies.[6]

However, these same scholars are quick to limit the national security exception. After granting the "defence" basis for Britain's Navigation Acts, for example, Smith explained that it arose during a time of "violent animosity" between Britain and Holland—not merely in expectation of such hostilities—and was specifically needed to reduce "the naval power of Holland, the only naval power which could endanger the security of England." He added that it would "very seldom" be "reasonable" to pursue such protectionism ("to tax the industry of the great body of the people" so as not "to depend upon our neighbors for the supply").[7]

The Friedmans were more direct (and skeptical): "To go beyond this statement of possibility and establish in a specific case that a tariff or other trade restriction is justified in order to promote national security, it would be necessary to compare the cost of achieving the specific security objective in alternative ways and establish at least a prima facie case that a tariff is the least costly way. Such cost comparisons are seldom made in practice."[8] Contemporary economists and free marketers have reiterated such concerns: "Given the negative impact of tariffs on wealth, when they are proposed, even under the national defense justification, they should be carefully examined to see if there is a true national defense issue or if domestic firms are merely justifying tariffs for protection from competition."[9]

This skepticism—mostly absent from Washington—is indeed warranted: analyses of the U.S. manufacturing sector and the relationship between trade and national security, as well as the United States' long and checkered history of security-related protectionism, undermine the theoretical justifications for imposing protectionism and industrial policy in the name of national defense. Instead, open trade, freer markets, and global interdependence will in almost all cases produce better outcomes in terms of national security and, most importantly, preventing wars and other forms of armed conflict.

THE REALITY OF AMERICAN MANUFACTURING AND NATIONAL SECURITY

Today's security nationalists often emphasize two trends—declining U.S. manufacturing employment and the sector's declining share of U.S. economic output (as measured by gross domestic product [GDP])—when lamenting American industrial decline and proposing new policies to support domestic manufacturing and national security. Figure 1 shows that both trends have occurred.

However, these trends provide little insight into the state of the U.S. defense industrial base or government policies affecting it, because they primarily reflect secular, global macroeconomic forces mostly unaffected by domestic policy and say little about the productive capacity of the United States overall or of the industries that are most essential to U.S. national security.

Secular Trends Driving Changes to U.S. (and Global) Manufacturing

Both declining manufacturing jobs and the sector's declining share of GDP primarily reflect long-term global trends disconnected from specific economic policies, whether "free market" or "interventionist."

JOBS. The long-term decline in U.S. manufacturing jobs coincided with rising sector output and was mirrored in developed countries around the world—including those with economies more centered on manufacturing, with long-standing trade surpluses in goods, or with more aggressive industrial policies.[10] (See Table 1 and Figure 2.) In fact, Robert Lawrence's 2020 examination of 60 countries between 1995 and 2011 found that nations with manufacturing trade surpluses experienced slightly *larger* declines in manufacturing employment than those

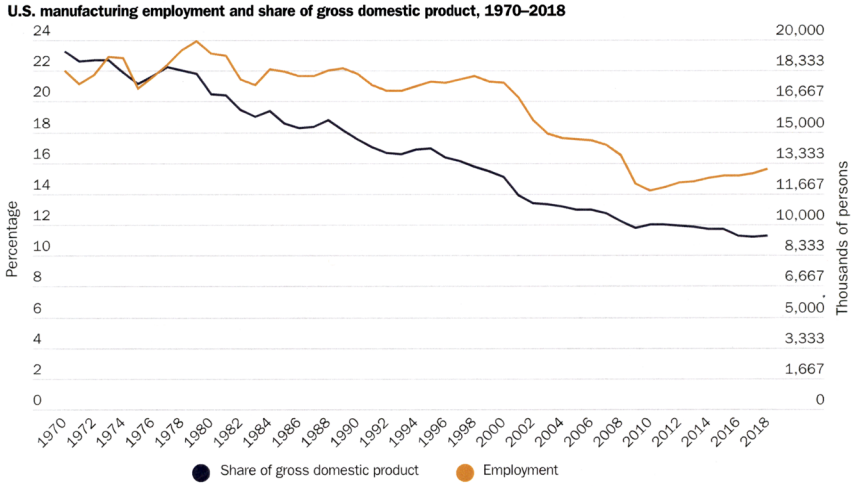
3

"The decline in U.S. manufacturing jobs coincided with rising sector output and was mirrored around the world—including in countries more centered on manufacturing, with trade surpluses, or with industrial policies."

4

Figure 1

U.S. manufacturing employment and share of gross domestic product, 1970–2018



Sources: United Nations data, https://unstats.un.org/unsd/snaama/Downloads; and Conference Board.

Table 1

Share of employment in manufacturing, selected advanced economies (percentage)

Year	United States	Australia	Canada	France	Germany	Italy	Japan	Netherlands	United Kingdom
1973	24.75	23.35	22	28.88	36.74	27.86	27.78	25.29	32.06
1990	16.77	14.42	15.79	21.27	31.62	22.56	24.33	19.08	22.13
2000	14.35	12.05	15.26	17.87	23.86	22.91	20.66	14.85	14.82
2010	10.13	8.9	10.27	13.32	20.1	18.87	16.95	10.64	9.85
2016	10.17	7.51	9.37	12.15	19.15	18.23	16.1	9.52	9.46

Source: Robert Z. Lawrence, "Recent US Manufacturing Employment: The Exception That Proves the Rule," Peterson Institute for International Economics Working Paper no. 17-12, November 2017.

with manufacturing trade deficits and that manufacturing job losses were as large in countries with "improving" manufacturing trade balances over this period as those with "worsening" ones.[11]

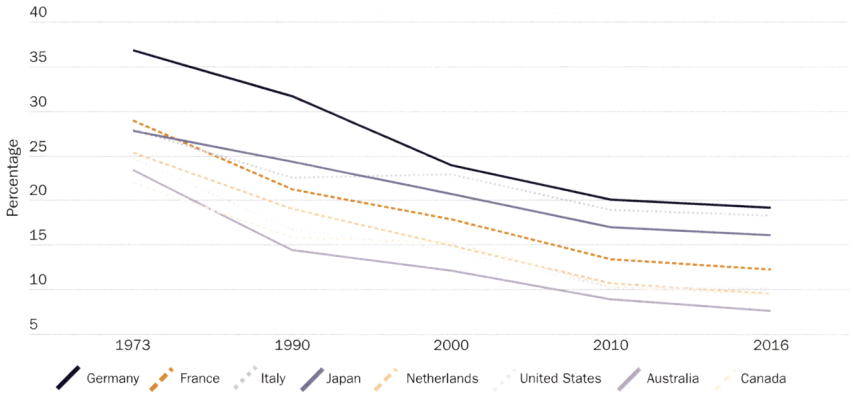
As shown in Figure 3, countries generally follow the same inverted-U pattern of economic development, first adding and then losing manufacturing jobs as they develop.

Figures 1–3 establish that, though manufacturing in some countries represents a larger total share of a country's domestic workforce than in the United States, the *loss* of manufacturing jobs—and thus the basis for any "*de*industrialization" claim—is happening around the world. (Despite recent U.S. industrial job gains, the U.S. Bureau of Labor Statistics expects the longer-term downward trend to continue in the

5

Figure 2

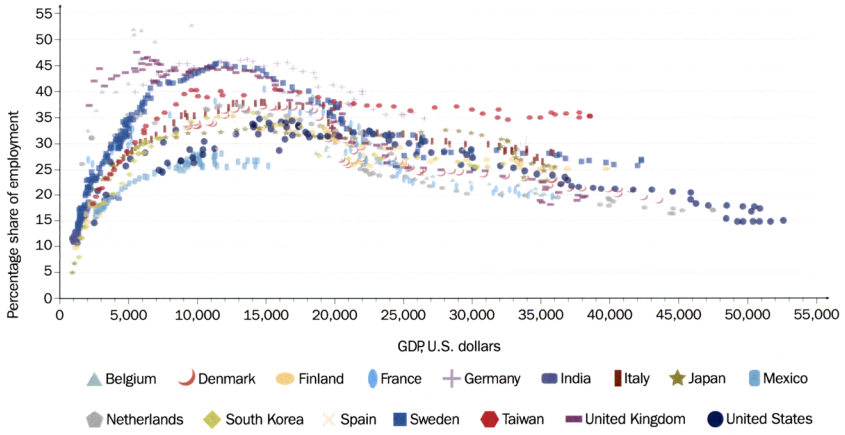
Share of employment in manufacturing in selected advanced economies



Source: Robert Z. Lawrence, "Recent US Manufacturing Employment: The Exception That Proves the Rule," Peterson Institute for International Economics Working Paper no. 17-12, November 2017.

Figure 3

Manufacturing share of total employment vs. gross domestic product (GDP) per capita



Source: "GDP per Head vs Share of Industry in Employment, 1801 to 2015," Our World in Data, https://ourworldindata.org/grapher/gdp-vs-manufacturing-employment?time=1801..2015.

6

> "In reality, neither job gains nor job losses demonstrate a vibrant (or lagging) American industrial sector."

next decade, projecting a loss of almost 445,000 U.S. manufacturing jobs from 2019 to 2029.[12]) Thus, for example, U.S. policy might have been able to increase overall manufacturing employment at some point, but the trends—including the significant decline in jobs from the late 1990s to the late 2000s—would have remained essentially unchanged.[13] Therefore, the changes in manufacturing jobs alone provide little insight into the state of American manufacturing or related U.S. policies.

Aggregate employment trends also say little about the ability of U.S. workers to produce essential goods during a national emergency. For example, U.S. manufacturing employment increased by almost 1 million jobs between 2010 and 2018, "outperforming" Germany, Japan, and China in the process. However, over the same period, real manufacturing value-added per worker and per hour worked in the United States increased by only 0.3 percent per year and 0.1 percent per year, respectively, as compared to 5.6 percent and 5.7 percent per year between 2000 and 2008—a time of significant manufacturing job *loss* in the United States.[14] In other words, American workers were improving their ability to produce manufactured goods (and thus to supply the economy in times of war or other emergency) at a much more rapid pace during the height of "deindustrialization" than during the subsequent period of "reindustrialization." In reality, neither job gains nor job losses demonstrate a vibrant (or lagging) American industrial sector. There also is little to indicate that U.S. manufacturing jobs deserve special government support.[15]

GDP SHARE. Manufacturing's declining share of total U.S. GDP also reflects secular trends largely disconnected from U.S. government policy. First, the change in the industrial sector's GDP share reflects the relative strength of the U.S. services sector instead of the weakness of American manufacturing. Indeed, between 1997 and 2019, real gross output and real value-added of private services–producing industries increased by 87 percent and 77.4 percent, respectively, while the same metrics for U.S. manufacturing increased by a slower-but-still-respectable 18.7 percent and 52.8 percent—continuing long-term trends in these U.S. sectors dating back to the 1940s.[16]

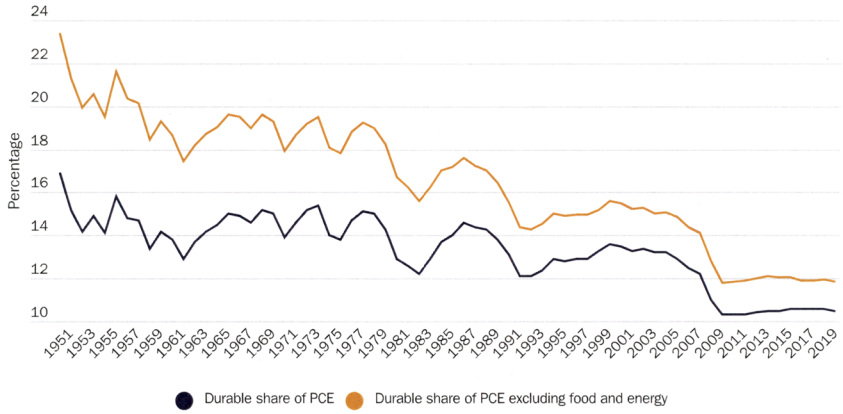
Second, the relative growth of services versus manufacturing reflects fundamental shifts in consumption patterns in the United States and other countries away from goods and toward services.[17] In the United States, "consumers, government, and investors have been devoting declining shares of nominal spending to goods relative to services" since the 1960s, and "the overall impact, inclusive of investment expenditure on equipment and software, was a decline in nominal US spending on goods relative to services by 1.47 log points (percent) per year over the entire period."[18] Thus, U.S. consumers were allocating half of all their spending on consumption to goods—50.3 percent—in 1960 but only 33 percent by 2010. Over the same period, U.S. government consumption and investment expenditure on goods dropped from 61 percent to 42 percent.[19] As shown in Figure 4, Americans' consumption of durable goods as a share of total consumption has similarly declined since the 1950s.

These relative consumption trends coincide with the U.S. manufacturing sector's declining share of U.S. GDP (see Figure 1), and these factors have coincided over time: documenting trends in U.S. consumption and manufacturing value-added between 1900 and 2000, for example, economists Francisco Buera and Joseph Kaboski found a "strong connection" between the two.[20] The onset of COVID-19 in the United States again showed the link between consumer spending and manufacturing sector performance: U.S. manufacturers during the summer of 2020 *outperformed* domestic service providers because several factors—including "catch-up" purchases that were delayed in the spring; continued restrictions on many services; consumer unease about public exposure; and stimulus payments—had pushed homebound Americans to increase their relative consumption of goods over this period.[21]

Nor are the consumption and output trends limited to the United States or even other developed countries.[22] Lawrence Edwards and

Figure 4

Durable goods share of U.S. personal consumption, 1950–2019



Source: "Table 2.3.5. Personal Consumption Expenditures by Major Type of Product," National Income and Product Accounts, National Data, Bureau of Economic Analysis, last revised November 25, 2020, https://apps.bea.gov/iTable/iTable.cfmreqid=19&step=2&isuri=1&1921=survey#reqid=19&step=2&isuri=1&1921=survey.

Note: PCE = personal consumption expenditures.

Robert Lawrence found that the share of national spending on goods between 1970 and 2010 declined at a similar rate in Australia, Canada, Denmark, France, Italy, South Korea, the Netherlands, the United Kingdom, and the United States (though the United States had the lowest total share [34 percent] by 2010).[23] As shown in Figure 5, advanced economies' manufacturing-GDP shares followed suit.

The declining role of manufacturing in a nation's economy is a standard story of economic development, not cause for alarm or criticism of national economic policy. As shown in Buera and Kaboski's 2012 examination of 31 countries representing 68 percent of world population and 80 percent of 2000 GDP (reproduced in Figures 6a, 6b, 6c, and 7), both the manufacturing sector's share of total value-added (Figure 6a) and its relationship to services value-added (see Figure 7) follow the same inverted-U pattern (increasing then decreasing) as *every* nation develops.[24] Each country's experience with services (see Figure 6b) and agriculture (see Figure 6c) is also similar to those of other countries.

In sum, both the manufacturing employment and GDP-share trends occurring in the United States reflect macroeconomic forces affecting most industrialized countries around the world in the same way and thus cannot be a proxy for the state of the U.S. manufacturing sector or an indicator of the success or failure of previous U.S. policy.

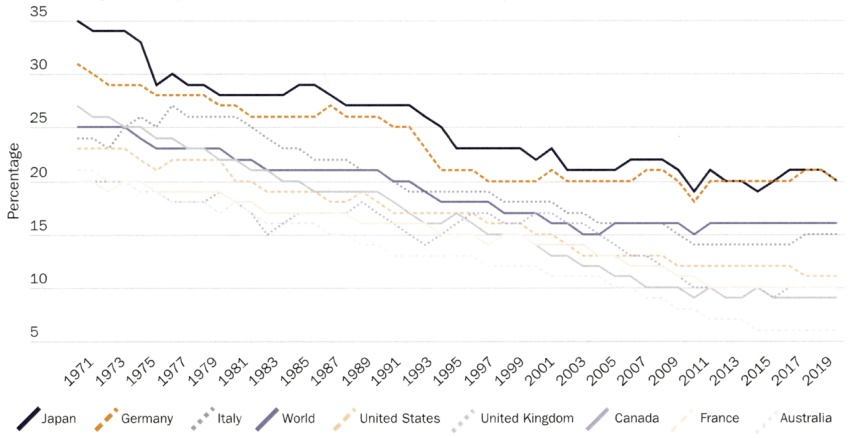
U.S. Productive Capacity Remains High Both Overall and in Security-Related Industries

Furthermore, employment and GDP share trends say little about the nation's "industrial capabilities" (i.e., its ability to produce the goods that the country needs in times of war or other national emergencies), which along with access to similar capabilities abroad is what the U.S. Department of Defense (DOD) considers critical for national security.[25] By this metric, the United States shows little weakness. Despite

> "The industrial sector's declining GDP share reflects the relative strength of the U.S. services sector instead of the weakness of American manufacturing."

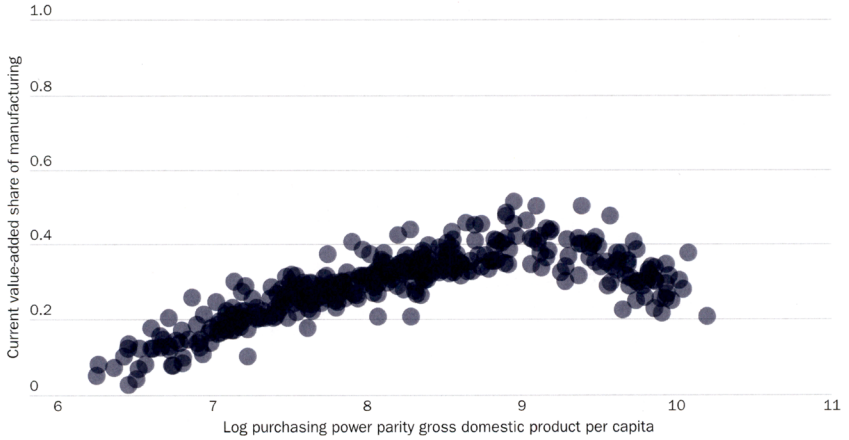
8

Figure 5
Manufacturing share of gross domestic product in selected advanced economies



Source: United Nations data, https://unstats.un.org/unsd/snaama/Downloads.

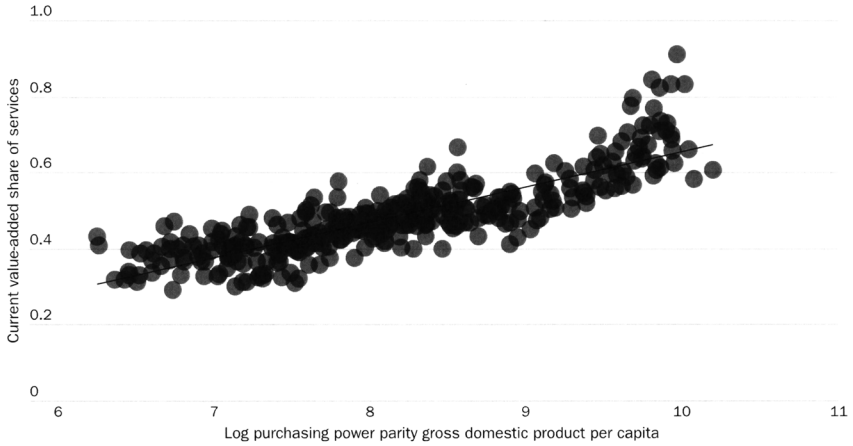
Figure 6a
Manufacturing share vs. per capita income (country panels)



Source: Francisco J. Buera and Joseph P. Kaboski, "Scale and the Origins of Structural Change," *Journal of Economic Theory* 147, no. 2 (March 2012).

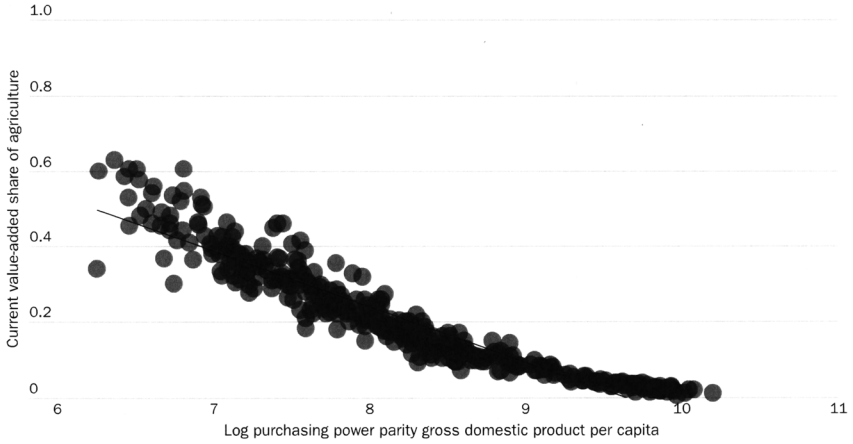
9

Figure 6b
Services share vs. per capita income (country panels)



Source: Francisco J. Buera and Joseph P. Kaboski, "Scale and the Origins of Structural Change," *Journal of Economic Theory* 147, no. 2 (March 2012).

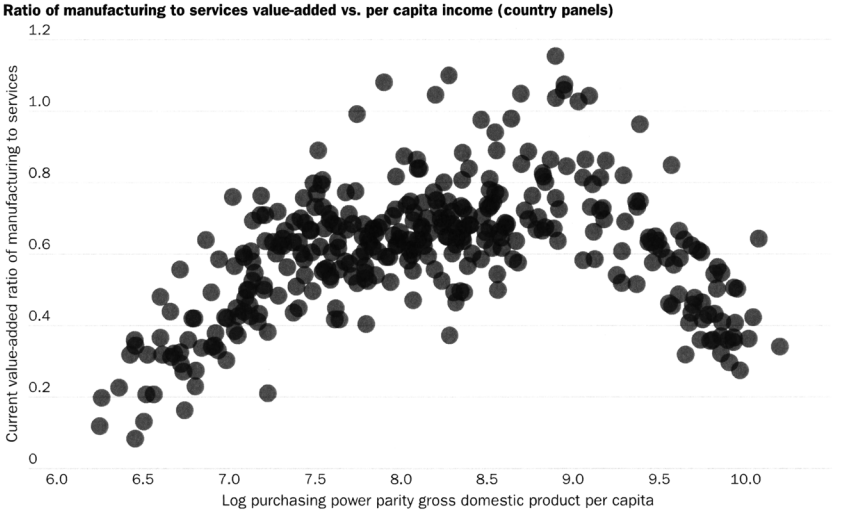
Figure 6c
Agriculture share vs. per capita income (country panels)



Source: Francisco J. Buera and Joseph P. Kaboski, "Scale and the Origins of Structural Change," *Journal of Economic Theory* 147, no. 2 (March 2012).

10

Figure 7
Ratio of manufacturing to services value-added vs. per capita income (country panels)



Source: Francisco J. Buera and Joseph P. Kaboski, "Scale and the Origins of Structural Change," *Journal of Economic Theory* 147, no. 2 (March 2012).

> "The manufacturing industries most closely associated with 'national security' have prospered."

popular claims that the United States has suffered a broad decline in productive capacity, the U.S. manufacturing sector actually remains among the most productive in the world and has expanded since the 1990s—continuing earlier period trends in output, investment, and profitability that the Cato Institute's Daniel Ikenson documented in 2007.[26] Also, the manufacturing industries most closely associated with "national security" (e.g., metals, transportation, defense, computers and electronics, pharmaceuticals, and medical goods) have prospered.

THE UNITED STATES REMAINS A GLOBAL MANUFACTURING LEADER. Comparisons of U.S. manufacturing with other countries' sectors (see Table 2) show that the United States continues to be at or near the top of most categories, including output, exports, and investment.

As shown in Table 2, the United States in 2018 ranked second in the world in total real manufacturing value-added and merchandise exports. The United States ranked third globally for exports of "manufactures"; however, this category excludes important U.S. manufactured goods such as fuels and certain foods, and European Union (EU) bloc and country numbers are inflated because they include intra-EU trade (e.g., German exports to France).[27] The U.S. manufacturing sector's performance is also strong on a per capita or per manufacturing worker basis, outperforming China and several other top manufacturing countries. Among Organisation for Economic Co-operation and Development nations, moreover, the United States is the top recipient of manufacturing foreign direct investment (FDI)—more than doubling the second-place nation. In 2018, FDI inflows into the U.S. manufacturing sector alone (almost $167 billion) were larger than *total* FDI inflows into China for the same year ($138 billion). Inward FDI stocks in the U.S. manufacturing sector reached $1.77 *trillion* that same year.[28]

Table 2

Top manufacturing countries, 2018 (millions of dollars, unless otherwise noted)

Country	Manufacturing value-added	Merchandise exports	Manufactures exports	FDI inflows (total)	FDI inflows (manufacturing)	Manufacturing value-added per worker (dollars)
China	$3,884,451	$2,486,695	$2,318,153	$138,305	n/a	$29,188
United States	$2,300,398	$1,663,982	$1,176,498	$253,561	$166,889	$177,127
Japan	$959,243	$738,143	$641,106	$9,858	$13,242	$92,448
Germany	$746,485	$1,560,539	$1,364,575	$73,570	$12,826*	$96,632
South Korea	$427,724	$604,860	$528,991	$12,183	$5,245	$94,841
India	$409,087	$324,778	$223,265	$42,156	n/a	$7,169
Italy	$289,160	$549,527	$452,134	$32,886	$8,481	$73,292
United Kingdom	$279,298	$486,439	$468,817	$65,299	$4,058*	$108,223
France	$260,321	$581,774	$462,086	$38,185	$20,128	$100,938
Mexico	$214,789	$450,685	$362,608	$34,745	$16,318	$29,931

Sources: United Nations Conference on Trade and Development; World Trade Organization; Conference Board; Organisation for Economic Co-operation and Development; and author's calculations.

Notes: FDI = foreign direct investment. Gross domestic product value-added figures were provided in 2015 dollars and have not been adjusted. All other figures are in 2018 dollars. Organisation for Economic Co-operation and Development data were not provided for "n/a" countries. Germany FDI inflows (manufacturing) is 2017, and UK FDI (manufacturing) is 2015 (the latest data available).

In short, the United States remains a major global manufacturer and a top destination for manufacturing investment.

THE UNITED STATES' INDUSTRIAL CAPABILITIES KEEP EXPANDING. Second, historical data on the U.S. manufacturing sector show it to be growing. As shown in Figure 8, real (inflation-adjusted) U.S. manufacturing value-added and gross output were up significantly between 1997 and 2018.

Furthermore, investment in the manufacturing sector—capital expenditures, research and development (R&D), and FDI—has been consistent and strong. (See Figures 9 and 10.) Finally, as shown in Figure 11, the sector has also experienced improved financial performance since 2001 (the first year of data available), with inflation-adjusted gains in revenues, post-tax income, and assets.

Based on these and other data, the last two DOD reports on the U.S. defense industrial base concluded that it is "profitable and expanding" overall. In fact, the latest report for fiscal year 2019 (issued June 23, 2020) states that the largest six prime defense suppliers (Lockheed Martin, Boeing, Northrop Grumman, Raytheon, General Dynamics, and BAE Systems) "are financially healthy and continue to expand in market share" and that their "investments hit a six year high in 2018 at $33.9 billion with firms investing largely in acquisition of subsidiaries, R&D, and capital expenditures."[29]

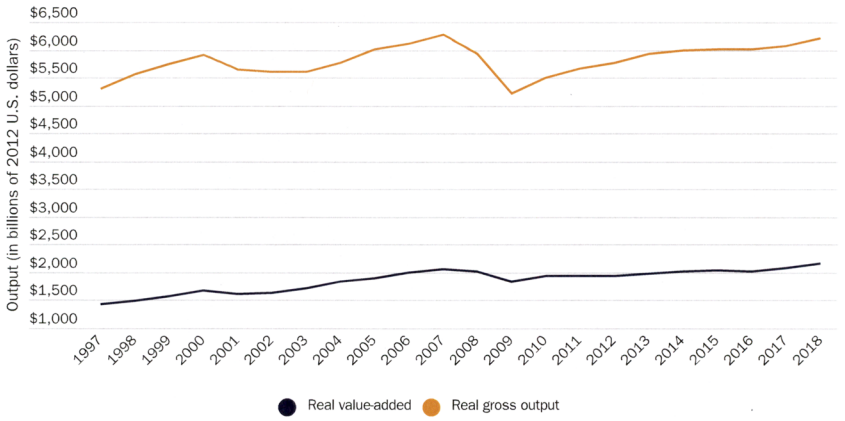
A longer-term view of these data is essential to evaluating the sector's performance. Some of the more negative analyses of U.S. manufacturing provide an incomplete view because they fail to account for either the Great Recession, which collapsed global output and employment, or the manufacturing "mini-recession" in 2015–16, caused by an unexpected collapse in global oil prices—issues clarified by updating the data through 2018 (when U.S. trade conflicts halted the sector's improvement).[30] Indeed, the problems with taking a narrow snapshot are revealed by examining employment trends in the United States and other top manufacturing countries

> "The United States remains a major global manufacturer and a top destination for manufacturing investment."

12

Figure 8

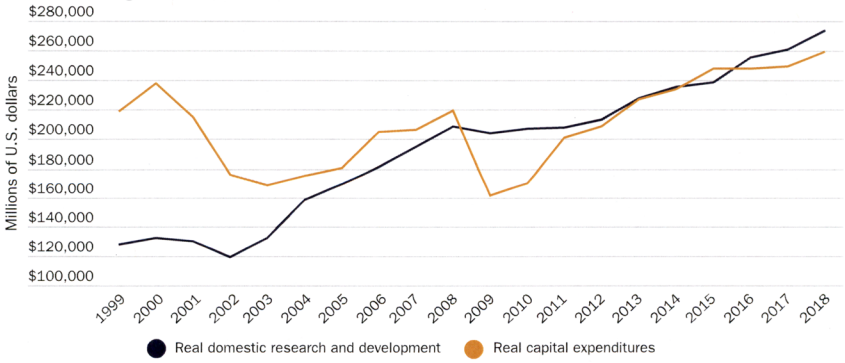
U.S. manufacturing output and value-added, 1997–2018



Source: "GDP-by-Industry," Bureau of Economic Analysis, updated December 10, 2020, https://apps.bea.gov/iTable/index_industry_gdpIndy.cfm.

Figure 9

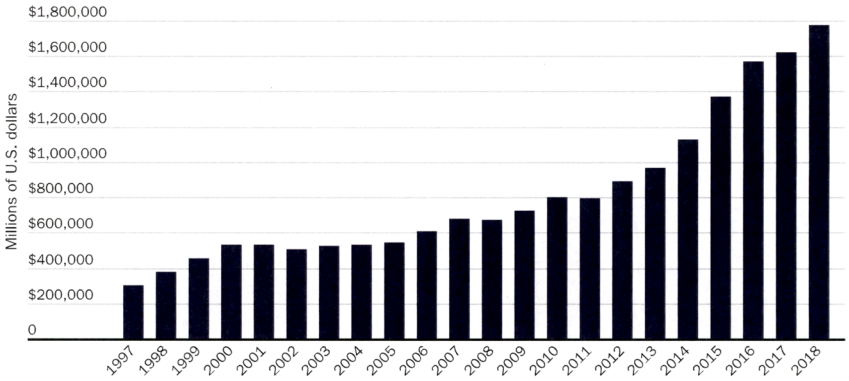
U.S. manufacturing investment, 1999–2018



Sources: "Research and Development: U.S. Trends and International Comparisons," Science and Engineering Indicators, National Science Board, https://ncses.nsf.gov/pubs/nsb20203/u-s-business-r-d; and "2019 Annual Capital Expenditures Survey Tables," U.S. Census Bureau, December 16, 2020, https://www.census.gov/data/tables/2019/econ/aces/2019-aces-summary.html.
Deflator: "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product," National Income and Product Accounts, National Data, Bureau of Economic Analysis, https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=3&isuri=1&1921=survey&1903=13#reqid=19&step=3&isuri=1&1921=survey&1903=13.

Figure 10

Real foreign direct investment position in the United States: manufacturing, 1997–2018

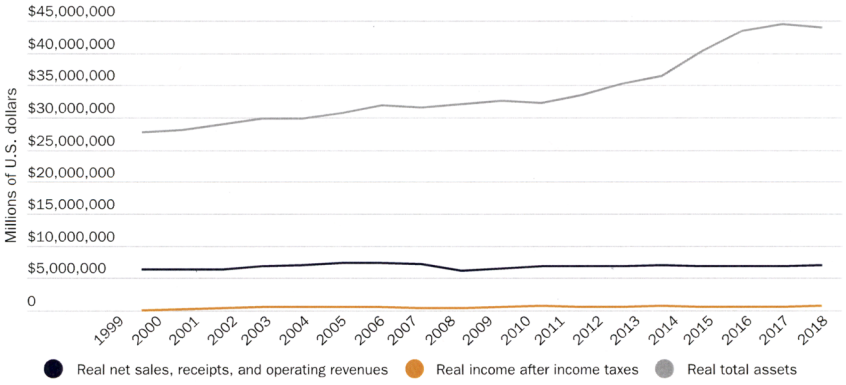


Source: "Foreign Direct Investment in the U.S.: Balance of Payments and Direct Investment Position Data," Bureau of Economic Analysis, https://www.bea.gov/international/di1fdibal.

Deflator: "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product," National Income and Product Accounts, National Data, Bureau of Economic Analysis, https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=3&isuri=1&1921=survey&1903=13#reqid=19&step=3&isuri=1&1921=survey&1903=13.

Figure 11

U.S. manufacturing sector financial performance, 2001–2018



Source: "Quarterly Financial Report (QFR): Manufacturing, Mining, Trade, and Selected Service Industries," U.S. Census Bureau, https://www.census.gov/econ/qfr/.

Deflator: "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product," National Income and Products Accounts, National Data, Bureau of Economic Analysis, https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=3&isuri=1&1921=survey&1903=13#reqid=19&step=3&isuri=1&1921=survey&1903=13.

14

> “Topline data hide significant changes in the manufacturing sector over the past two decades in response to various economic forces.”

between 2010 and 2018. These data show that the United States (1.1 percent annual growth; 956,000 jobs gained) has had stronger employment growth than Germany (1.0 percent; 440,000 jobs), Japan (–0.4 percent; –229,000 jobs), and China (–0.5 percent; –9.5 million jobs).[31] Just as it would be inappropriate to claim that this single datapoint captures the true state of these diverse, multitrillion dollar manufacturing sectors (or the national policies affecting them), so does using other short-term snapshots to argue the same.[32]

The topline data do, however, hide significant changes in the manufacturing sector over the past two decades in response to various economic forces. Some industries have indeed contracted since the 1990s, but often these changes reflect fundamental shifts in U.S. and global markets as opposed to a weak manufacturing sector. They are also often offset by gains in other, related industries. For example, as shown in Table 3, automobile manufacturing output dropped by almost 60 percent between 1997 and 2018, but light truck and SUV production grew by 175 percent over the same period.

This shift speaks to evolving U.S. consumer tastes (away from cars to SUVs) instead of American “deindustrialization” (though offshoring of some car production, especially to Mexico, has occurred). Furthermore, the high U.S. tariff on light trucks cannot explain increased U.S. SUV production, as only two-door SUVs are covered by the tariff. (The tariff also does not apply to imports from certain U.S. trade agreement partners.)[33]

These and other U.S. manufacturing data (see the Annex at URL) also reveal a flexible and dynamic sector that is generally responsive to market forces—a flexibility that can prove critical in times of unexpected national emergency. For example, high demand for hand sanitizer, cleaning products, and face masks in

Table 3
U.S. automotive production by industry

Industry segment	2018 real gross output (billions of U.S. dollars)	Percentage change (1997–2018)
Motor vehicles, bodies and trailers, and parts	711.7	53.4%
Automobile manufacturing	40.6	–58.7%
Light truck and utility vehicle manufacturing	311	175.0%
Heavy duty truck manufacturing	30.9	46.4%
Motor vehicle body, trailer, and parts manufacturing	326.1	41.5%
Motor vehicle body manufacturing	15.3	26.4%
Truck trailer manufacturing	9.7	19.8%
Motor home manufacturing	4.9	0.0%
Travel trailer and camper manufacturing	13.1	101.5%
Motor vehicle gasoline engine and engine parts manufacturing	36.6	11.2%
Motor vehicle electrical and electronic equipment manufacturing	26.4	22.8%
Motor vehicle transmission and power train parts manufacturing	40.2	17.5%
Motor vehicle seating and interior trim manufacturing	34.1	189.0%
Motor vehicle metal stamping	43.2	58.8%
Other motor vehicle parts manufacturing	74.3	54.1%
Motor vehicle steering, suspension component (except spring), brake systems manufacturing	28.5	19.2%

Source: “Gross Output by Industry,” Bureau of Economic Analysis, September 30, 2020, https://www.bea.gov/data/industries/gross-output-by-industry#:~:text=What%20is%20Gross%20Output%20by,inputs%20not%20counted%20in%20GDP).

the wake of COVID-19 caused small and large manufacturers across the country to retool their operations and thereby meet Americans' essential material needs.[34] This rapid transition is a testament to not only the hard work and ingenuity of U.S. retailers and manufacturers but also the United States' economic dynamism and industrial capabilities more broadly.

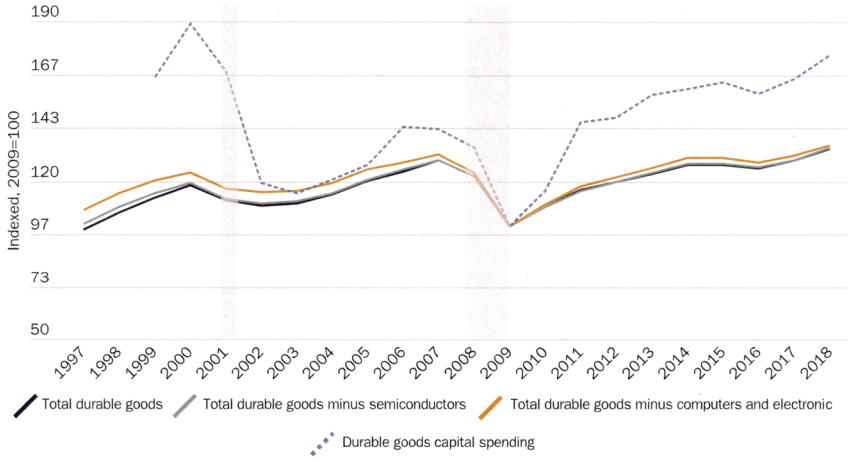
INDUSTRY-SPECIFIC DATA REVEAL STRENGTH WHERE IT COUNTS. Detailed breakdowns of U.S. manufacturing data also show a stark divide between durable goods (i.e., the goods such as metals, planes, and machinery that we most commonly associate with "national security") and nondurable goods (e.g., food and textiles). In particular, U.S. durable goods production (real gross output and real value-added) has increased significantly—by 35.9 percent and 109 percent, respectively—since 1997 (see Figure 12), while nondurable goods output has sagged (see Table 4). The durable-goods gains are not, as some have claimed, merely the result of adjustments for increases in computing power.[35] Excluding the entire computers and electronics industry (including semiconductors), U.S. durable goods' real gross output and real value-added still increased by more than 26 percent and 60 percent, respectively, since 1997 and, excluding only semiconductors, 109.1 percent and 35 percent.

Eliminating these thriving sectors, of course, *overcompensates* for any technical adjustment issues, as U.S. computer, electronics, and semiconductor firms undoubtedly produce important and globally competitive products and employ hundreds of thousands of American workers. Doing so also raises questions about what *other sectors* may need to

> "U.S. durable goods production has increased significantly since 1997, while nondurable goods output has sagged."

Figure 12

Real U.S. durable goods manufacturing output and investment



Sources: "Gross Output by Industry," Bureau of Economic Analysis, September 30, 2020, https://www.bea.gov/data/industries/gross-output-by-industry#:~:text=What%20is%20Gross%20Output%20by,inputs%20not%20counted%20in%20GDP); and "Annual Capital Expenditures: 2017," U.S. Census Bureau, March 13, 2019, https://www.census.gov/library/publications/2019/econ/2017-aces-summary.html.
Deflator: "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product," National Income and Product Accounts, National Data, Bureau of Economic Analysis, https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=3&isuri=1&1921=survey&1903=13#reqid=19&step=3&isuri=1&1921=survey&1903=13.

16

Table 4

Change in U.S. nondurable goods manufacturing output, total and select industries

Industry	Percentage change in real value-added (1997–2018)	Percentage change in real gross output (1997–2018)
Total nondurable goods	0.2%	3.53%
Food and beverage and tobacco products	8.3%	12.5%
Food manufacturing	45.6%	27.9%
Beverage manufacturing	86.2%	22.2%
Tobacco product manufacturing	–72.7%	–70.1%
Textile mills and textile product mills	–38.9%	–51.5%
Apparel and leather and allied products	–65.4%	–81.6%
Paper products	–36.3%	–22.4%
Printing and related support activities	5.6%	–30.1%
Petroleum and coal products	13.0%	21.5%
Chemical products	14.2%	4.9%
Nondurable goods (excluding textiles, apparel, paper, printing, tobacco)	22.9%	10.3%

Source: "GDP-by-Industry," Bureau of Economic Analysis, updated December 10, 2020, https://apps.bea.gov/iTable/index_industry_gdpIndy.cfm.

> "The industries that are most closely tied to national security—including those now prioritized due to COVID-19—have not experienced significant historical declines and in most cases have expanded."

be discounted or excluded when evaluating the "true" state of the nation's overall productive capacity. For example, should we also exclude the data for the paper and printing, tobacco, and magnetic and optical media (e.g., cassette tapes and CDs) industries—which have declined due to fundamental market changes and are thus unrelated to any "deindustrialization" concerns? Eliminating these industries would reveal even more impressive manufacturing sector gains since the late 1990s.

As shown in Table 4, moreover, declines in nondurable goods production have been driven by basic, low-margin consumables such as textiles and apparel; by tobacco; or by "dematerialized" goods such as paper—*not* other nondurables such as chemicals (including pharmaceuticals) and energy that might have a national security nexus.[36] Remove the aforementioned decliners, and nondurable goods' real value-added and gross output increase by 22.9 percent and 10.3 percent, respectively, between 1997 and 2018.

By contrast, the industries that are most closely tied to national security—including those now prioritized due to COVID-19—have not experienced significant historical declines and in most cases have expanded. (See Table 5.) This category includes the goods directly involved in national defense (e.g., tanks, missiles, and munitions), as well as those indirectly related, including metals, computer and electronic products (including or excluding semiconductors), motor vehicles, aerospace products, ships medical equipment, energy, chemicals, and pharmaceuticals. Although certain sub-industries' output has risen and fallen over different periods (to be expected given business cycles, changing U.S. military operations, and other factors), the overall picture is one of stability and health, not decline.

These data also refute a common myth that industries unrelated to national security have driven gains in U.S. manufacturing output—the well-worn "we make potato chips, not microchips" argument. They also underscore why tying U.S. national security to trends in manufacturing employment or GDP share is so misguided.

Industry-level analyses corroborate these data in the two industries—semiconductors and medical goods—that Washington policymakers are now targeting for security-related support.

Table 5

Performance of select U.S. manufacturing industries related to national security (billions of U.S. dollars)

Industry	Real gross output			Real value-added		
	2018 total	Percentage change (1997–2018)	Percentage change in (2009–2018)	2018 total	Percentage change (1997–2018)	Percentage change in (2009–2018)
Iron and steel mills and manufacturing from purchased steel	$106.40	6.0%	29.0%			
Ammunition, arms, ordnance, and accessories manufacturing	$22.10	172.8%	104.6%			
Semiconductor machinery manufacturing	$8.80	–9.3%	44.3%			
Turbine and turbine generator set units manufacturing	$13.60	44.7%	14.3%			
Speed changer, industrial high-speed drive, and gear manufacturing	$3.60	–5.3%	16.1%			
Mechanical power transmission equipment manufacturing	$4.60	–6.1%	35.3%			
Other engine equipment manufacturing	$27.90	19.2%	65.1%			
Computer and peripheral equipment manufacturing	$42.60	258.0%	–17.8%	$34.50	4828.6%	32.2%
Electronic computer manufacturing	$22.80	570.6%	–28.5%			
Computer storage device manufacturing	$5.90	18.0%	–9.2%			
Computer terminals and other computer peripheral equipment manufacturing	$14.30	27.7%	24.3%			
Communications equipment manufacturing	$80.40	226.8%	87.4%	$66.20	1906.1%	148.9%
Telephone apparatus manufacturing	$16.90	70.7%	85.7%			
Broadcast and wireless communications equipment	$59.50	404.2%	111.0%			
Other communications equipment manufacturing	$5.70	7.5%	1.8%			
Semiconductor and other electronic component manufacturing	$113.40	184.2%	24.9%	$87.90	1658.0%	47.7%
Semiconductor and related device manufacturing	$64.90	654.7%	36.6%			
Printed circuit assembly (electronic assembly) manufacturing	$19.30	–1.5%	9.0%			
Electromedical and electrotherapeutic apparatus manufacturing	$43.00	418.1%	100.0%			
Search, detection, and navigation instruments manufacturing	$49.90	9.4%	–8.8%			
Analytical laboratory instrument manufacturing	$19.30	121.8%	43.0%			
Irradiation apparatus manufacturing	$14.20	468.0%	264.1%			
Light truck and utility vehicle manufacturing	$311.00	175.0%	196.5%	$34.60	27.7%	507.0%
Heavy duty truck manufacturing	$30.90	46.4%	45.1%	$6.90	–16.9%	137.9%

18

Table 5 (continued)

Industry	Real gross output			Real value-added		
	2018 total	Percentage change (1997–2018)	Percentage change in (2009–2018)	2018 total	Percentage change (1997–2018)	Percentage change in (2009–2018)
Motor vehicle body, trailer, and parts manufacturing	**$326.10**	**41.5%**	**76.8%**	**$82.20**	**94.8%**	**184.4%**
Aerospace product and parts manufacturing	$248.20	47.6%	31.5%	$121.40	54.3%	20.7%
Aircraft manufacturing	**$129.60**	**52.8%**	**27.8%**			
Aircraft engine and engine parts manufacturing	$51.10	43.5%	46.8%			
Other aircraft parts and auxiliary equipment manufacturing	**$33.80**	**35.7%**	**4.3%**			
Guided missile and space vehicle manufacturing	$27.50	62.7%	100.7%			
Propulsion units and parts for space vehicles and guided missiles	**$6.40**	**6.7%**	**–1.5%**			
All other transportation equipment manufacturing	$73.70	59.5%	2.6%	$25.60	53.3%	24.3%
Railroad rolling stock manufacturing	**$13.10**	**22.4%**	**9.2%**			
Ship building and repairing	$26.60	71.6%	4.3%			
Motorcycle, bicycle, and parts manufacturing	**$8.90**	**117.1%**	**50.8%**			
Military armored vehicle, tank, and tank component manufacturing	$5.90	181.0%	–61.9%			
All other transportation equipment manufacturing	**$11.20**	**107.4%**	**55.6%**			
Medical equipment and supplies manufacturing	$101.90	84.9%	6.9%	$62.00	103.3%	7.6%
Petroleum refineries	**$848.50**	**23.4%**	**8.6%**			
Petrochemical manufacturing	$62.60	20.4%	–21.9%			
Other basic organic chemical manufacturing	**$128.30**	**0.3%**	**36.8%**			
Medicinal and botanical manufacturing	$16.50	–3.5%	20.4%			
Pharmaceutical preparation manufacturing	**$178.50**	**23.7%**	**1.5%**			
In-vitro diagnostic substance manufacturing	$16.70	32.5%	36.9%			
Biological product (except diagnostic) manufacturing	**$32.00**	**223.2%**	**11.1%**			

Source: "GDP-by-Industry," Bureau of Economic Analysis, updated December 10, 2020, https://apps.bea.gov/iTable/index_industry_gdpIndy.cfm.
Note: BEA value-added figures not provided at the sub-industry level.

Semiconductors. Shortly before the end of the 116th Congress, both chambers approved by wide margins the National Defense Authorization Act for Fiscal Year 2021 (NDAA), which includes billions of dollars in federal support for the construction of domestic semiconductor manufacturing facilities and an R&D consortium. According to the Bureau of Economic Analysis (BEA), however, U.S. "semiconductor and other electronic component manufacturing" production reached $113.4 billion in real gross output and $88 billion in real value-added in 2018.[37] Real gross output for "semiconductor and related device manufacturing" alone reached $64.9 billion (more detailed value-added data are not available). The Semiconductor Industry of America (SIA) further notes that there are

commercial semiconductor manufacturing facilities in 18 states, employing more than 240,000 Americans, and that the United States has 12.5 percent of global semiconductor manufacturing capacity.[38] Furthermore, the largest share (44.3 percent) of U.S. companies' production occurs in the United States (while only 5.6 percent is in China, whose alleged dominance was the stated justification for the subsidies).

The United States is also a top-five global exporter of semiconductors and related equipment, shipping almost $47 billion of those goods in 2019.[39] These and other data led the SIA to conclude in its *2020 State of the U.S. Semiconductor Industry* report that "the semiconductor manufacturing base in the United States remains on solid footing."[40]

The SIA also reports that the U.S. industry has "nearly half" of all global semiconductor sales—a market share that has been steady (ranging from the mid-40s to low 50s) since the late 1990s—and is the top seller in every major regional market, including China. Sales by U.S. semiconductor firms also grew from $76.7 billion in 1999 to $192.8 billion in 2019—a compound annual growth rate of almost 5 percent.

Beyond output and sales, the U.S. semiconductor industry has been a global leader in capital spending (capex) and R&D. The SIA notes that total R&D and capex by U.S. semiconductor firms, including "fabless" companies that specialize in R&D but outsource actual chip manufacturing, was $71.7 billion in 2019, growing steadily between 1999 and 2019 at a 6.2 percent annual rate. R&D expenditures hit $39.8 billion last year, constituting 16.4 percent of the industry's total sales last year—an "R&D intensity" second only to pharmaceuticals in the United States and the highest of any semiconductor industry in the world. Capex has been similarly world-class: SIA reports that 2018 capital expenditures reached "an all-time high of $32.7 billion" and constituted 12.5 percent of sales in 2019, with only South Korea having a larger global share of semiconductor capex that year.

Other data corroborate these findings. (See Table 6.) According to the U.S. National Science Board's 2020 report on R&D trends, U.S. computer and electronic (including semiconductor) companies spent more on R&D in 2016 (the last year available) than any other country surveyed—often many times more—with only South Korea's sector having a greater share of total or manufacturing R&D than the United States.[41]

The BEA further calculates that foreign multinational corporations in 2017 spent $7.3 billion and $2.2 billion on R&D and capex, respectively, for their U.S. affiliates in the "semiconductors and other electronic components" sector, up from $4.4 billion and $1.9 billion in 2007.[42] U.S. semiconductor companies' stock prices also have climbed steadily over the past decade.[43]

As a result of this investment, the SIA notes that in 2019 the United States remained at or near the "leading edge" of current semiconductor technology. Although U.S.-based Intel announced delays to its 7 nm chip production (reportedly competitive with the 5 nm chips from Taiwan's TSMC), Intel also remained financially healthy as of July 2020: "Even with $15 billion projected for capital expenditures this year, on a non-GAAP basis, Intel is looking at free cash flow of $17.5 billion."[44]

In short, the U.S. semiconductor industry is profitable and expanding—in many ways still globally dominant—and is investing billions of its own dollars to stay that way. None of this indicates a significant long-term "national security" threat—*particularly* not one that could be solved via subsidies for commercial fab construction (which takes years to complete).

Medical Goods (Non-Pharmaceutical). The U.S. medical goods industry is also large and productive.[45] For example, a 2020 study from the St. Louis Federal Reserve of "essential medical equipment" (hand sanitizer, masks, personal protective equipment, ventilators, etc.) found that *American* producers supplied the vast majority (more than 70 percent) of these products in 2018.[46] The World Trade Organization (WTO) further notes that

19

"The U.S. semiconductor industry is profitable and expanding—in many ways still globally dominant—and is investing billions of its own dollars to stay that way."

20

Table 6
Business expenditures for R&D: 2016 or most recent year (purchasing power parity, millions of current dollars and percentage share)

	United States (2016)	France (2016)	Germany (2016)	United Kingdom (2016)	China (2016)	Japan (2016)	South Korea (2015)
Total business enterprise R&D	$374,685	$40,495	$81,739	$31,812	$349,685	$129,752	$59,644
Manufacturing R&D	$250,533	$20,242	$69,422	$13,166	$304,342	$112,766	$53,446
Computer, electronic, and optical products R&D	**$77,385**	**$4,836**	**$9,936**	**$1,560**	**$57,494**	**$25,599**	**$29,893**
Share of total business R&D	20.7%	11.9%	12.2%	4.9%	16.4%	19.7%	50.1%
Share of total manufacturing R&D	30.9%	23.9%	14.3%	11.8%	18.9%	22.7%	55.9%

Source: "Research and Development: U.S. Trends and International Comparisons," Science & Engineering Indicators, National Science Foundation, https://ncses.nsf.gov/pubs/nsb20203/u-s-business-r-d.
Note: R&D = research and development.

> "The United States is a top global producer, importer, and exporter of medical goods."

the United States not only is a top global producer and importer of medical goods but also is a top exporter (second overall, right behind Germany).[47]

Data from the BEA on domestic production of medical equipment and supplies also show a healthy industry with expanding real output and value-added between 1997 and 2018. This includes the broader "medical equipment and supplies manufacturing" industry, which had $102 billion in gross output and $62 billion in value-added in 2018, and the two most important subcategories, "surgical and medical instrument manufacturing" ($45.9 billion) and "surgical appliance and supplies manufacturing" ($37.4 billion). Indeed, real output in the latter category—which contains ventilators, masks, and many other "essential" medical goods—increased by almost 90 percent over the period examined.[48] Other categories, such as "analytical laboratory instrument manufacturing" (121.8 percent), "irradiation apparatus manufacturing" (468.0 percent), and "electromedical and electrotherapeutic apparatus manufacturing" (418.1 percent) also experienced substantial gains in real output.

The only domestic medical goods industry that has contracted is basic personal protective equipment (i.e., textiles, apparel, or paper products), but even there, the concern is overblown. For example, BEA data show that the domestic textile industry in 2018 generated approximately $54 billion and $17.6 billion in real gross output and value-added, respectively—significant increases (4.7 percent and 5.4 percent) since the end of the Great Recession. Also, the apparel and sanitary paper industries produced more than $10 billion in output in 2018. Many of these companies shifted operations to produce high-demand personal protective equipment (PPE) during the pandemic—another example of the U.S. manufacturing sector's flexibility.[49] Finally, foreign producers and domestic stockpiles can fill in remaining gaps in PPE supply, as they have done throughout the pandemic. These facts belie the need for costly new government policies to subsidize or protect new and inefficient PPE capacity in the United States.

Pharmaceuticals. As shown in Tables 7a, 7b, and 7c, U.S. government data on output, R&D, and capital expenditures show that American pharmaceutical manufacturers have performed well in recent years.

A 2020 report from the McKinsey Global Institute notes that the United States is home to more than 500 pharmaceutical manufacturing facilities—among the highest concentrations in the world.[50] The WTO adds that the United States is both a major importer *and* exporter of pharmaceutical products, having shipped

almost $41 billion in medicines (35 percent of total U.S. medical goods exports) in 2019.[51]

With respect to pharmaceutical inputs (i.e., active pharmaceutical ingredients, or APIs), available public data on domestic and global API production do not indicate a need for urgent government funding (such as that proposed for Eastman Kodak Company). According to the Food and Drug Administration (FDA), of the roughly 2,000 global API manufacturing facilities, 13 percent are in China; 28 percent are in the United States; 26 percent are in the EU; and 18 percent are in India. For the APIs of World Health Organization "essential medicines" on the U.S. market, 21 percent of manufacturing facilities are located in the United States; 15 percent are in China; and the rest are in the EU, India, and Canada.[52] The FDA further notes that the United States was home to 510 API facilities in 2019, 221 of which supply the aforementioned "essential medicines."[53]

Table 7a

Real gross output by industry (billions of U.S. dollars)

Industry	2018 output	Change 1997–2018	Percentage change 1997–2018	Change 2000–2018	Percentage change 2000–2018	Change 2009–2018	Percentage change 2009–2018
Pharmaceutical and medicine manufacturing (total)	$242.8	$58.7	31.9%	$39.1	16.1%	$12.6	5.5%
Medicinal and botanical manufacturing	$16.5	$(0.6)	–3.5%	$(0.5)	–2.9%	$2.8	20.4%
Pharmaceutical preparation manufacturing	$178.5	$34.2	23.7%	$17.7	11.0%	$2.7	1.5%
In-vitro diagnostic substance manufacturing	$16.7	$4.1	32.5%	$2.1	14.4%	$4.5	36.9%
Biological product (except diagnostic) manufacturing	$32.0	$22.1	223.2%	$20.7	183.2%	$3.2	11.1%

Source: "GDP-by-Industry," Bureau of Economic Analysis, updated December 10, 2020, https://apps.bea.gov/iTable/index_industry_gdpIndy.cfm.

Table 7b

Domestic research and development (millions of current U.S. dollars)

Industry	2001	2017	Percentage change
Pharmaceuticals and medicines	$10,137	$66,202	553.1%

Source: "Business and Industry R&D," National Science Foundation, https://www.nsf.gov/statistics/industry/.

Table 7c

Capital expenditure in pharmaceutical and medicine manufacturing (billions of current U.S. dollars)

Year	Industry	Total expenditures	Total new expenditures	Expenditures for structures	Expenditures for equipment
2017	Pharmaceutical and medicine manufacturing	$16,196	$15,917	$5,846	$10,350
2018	Pharmaceutical and medicine manufacturing	$15,096	$14,450	$6,099	$8,998

Source: "Annual Capital Expenditures: 2018," U.S. Census Bureau, January 16, 2020.

22

"'Security nationalism' also assumes a need for broad and novel U.S. government interventions while ignoring the current, targeted federal policies intended to support the defense industrial base."

THE "DEFENSE INDUSTRIAL BASE" ALREADY ENJOYS TARGETED POLICY SUPPORT

"Security nationalism" also assumes a need for broad and novel U.S. government interventions while ignoring the current, targeted federal policies intended to support the defense industrial base. As documented in the Appendix, this includes policies intended to diversify potential sources of essential supplies beyond U.S. borders; to subsidize, procure, and stockpile domestically produced items deemed essential for national defense; or to protect domestic companies from import competition.

These laws, central to past DOD recommendations and actions to support the U.S. defense industrial base, are summarized as follows:

- **International policies intended to support the defense industrial base:** the "National Technology and Industrial Base" (NTIB), which includes Canada, the UK, and Australia and is intended to enhance national security by eliminating restrictions on trade and R&D collaboration among NTIB partner countries, thereby expanding the United States' industrial capacity beyond U.S. borders; reciprocal defense procurement agreements between the DOD and its counterparts in 27 foreign governments, under which each country agrees to remove barriers to national security–related purchases of supplies and services of the other country;[54] and "security of supply" arrangements with eight countries that "allow the DOD to request priority delivery for DOD contracts, subcontracts, or orders from companies in these countries."[55]
- **Domestic laws intended to support the defense industrial base on express national security grounds**, including: NTIB provisions that require the DOD to assess annually the defense industrial base (published in an annual industrial capabilities report) and to work to mitigate any potential concerns; the Defense Production Act of 1950, which allows the DOD to identify priority sectors for government contracting and enter into those contracts (Title I), and to support, through purchases or loans/loan guarantees, "essential" domestic industrial base capabilities that are found to be nonexistent, at risk of loss, or insufficient to meet government needs (Title III); numerous other programs (see the Appendix) providing the DOD with the authority and funding to support other parts of the industrial base; and the National Defense Stockpile Transaction Fund and Strategic and Critical Materials Stock Piling Act of 1939, which authorize the National Defense Stockpile Manager to fund R&D projects to develop new materials for the stockpile and require the president to encourage the development and conservation of domestic sources of "strategic and critical materials" through procurement.
- **Laws intended to protect U.S. manufacturers via the imposition of restrictions on foreign imports**, including: Section 232 of the Trade Expansion Act of 1962, which authorizes the executive branch to take action (e.g., through tariffs or quotas) against imports found to have been "imported into the United States in such quantities or under such circumstances as to threaten to impair the national security";[56] U.S. "trade remedy" laws, which allow for the imposition of antidumping or anti-subsidy duties on imports from specific countries that are found to have injured or threatened to injure the U.S. industry making a directly competitive product; and various "Buy American" laws, which require the federal government to purchase or contract for domestically produced industrial goods.

As explained in the Appendix and the following sections, many of these policies have proven to be ineffective, unused, or even counterproductive, and several reforms are proposed. Regardless, these measures' mere existence rebuts the current caricature of a U.S. defense industrial base ravaged by free markets and government inattention. These policies also show that the federal government, particularly the DOD, has legal tools to address discrete and legitimate weaknesses in essential supply chains (e.g., for weapons). Also, the government's implementation of some of these laws shows the weaknesses of security nationalism in practice.

"SECURITY NATIONALISM" MAKES THE UNITED STATES LESS SECURE

Because economic nationalist policies weaken the U.S. economy and manufacturing sector, the government should not pursue "security nationalism" to bolster national security.

Closed Markets Make Economies Less Secure

Protectionism often undermines national security by weakening a country's economy and manufacturing sector, thus making it less resilient in the face of war or other shocks. Restrictions on international trade and investment not only reduce economic growth (and thus tax revenue) and output but also can distort the economy and divert resources from sectors (e.g., high-tech, high-productivity industries such as information technology) that are also essential to national security.

Decades of research bear this out. For example, International Monetary Fund (IMF) economists in 2018 examined data for 151 countries over 51 years (1963–2014) and found that "tariff increases lead, in the medium term, to economically and statistically significant declines in domestic output and productivity" as well as more unemployment and higher inequality.[57] Numerous analyses of U.S. protectionism reveal that these policies impose economic harms that far outweigh possible short-term benefits, fail to protect American firms and workers over the longer term, and breed political dysfunction.[58]

Furthermore, protectionism's harms are typically amplified for the U.S. manufacturing sector—the target of current security nationalist demands. The IMF paper, for example, found that increased tariffs on manufacturing inputs (e.g., steel) resulted in a statistically significant decline in manufacturing sector-wide output (6.4 percent) and productivity (3.9 percent) five years after the tariff hikes in question. These findings are particularly relevant for the United States, given the diversity and complexity of the domestic manufacturing sector; the consistently high percentage of manufacturing inputs as a share of total imports; the concentration of "trade remedy" (antidumping, countervailing duty, safeguard) duties on manufacturing inputs; and relatively new "national security" tariffs on almost all primary steel and aluminum imports into the United States.

Other papers have confirmed these harms. For example, a 2020 paper from Alessandro Barattieri and Matteo Cacciatore found that U.S. "trade remedy" duties were concentrated in a few upstream industries (base metals and metal products, chemicals, plastics, and rubber products) and therefore resulted in substantial employment losses for downstream manufacturing industries, along with modest and short-lived employment gains in the industries that won protection. The authors further determined that these downstream industries suffered because they lost competitiveness (and therefore jobs) after raising prices to cover higher input costs.[59] Examinations of President Trump's "national security" tariffs on steel and aluminum found that the measures' costs were mostly borne by domestic manufacturers that consume these metals—including in industries most closely associated with national security (e.g., transportation and weapons)—and resulted in foreign retaliation against U.S. goods exports. As a result, the import protection harmed these firms in terms of increased costs and reduced output, jobs, exports, and investment.[60]

23

"Protectionism often undermines national security by weakening a country's economy and manufacturing sector, thus making it less resilient in the face of war or other shocks."

24

> "The United States' implementation of 'security nationalist' policies reveals a long track record of costs, risks, failed objectives, and unintended consequences."

Finally, extensive literature ties trade openness to improved economic performance more broadly. A 2018 paper from Robert Feenstra summarized the studies on the long-run, overall gains from trade for the United States, calculating total average GDP gains of 1.1 percent per year due to increased product variety arising from imports, the productivity-enhancing effects of trade-induced creative destruction, and pro-competitive effects on domestic prices.[61] A 2017 Peterson Institute for International Economics paper calculated the payoff to the United States from expanded trade between 1950 and 2016 to be $2.1 trillion, increasing U.S. GDP per capita and per household by $7,000 and $18,000, respectively.[62] The U.S. International Trade Commission (ITC) found in 2016 that U.S. trade agreements produced small but significant gains in U.S. exports, real GDP, employment, and wages and saved American consumers $13.4 billion in 2014.[63] Several other papers have found similar gains.[64]

Overall, the evidence and analysis refute current arguments that economic nationalism would bolster the U.S. defense industrial base (and thus national security). Instead, American protectionism has been repeatedly found to weaken the U.S. manufacturing sector and the economy more broadly.

"Security Nationalism" Fails in Practice

Regardless of the theory supporting "security nationalism," the United States' implementation of these policies—for steel, ships, machine tools, semiconductors, and other "essential" goods—reveals a long track record of costs, risks, failed objectives, and unintended consequences. This checkered history must be considered when evaluating new proposals to support certain industries on national security grounds.

SECTION 232 TARIFFS ON STEEL. President Trump's tariffs on steel imports under Section 232 is a powerful example of the perils of American security nationalism. Prior to the tariffs' imposition, the U.S. steel industry had already won billions of dollars in government subsidies and import protection through dozens of U.S. trade remedy measures covering almost 61 percent of all steel product imports in 2017, the year before the Section 232 tariffs took effect.[65] Public data for that same year also showed that the industry was at no risk of collapse: according to the Commerce Department's Section 232 report, for example, annual U.S. steel output (around 80 million metric tons) and production capacity (around 115 million metric tons) were steady between 1998 and 2016, and the domestic industry's U.S. market share remained dominant at around 70 percent between 2011 and 2016.[66] Furthermore, in the months leading up to the Section 232 investigation, domestic crude steel output and shipments of steel mill products also remained stable;[67] five of the six largest domestic steelmakers were profitable, posting a combined net income of $491 million in the first quarter of 2017; and Standard and Poor's credit ratings showed eight major U.S. producers to be financially viable.[68] This was not an industry in crisis.

Nor did imports pose an immediate threat to the United States' ability to procure steel (and aluminum) for national defense needs, as judged by the same standards that the Commerce Department applied in a 2001 Section 232 investigation that concluded that imports of iron and steel did not pose a national security threat.[69] As previously noted, imports constituted less than one-third of all domestic steel consumption, and the majority of those steel imports came from "reliable" (in Commerce Department parlance) U.S. allies, such as Canada (the largest source country), Brazil (2), South Korea (3), Mexico (4), Japan (7), and various EU countries, including Germany (8), the Netherlands (13), Italy (14), Spain (16), and the UK (17). As the Commerce Department noted in 2001, none of these countries—most of which were U.S. treaty, free trade agreement, and/or defense procurement agreement partners and home to companies with major U.S. investments—would realistically deny the United States steel in a time of war or other emergency:

> The Department found that iron ore and semi-finished steel are imported from reliable foreign sources. Accordingly, even if the United States were dependent on imports of iron ore and semi-finished steel, imports would not threaten to impair national security. . . .
>
> Imports of iron ore and semi-finished steel come from diverse and reliable trading partners. More than a dozen countries exported iron ore to the United States in 2000; many of these countries are in the Western Hemisphere. Over the past ten years, Canada—with which the United States shares a 3,987-mile border—has been the source of more than 50 percent of U.S. iron ore imports. Canada is a North Atlantic Treaty Organization ("NATO") ally, the United States' largest trading partner, and also a party to NAFTA.[70]

Meanwhile, China—the repeated excuse for the Section 232 tariffs—was only the 11th largest U.S. supplier of steel in 2017, suffering a 31 percent drop since 2011 (due in part to the dozens of U.S. trade remedy measures).[71]

The absence of a national security threat in 2017 was established in a statutorily required assessment from then-Secretary of Defense James Mattis that agreed with the Commerce Department that the "systematic use of unfair trade practices . . . poses a risk to our national security" ***but*** explained that because "the U.S. military requirements for steel and aluminum each only represent about three percent of U.S. production . . . DoD does not believe that the findings in the [Commerce Section 232] reports impact the ability of DoD programs to acquire the steel . . . necessary to meet national defense requirements." For this reason, Mattis recommended only "targeted tariffs" focused on "correcting Chinese overproduction and countering their attempts to circumvent existing anti-dumping tariffs" instead of "a global quota or global tariff," as well as a dialogue with "key allies" to emphasize the United States' commitment to these countries' "bilateral U.S. relationship."[72]

Mattis' recommendations—as well as the Commerce Department's findings and standards in the 2001 Section 232 investigation—were ignored. Instead, President Trump, surrounded by U.S. steel company chief executive officers and union leaders at a March 2018 White House press event, announced blanket 25 percent tariffs—inexplicably 1 percentage point higher than what the Commerce Department recommended—on all types of steel.[73] This included commodity products (e.g., rebar) with little national security nexus and semifinished products (e.g., slab) that *American steel companies* needed to maintain their domestic operations. It also included steel from close U.S. allies such as Canada, Japan, and the EU (including the UK).[74]

Numerous studies have documented the tariffs' high economic costs for U.S. consumers (particularly manufacturing firms). In particular, the tariffs caused higher steel prices that in turn hurt other U.S. manufacturers in terms of higher input costs, lower exports, and lost competitiveness at home and abroad; created an opaque, costly, and uncertain "exclusion" bureaucracy, under which more than 100,000 requests have been filed by U.S. manufacturers seeking relief; resulted in approximately 75,000 fewer manufacturing jobs than would have otherwise existed in the absence of the tariffs; depressed global demand for steel (thereby dampening prices); bred global market uncertainty, which hurt investment in manufacturing; and caused numerous U.S. trading partners to retaliate against American exporters.[75]

At the same time, the steel tariffs were found to have a minimal impact on U.S. steelworker jobs and to do nothing to address global steel overcapacity—the primary long-term driver of the U.S. steel industry's weakened financial position in 2018.[76] Given these and other market dynamics (e.g., steelmakers bringing back inefficient capacity to capture rents and subsequently flooding the U.S. market), industry stocks tanked in late 2018 and early 2019, and steel companies were actually

25

"President Trump's tariffs on steel imports under Section 232 are a powerful example of the perils of American security nationalism."

26

"A century of evidence reveals that the Jones Act has failed to achieve its main national security objectives while imposing substantial economic costs."

laying off workers and curtailing investments by the end of 2019.[77] In extending the tariffs to downstream "derivative" products in early 2020, the Trump administration tacitly admitted that the steel tariffs had not achieved their primary goal of increasing and stabilizing the industry's capacity utilization.[78] As one *Los Angeles Times* story put it, "Trump's steel tariffs were supposed to save the industry. They made things worse."[79]

Finally, the president's baseless invocation of "national security" in this (and other) Section 232 cases has likely harmed U.S. national security in other important ways, including by antagonizing allies and thereby undermining U.S. credibility and complicating efforts to build international coalitions on other, more legitimate security threats (e.g., China); eroding the rule of law in the United States via the clear abuse of constitutional trade powers delegated to the executive branch by Congress; and undermining U.S. leadership at the WTO by exploiting the body's rarely invoked exceptions for the protection of "essential security interests."

THE JONES ACT. The Merchant Marine Act of 1920 was presented as a plan to ensure adequate domestic shipbuilding capacity and a ready supply of merchant mariners in times of war or other national emergencies. Section 27 of the law—the "Jones Act"—purportedly supports those objectives by restricting domestic shipping services to vessels that are U.S.-built, U.S.-owned, U.S.-flagged, and U.S.-staffed. As a result, the United States has one of the most (if not *the* most[80]) restrictive shipping systems in the world, as shown in Figure 13.

A century of evidence—summarized in a 2018 Cato Institute policy analysis[81]—reveals that the Jones Act has failed in its main national security objectives while imposing substantial economic costs. First, Jones Act restrictions inflated U.S. shipping costs because the transport of cargo between U.S. ports and on inland waterways is off-limits to foreign competition. Higher shipping rates for waterborne transportation reduced demand for shipping services, thereby leading U.S. companies to purchase fewer vessels. Producers, in turn, build fewer ships, thus retarding both output (ships) and production facilities (shipyards).

The trends shown in Figure 14 are especially bleak for oceangoing vessels (i.e., the ships that the U.S. military would need in wartime):

> Nearly 9 of every 10 commercial vessels produced in U.S. shipyards since 2010 have been barges or tugboats. Among oceangoing ships of at least 1,000 gross tons that transport cargo and meet Jones Act requirements, their numbers have declined from 193 to 99 since 2000, and only 78 of those 99 can be deemed militarily useful. Even in their expressions of support for the Jones Act, government officials concede that the U.S. shipping industry and its associated ecosystem have been depleted.[82]

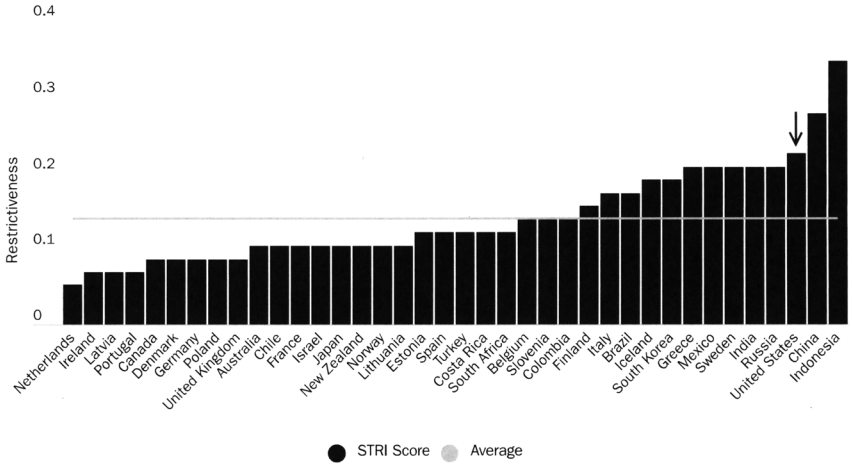
The Jones Act fleet is not only shrinking but also increasingly decrepit because of artificially high replacement costs. Of the mere 98 ships in service, more than a third (34.7 percent) are past the age of 20, and a quarter of them (24.5 percent) are past 30. Studies also show that these old vessels are not only inefficient but dangerous.

With fewer (and older) ships, fewer shipyards, and fewer workers in the industry, the Jones Act has undoubtedly failed to achieve its national security objectives—a conclusion evident by the fact that the U.S. military during the Gulf War and thereafter rarely turned to the Jones Act fleet (and overwhelmingly relied on foreign-built ships) to meet its sealift needs.[83]

Second, higher shipping costs caused by the Jones Act increase demand for alternative forms of transportation, including trucking, rail, and pipeline services, raising those modes' rates and inflating business costs throughout the supply chain—thus affecting the operations and finances of nearly every business in nearly every U.S. industry, especially manufacturing. The Jones Act therefore disadvantages U.S. companies relative to their foreign competitors and consumes funds that U.S. households could spend or invest elsewhere

Figure 13

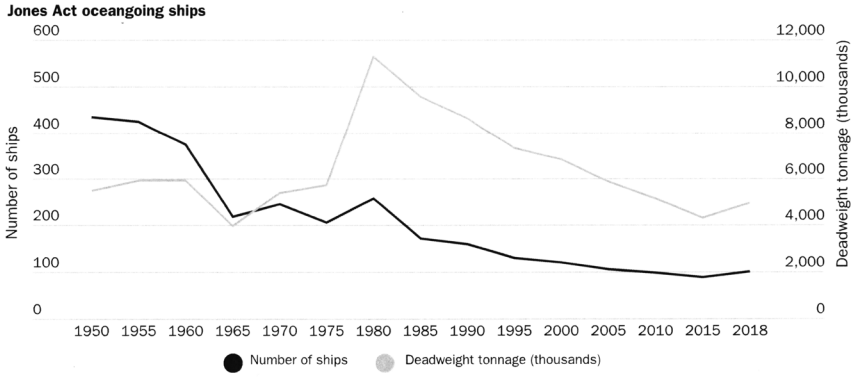
Restrictiveness on foreign entry for maritime transport services (2017)



Source: "Services Trade Restrictiveness Index Regulatory Database," Organisation for Economic Co-operation and Development, https://qdd.oecd.org/subject.aspx?Subject=063bee63-475f-427c-8b50-c19bffa7392d.
Notes: The restrictiveness index assigns values between 0 (least restrictive) and 1 (most restrictive). STRI = Services Trade Restrictiveness Index.

Figure 14

Jones Act oceangoing ships



Source: Congressional Research Service, "Shipping Under the Jones Act: Legislative and Regulatory Background," updated November 21, 2019, p. 14, fig. 1.
Note: Deadweight tonnage is a measure of ship cargo capacity.

28

> "After years of subsidies and trade protection, the U.S. machine tools industry was in worse shape than when the policies began and today remains a Defense Department concern."

in the economy (on more productive ventures). Indeed, some of those competitors, such as Russian gas producers that service Northeastern U.S. communities due to the artificially high cost of shipping liquified natural gas from Texas and Louisiana, are in hostile territories—another unintended consequence that undermines national security.

At the same time, heightened use of trucks and freight trains increases infrastructure and maintenance costs, as well as environmental costs (surface transportation emits more carbon than ships). It also raises safety issues (e.g., transporting toxic materials on U.S. highways) and increases traffic congestion—especially on highways running parallel to U.S. sea lanes—thereby generating opportunity costs from lost wages and lost output for American commuters. Finally, the Jones Act has been a persistent irritant to important U.S. trade partners, thus discouraging U.S. exports in those markets. These economic harms further undermine, rather than support, U.S. national security.

MACHINE TOOL "VOLUNTARY" RESTRAINT AGREEMENTS, SUBSIDIES, AND BUY AMERICAN RESTRICTIONS. Following a 1983 petition from the domestic machine tool industry under Section 232 and an affirmative "national security" determination by the Commerce Department in 1984, the Reagan administration concluded in 1986 five-year "voluntary restraint agreements" (VRAs) with Japan and Taiwan to limit their exports of certain machine tools and requested that nine other countries limit their U.S. machine tool market shares to certain levels. The federal government—led by the Commerce Department and the DOD—simultaneously implemented a "Domestic Action Plan" to "assist, encourage, and fund a variety of research and development activities to help modernize machine tool and manufacturing technology."[84] This included the creation of the National Center for Manufacturing Sciences (NCMS), a public-private consortium intended to "revitalize" the machine tool industry. Finally, Congress in 1986 and 1988 imposed Buy American restrictions on the DOD's procurement of foreign-made machine tools.[85] The VRAs were modified in 1991 and extended through December 1993, when they expired. The NCMS still exists, though it has been expanded to cover all manufacturing operations in North America (as opposed to just U.S. machine tools producers).

These trade restrictions and subsidies proved unsuccessful. First, the VRAs cost U.S. machine tool consumers (i.e., other U.S. manufacturers) hundreds of millions of dollars per year but provided much smaller benefits to U.S. producers, resulting in an estimated annual net loss of $647,892 (in 2017 dollars) per job protected.[86] Among the measures' victims was one of the United States' largest machine tool producers, Hurco, which sourced certain hardware from Taiwan and survived because it won an exemption from the government through 1990.[87] The trade measures also failed to reverse import growth (which expanded by 2.51 percent per year between 1986 and 1990) or domestic job losses (which declined by 2.09 percent per year), while delivering substantial "quota rents" to foreign producers.[88] Import growth was attributable to the exemptions, lax government enforcement, and the growth of unconstrained foreign suppliers—most notably Austria and China.[89]

Second, neither the trade restrictions nor the subsidies revitalized the domestic industry. A 1990 Government Accountability Office report found, for example, that American companies had thus far failed to meet the Reagan administration's domestic market share targets in four of the six machine tool categories at issue.[90] The ITC in 1993 found that domestic machine tools shipments actually declined by 11.7 percent between 1989 and 1991, while employment dropped by 9.8 percent.[91] According to a 1995 article for the *Philadelphia Inquirer*, after years of subsidies and import protection, the U.S. machine tool industry still remained a "distant third" in global production—essentially tied with Italy but well behind both Germany and Japan; had only half the volume of sales (measured in constant dollars) in 1995 that

it had 30 years earlier; and saw its workforce shrink from 108,000 in 1980 to 58,300 in 1995 (as well as experience stagnant wages).[92]

Finally, the programs were plagued with dysfunction. The Government Accountability Office report found that the Commerce Department's methods for monitoring quota compliance and related import volumes suffered from a lack of documented procedures and data, inaccurate calculation methodologies, and reporting delays of five months or more. It also found problems with compliance and enforcement. Moreover, U.S. restrictions on supplies from major foreign producers likely fueled the growth of new market entrants, including China, which has since become a global leader.

In 1993, the George H. W. Bush administration quietly allowed the machine tools VRAs to fade away.[93] Furthermore, neither the Buy American restrictions nor the NCMS's continued operation ever revitalized the domestic machine tools industry, which remains a DOD concern.

SEMICONDUCTOR TARIFFS AND SUBSIDIES. National security also undergirded U.S. support for the semiconductor industry in the 1980s and '90s, but it also proved costly and unsuccessful.[94] Government support was primarily implemented through two measures: the 1986 Semiconductor Trade Agreement (STA) between the United States and Japan and contemporaneous subsidies to support domestic semiconductor research and production. Each measure, however, generated meager benefits for specific U.S. firms while imposing substantial and unforeseen economic costs, leaving long-term national security objectives unmet or even undermined.

THE STA. Under the STA, the Japanese government agreed to stop its producers from "dumping" dynamic random-access memory (DRAM) and erasable programmable read-only memory chips—enforced through production limits and export restraints that kept prices above U.S.-determined levels—and to guarantee foreign producers 20 percent of the Japanese market. In exchange, the United States suspended ongoing antidumping and Section 301 (a U.S. law intended to police foreign trading practices that allegedly harm U.S. commerce) investigations of Japanese memory chips.[95]

The STA's economic harms were significant. A 1994 Peterson Institute analysis found that in 1989, the STA generated a net national welfare loss of $974 million ($2.04 billion in 2020 dollars) and cost U.S. consumers over $525,000 ($1.10 million in 2020 dollars) per manufacturing job potentially saved. After the STA took effect, domestic semiconductor prices "skyrocketed," and a "full-fledged shortage of DRAMs was widely felt in the United States and Europe by early 1998."[96] As a result, U.S. semiconductor users, particularly up-and-coming computer manufacturers such as Apple that were dependent on DRAMs, were hobbled and less able to compete with Asian and European producers that could obtain cheaper DRAMs.[97] As a result, the computer manufacturing industry shed one job for every U.S. semiconductor job supposedly gained from the STA.[98] Increased DRAM prices also added almost $100 to the price of a personal computer selling for $600 or $700 in 1988.[99]

The STA also ended up helping *Japanese semiconductor producers* more than their U.S. competitors because the STA allowed the Japanese to charge higher prices in the United States and elsewhere. According to one Brookings Institution study, Japan's manufacturers earned $1.2 billion in extra DRAM profits in 1988 alone and another $3–4 billion on all products in 1989—most of which was paid by U.S. consumers and computer manufacturers.[100] Other studies found similar gains for Japanese producers, in part due to collusive behavior.[101]

U.S. producers, on the other hand, did not increase production capacity, despite artificially high domestic prices and U.S. government subsidies.[102] All but one U.S. chip maker left the DRAM market within a decade, and the STA prevented neither industry recessions nor declining U.S. market share (which shrunk from 83 percent to 70 percent between 1986 and 1992).[103] One reason is that U.S. firms found ways to circumvent the STA

29

"Government support for the semiconductor industry generated meager benefits for U.S. firms while imposing substantial costs, leaving national security objectives unmet or even undermined."

30

"The U.S.-Japan Semiconductor Trade Agreement hurt American computer companies, targeted the wrong products, and helped turn fledgling Korean competitors into market leaders."

by importing not individual chips but rather assembled circuit boards that weren't subject to the agreement.[104] The benefits of the Japanese market share targets also proved illusory: although foreign semiconductor exports to Japan in 1992 hit the STA's 20 percent market share targets, economist Craig Parsons found that this "achievement" was caused by broader macroeconomic trends, not the agreement itself.[105] Other reports at the time noted that Japanese firms dumped the semiconductors that they were forced to buy into Tokyo Bay.[106] Overall, "there is little consensus on whether the STA was effective in increasing the foreign market share."[107]

As a result, "for most U.S. chip makers, the main impact of the price hikes was vastly greater profits strengthening their Japanese competitors."[108] Longer term, the STA actually helped "accelerate the entrance of Korean companies onto the world DRAM scene—as with Japanese companies, the supernormal profits that were obtainable in the years immediately after the [STA] allowed Korean firms such as Hyundai, Samsung, and LG to reap unexpected returns and gain a foothold at the lower end of the semiconductor technology ladder."[109] They are now market leaders.

Finally, the STA had significant political ramifications in the United States and abroad. It encouraged collusion among Japanese producers and restored the Japanese government's control over the sector, with U.S. help. It led to the creation of a new and powerful lobbying group in the United States—composed of injured downstream user industries—that would go on to mold U.S. trade policy for decades.[110] And it demonstrated the folly of U.S. security nationalism: just as the DOD was recommending action, American companies were *exiting* the DRAM market, having already discerned that their future was not in the "high-volume, low-profit commodity" but in advanced microprocessors, specialty chips, and design.[111] As a result, U.S. Memories, a private consortium to expand domestic DRAM production, was "stillborn and collapsed in January 1990 owing to insufficient financial support and an unwillingness of other major buyers . . . to commit to future purchases."[112] Government planners foresaw none of this.

SEMATECH. Sematech (short for "semiconductor manufacturing technology") was not a DRAMs project but instead a semiconductor R&D consortium funded jointly by private industry and the federal government—very similar to the consortium now proposed in the NDAA. As chronicled by Brink Lindsey in a 1992 piece for *Reason*, the primary impetus for Sematech was national security: only a month before the entity's formation, a Pentagon-sponsored study on "defense semiconductor dependency"—prepared by the Defense Science Board, whose advisory panel conveniently included Sematech member companies—concluded that "it is simply no longer possible for individual U.S. semiconductor firms to compete independently against world-class combinations of foreign industrial, governmental and academic institutions." The DOD therefore recommended $1 billion in government funding for a "Semiconductor Manufacturing Technology Institute." Congress authorized $100 million a year for five years via the Defense Advanced Research Projects Agency.[113]

Lindsey showed how Sematech "confirm[ed] all the darkest suspicions of industrial-policy critics." In its first phase, "Sematech was able to borrow technology from private companies and reproduce manufacturing results that other private companies had achieved years before—and do it with taxpayers' money"; and in its second phase, Sematech did some "useful work, both in evaluating new equipment and improving working relations between chipmakers and suppliers"—but it was work that, while it may have helped a few favored U.S. equipment suppliers, added "very little to what private industry is already capable of doing for itself."[114]

Meanwhile, U.S. semiconductor firms were staging a major turnaround but did so by "ignor[ing] just about everything Sematech's supporters have ever said about

semiconductor competitiveness." Instead, "American companies have been thriving in those supposedly marginal 'specialty' markets derided by the Defense Science Board." Even worse, Lindsey explained how Sematech actually ***hindered*** the industry's revitalization by "favoring older, more-established companies [i.e., Sematech's member companies] over innovative newcomers." He finally debunked Sematech's national security basis, noting that the U.S. military had ample domestic and foreign supplies of both commodity DRAMs and the chips most essential to U.S. weapons systems.[115]

Subsequent studies have confirmed Lindsey's contemporaneous reporting. In a 1996 paper, for example, Douglas A. Irwin and Peter J. Klenow concluded that the "U.S. government's contributions to Sematech do not induce more semiconductor research than would otherwise occur."[116] Even Sematech proponents Kenneth Flamm and Qifei Wang concluded that the consortium's impact on member companies' R&D expenditures was inconclusive and could in fact have been negative on net.[117] That is hardly a ringing endorsement, given Lindsey's account of other, noneconomic harms. In 2020, the Carnegie Endowment's James L. Schoff included Sematech among the cautionary tales of American "technonationalism" in the 1980s:

> The U.S. and Japanese bureaucrats promoting industrial policy and technonationalism at that time could not foresee the growth of the internet and how it would evolve in tandem with the smartphone and other new digital technologies. They could not conceive of AI-enabled cyber hacks of cloud-based data centers or stimulate the rise of internet titans like Google, Amazon, or the modern version of Apple. These companies flourished in the technoglobalist era and avoided single-firm product models by incorporating the best components of various leading technologies into their own product lines. Now these firms possess some of the world's most coveted technology, investing more than most governments do to push new boundaries and accelerate change through design and systems integration.
>
> Another lesson is that governments generally overreact to perceived technonationalist threats. Many U.S. policymakers and scholars during the 1980s viewed competition with Japan over technology as a form of economic warfare and regularly assumed the worst about the Japanese government's intentions. American fears that Japan would come to dominate technological fields like semiconductors, supercomputers, satellites, and aerospace in the same way they pushed U.S. manufacturers out of the production of radios and televisions simply never happened, and U.S. initiatives such as SEMATECH or Super 301 trade dispute cases had only a marginal effect. After all, Japanese firms became members of SEMATECH within ten years, and many market-opening Super 301 cases against Japan involved products (like dynamic random access memory chips) that were soon overtaken by new technology or—in the case of satellites—were eventually subject to U.S. export controls. U.S. firms prospered because of their ability to innovate and compete effectively, not because of such technonationalist or protectionist measures.[118]

Given the NDAA's plans to subsidize the U.S. semiconductor industry and to establish another R&D consortium, it appears that U.S. policymakers have not learned these lessons.

Other "Security Nationalist" Failures

These four case studies are a representative sample of the U.S. government's long-standing inability to achieve national security objectives through protectionism and industrial policy, as

31

"Sematech did not induce more R&D than would have otherwise occurred and is today a cautionary tale of American 'technonationalism.'"

32

"Freer markets—including openness to international trade and investment—can bolster national security and enhance the country's resilience to economic 'shocks.'"

well as the frequent abuse of "national security" for political purposes. Other examples of security nationalist failures include: Trump administration Section 232 tariffs on aluminum and Section 301 tariffs on Chinese imports;[119] previous episodes of steel protectionism, including President Bush's broad "safeguard" measures in 2001;[120] the Sugar Program;[121] crude oil import quotas from the 1950s to early 1970s;[122] textiles and apparel protection;[123] wool/mohair subsidies;[124] Japanese automobile quotas; and antidumping duties on supercomputers and flat panel displays (which also received generous U.S. government R&D subsidies).[125] In each case, along with many others, the outcome was essentially the same: high economic costs, the continued demise of the favored industry, political dysfunction, and U.S. government advocates who, as the American Enterprise Institute's Claude Barfield explained in his book *High Tech Protectionism*, "either never understood or willfully ignored the structure of the industry and the nature of worldwide competition in the sector."[126]

In short, any past successes of U.S. security nationalism are the exception, not the rule.

FREE MARKETS ENHANCE U.S. NATIONAL SECURITY AND "RESILIENCE"

Freer markets—including openness to international trade and investment—can bolster national security and enhance the country's resilience to economic "shocks," such as a pandemic. The relationship between trade and national security has played a central role in U.S. economic and foreign policy since Secretary of State Cordell Hull helped create the World Trade Organization's predecessor, the General Agreement on Tariffs and Trade, in the late 1940s and usher in the modern era of globalization.[127] Since that time, numerous academic studies have supported Hull's instincts, in terms of both geopolitics and economics, that trade and economic interdependence can prevent armed conflict and make countries more resilient to shocks.

Open Markets Help Achieve Geopolitical Objectives

A wide body of research across a range of countries and time periods reveals a strong, positive relationship between trade and national security.[128]

- One of the most influential analyses of trade and peace is that of John R. Oneal, Bruce Russett, and Michael L. Berbaum, who examined almost 10,000 country pairs between 1885 and 1992 and found that increasing two nations' economic interdependence (as measured by bilateral trade-to-GDP ratio) from the 10th to the 90th percentile lowers the probability of a fatal dispute between them by 32 percent. They estimated that the growth in U.S.-China trade between the 1960s and 2002 reduced the probability of a fatal militarized dispute between the two nations by 27 percent, as compared with what it would have been without the increase in commercial relations (and assuming China's authoritarianism remained unchanged). They further found that militarized disputes between nations significantly decreased their bilateral trade in the following year, thus indicating that "the relationship between trade and conflict is reciprocal. . . . Peace and commerce promote each other."[129]
- Solomon W. Polachek and Carlos Seiglie similarly found in a 2006 study that as two countries' gains from trade increase, their level of armed conflict decreases and their level of cooperation increases. In particular, a doubling of bilateral trade volumes leads to a 20 percent decrease in conflict.[130]
- In a 2016 *Review of Development Economics* paper, Jong-Wha Lee and Ju Hyun Pyun examined 243,225 country pairs from 1950 to 2000 and found that "an increase in bilateral trade interdependence significantly promotes peace," with this effect strongest for contiguous

countries (e.g., the United States and Canada). They also showed that peace is separately promoted by a nation's openness to global trade and that "an increase in global trade openness reduces the probability of interstate conflict more for countries far apart from each other than it does for countries sharing borders." Finally, they found that "states more dependent on the world economy tend to have fewer conflicts than those less dependent," thus providing a strong "security motive" for nations' efforts to increase *other countries'* global economic integration.[131]

- Patrick J. McDonald in a 2004 article for the *Journal of Conflict Resolution* found that "free trade, and not just trade, promotes peace by removing an important foundation of domestic privilege—protective barriers to international commerce—that enhances the domestic power of societal groups likely to support war, reduces the capacity of free-trading interests to limit aggression in foreign policy, and simultaneously generates political support for the state often used to build its war machine." Testing the link between individual countries' trade barriers (measured in terms of both tariff levels and deviation from an ideal "free trade" state) and their propensity to engage in military conflicts, McDonald found that "the tendency of protective trade policies to increase military conflict is both statistically and substantively significant" and that "the level of free trade exerts a larger effect than aggregate trade flows on the outbreak of peace" between countries. He concluded that "these results strongly support the claim that free trade enhances the prospects for peace."[132]
- Matthew O. Jackson and Stephen Nei in a 2015 paper examining alliances and interstate wars found that international trade induces peaceful and stable alliances: "Trade increases the density of alliances so that countries are less vulnerable to attack and also reduces countries' incentives to attack an ally." Examining detailed historical data on wars and trade, they showed that "the dramatic drop in interstate wars since 1950 is paralleled by a densification and stabilization of trading relationships and alliances"; that "countries with high levels of trade with their allies are less likely to be involved in wars with any other countries (including allies and nonallies)"; and that "an increase in trade between two countries correlates with a lower chance that they will go to war with each other." They found that a country having more allies and more trade with those allies leads the country to be less prone to attack and less prone to *being attacked*. Importantly, they also noted that "in the absence of international trade, no network of alliances is peaceful and stable"—thus indicating the centrality of trade to peace, especially after 1950.[133]
- A 2020 analysis of 140 countries from 1970–2012, by Benny Kleinman, Ernest Liu, and Stephen J. Redding, found that as countries become greater economic "friends" (as measured by welfare exposure/gains due to the other countries' productivity growth), they become greater political "friends" in terms of having more similar United Nations voting records, being less likely to be strategic rivals (i.e., "whether two countries regard each other as competitors, a source of actual or latent threats that pose some possibility of becoming militarized, or enemies") and being closer to the "U.S.-led liberal order." They concluded that these results, taken together, "are consistent with the view that increased conflict of economic interests between countries leads to heightened political tension between them."[134]

33

"A wide body of research across a range of countries and time periods reveals a strong, positive relationship between trade and national security."

34

"Economic openness can *decrease* a country's vulnerability to demand or supply shocks, or it can help the economy recover thereafter."

- Finally, in a 2012 issue of the *British Journal of Political Science*, Timothy Peterson and Cameron Thies found that the post-World War II decline in armed conflict is driven by an "unprecedented" increase in intra-industry trade (i.e., trade in similar—in many cases, branded—commodities, caused by economies of scale and consumer demands for variety) during this period.[135]

In sum, armed conflicts decrease as nations' economic interdependence and trade openness increase, and a country should seek to encourage other countries' global economic integration to discourage future attacks on that country. These national security benefits are driven by several factors: First, by making countries more commercially interdependent, trade encourages these nations to avoid war or other large-scale armed conflicts (which could impose substantial economic losses). Second, trade and commercial bargaining are more cost-effective than war as a means of resolving disputes with, or obtaining resources from, another country. Third, trade increases material prosperity (e.g., goods, services, investment, ideas) and promotes mutual tolerance and understanding.[136] And fourth, free trade can limit the political power of domestic constituencies that may benefit from increased conflict.

Regardless of the reason, the outcome is clear: while global economic integration cannot eliminate armed conflicts, trade liberalizing policies make peace among nations more likely (and thus enhance national security) than the nationalist alternative.

"Open" Nations Can Still Be "Resilient"

Finally, there is little to indicate that trade and investment openness has made the United States less economically resilient and thereby increased national security risk. Indeed, openness in many cases can *decrease* a country's vulnerability to demand or supply shocks, or it can help the economy recover thereafter.

JUST HOW "OPEN" ARE WE? That being said, the United States is not nearly as open or "dependent" on imports and global supply chains as claimed. Regarding openness, the United States has low "most favored nation" tariffs on goods generally, for example, but maintains high tariffs on dozens of politically sensitive goods and is one of the world's most frequent users of nontariff barriers (e.g., trade remedies) on goods, services, and investment.[137]

Nor is the U.S. economy especially reliant on imported goods: according to a 2019 analysis from the Federal Reserve Bank of San Francisco, imports account for only about 11 percent of U.S. consumer spending—a share that has remained "nearly unchanged" in the past 15 years. Thus, "despite how individual shopping experiences may appear, the majority of U.S. personal consumption expenditures are on domestically produced goods and services."[138]

In fact, the United States is one of the least trade-dependent countries in the world. According to the World Bank, for example, the United States in 2019 ranked second-to-last among surveyed countries in terms of trade (imports and exports of goods and services) as a share of national GDP—26 percent, right below Cuba (27 percent) and also well below major manufacturers such as China (36 percent), Japan (37 percent), South Korea (77 percent), and Germany (88 percent), as well as the world average (60 percent).[139] The United States also ranked near the bottom of a similar ranking of only import shares: fifth lowest at 14.6 percent and again below China (17.3 percent), Japan (18.3 percent), South Korea (37 percent), Germany (41.1 percent), and the world average (29.8 percent).[140] More complex analyses of trade dependency reveal similar results.[141] In terms of manufacturing supply chains, for example, Richard Baldwin and Rebecca Freeman found that imported inputs from only five countries—Canada, China, Mexico, Germany, and South Korea—make up more than 0.5 percent of U.S. manufacturing output, tied for the lowest number among the 21 Organisation for Economic Co-operation and Development nations.[142]

This is not to say, of course, that the United States' relative lack of global integration

is a "good" thing or that further closing the U.S. economy would be relatively costless—in fact, the preceding sections reveal much the opposite. Nevertheless, the nation's alleged import "dependency" and lack of protective measures are a common justification for new security nationalism—one that the data reveal to be generally groundless.

OPENNESS AND RESILIENCY ARE NOT MUTUALLY EXCLUSIVE. More importantly, there is little to suggest that a country's openness to foreign trade and investment undermines its economic resiliency or response to national emergencies. This conclusion makes intuitive sense—greater trade and investment openness might make an economy more vulnerable to *external* supply or demand shocks, but it also helps reduce a nation's vulnerability to (and improve its recovery from) *domestic* shocks—and is borne out in academic research. For example, economists Francesco Caselli and others found in 2015 that, when a countrywide shock occurs, "openness to international trade can lower GDP volatility by reducing exposure to domestic shocks and allowing countries to diversify the sources of demand and supply across countries."[143] Similarly, a 2016 examination of openness and economic fragility from Aida Caldera-Sánchez and colleagues found a positive relationship between trade openness and economic vulnerability.[144] Examining how certain policies (i.e., financial market liberalization, capital account openness, trade openness, exchange rate policies, and product market regulation) affect a country's economic growth and risk of financial crisis, the authors found that "lower import tariffs . . . lowers crisis risk while having a favourable impact on average growth."[145]

Similar conclusions apply to the COVID-19 crisis. For example, a 2020 assessment from Barthélémy Bonadio and others of the pandemic's impact on global supply chains and national economic performance found that "renationalization" of supply chains would generally not improve a country's economic performance after a global pandemic:

> We show that the average real GDP downturn due to the Covid-19 shock is expected to be -29.6%, with one quarter of the total due to transmission through global supply chains. However, "renationalization" of global supply chains does not in general make countries more resilient to pandemic-induced contractions in labor supply. The average GDP drop would have been -30.2% in a world without trade in inputs and final goods. This is because eliminating reliance on foreign inputs increases reliance on the domestic inputs, which are also disrupted due to nationwide lockdowns. In fact, trade can insulate a country imposing a stringent lockdown from the pandemic-shock, as its foreign inputs are less disrupted than its domestic ones.[146]

The authors also examined the effect of pandemic lockdowns on individual sectors (including manufacturing industries such as textiles, chemicals and pharmaceuticals, and electrical equipment) and concluded that "there is no sector in which supply chain renationalization notably improves resilience, measured either by GDP, or by value added of the sector itself." These results are preliminary but consistent with the research on openness and resiliency more generally. Combined, the analyses should foment caution among American policymakers seeking to improve U.S. economic resiliency and performance by renationalizing supply chains.

The research is also backed by anecdotal evidence: in his book on the economics of COVID-19, for example, Cato's Ryan Bourne documents several instances of foreign suppliers and trade openness (e.g., East Asian clothing producers and foreign carmakers) helping the U.S. economy recover and of closed sectors (e.g., domestic meatpacking facilities or tariff-protected light truck production) doing the opposite.[147]

Indeed, domestic policy likely outweighs trade openness in terms of mitigating the risk of economic shocks. For example, two

35

"An early assessment of the pandemic's impact on global supply chains and national economic performance found that 'renationalization' of supply chains would generally not improve a country's economic performance."

36

> "Domestic policy likely outweighs trade openness in terms of mitigating the risk of economic shocks, including pandemics."

of the most "trade-dependent" countries noted in the previous section (Germany and South Korea) experienced COVID-19-induced quarterly GDP contractions in the first half of 2020 that were similar to or better than the relatively "closed" Japan or United States, while other "open" economies performed less favorably over the same period.[148] Germany's initial "V-shaped" recovery is particularly noteworthy in this regard, given the country's level of economic development and high dependence on trade.[149] Sweden, meanwhile, also has "high exposure to international value chains" but "face[d] a milder recession this year than many economies in the euro area."[150] Bourne further notes that certain foreign suppliers rebounded quickly from COVID-19, but "it was the lack of demand from importing countries that took longer to contain the virus, such as the United States and the UK, which prolonged a depression of activity in those industries."[151] These situations indicate that domestic policies, in particular countries' ability to control the virus or keep their economies open, drove their economic performance more than trade or investment liberalization. Subsequent research supports these conclusions.[152]

Research also supports the general primacy of domestic policy and domestic demand over trade openness in terms of mitigating economic shocks. For example, the study from Caldera and others found that the policies with the greatest benefit in terms of both economic growth and crisis risk were those that improve the quality of domestic institutions (e.g., more effective government, greater voice and accountability, and better control of corruption). A 2016 examination from Lino Briguglio and Melchior Vella of 172 countries found that trade openness can lead to economic growth volatility but that this risk can be mitigated entirely by good governance (as measured in this case by the Rule of Law portion of the Worldwide Governance Indicators).[153] A World Bank analysis of how various policies affect the ability of European economies to absorb an external shock and recover thereafter found the most significant and negative effects for both shock absorption and recovery to come from domestic policies, namely state control of production and prices; regulatory barriers to entrepreneurship; and an uncompetitive banking sector. (Trade openness effects, meanwhile, were mixed or ambiguous.)[154]

MARKET-ORIENTED POLICIES CAN SUPPORT MANUFACTURING AND NATIONAL SECURITY

Although the data belie the supposed "death" of the U.S. manufacturing sector and the defense industrial base, several market-oriented policy reforms would support national security by strengthening the U.S. economy in general and boosting the manufacturing sector's performance in particular. Where possible, the reforms discussed in this section incorporate current U.S. laws and policies related to national security (see the Appendix) and reflect the preceding sections' conclusions that using only domestic output to satisfy U.S. demand in times of emergency would be impractical (as even many industrial policy advocates recognize[155]) and counterproductive; that U.S. industrial policies targeting specific companies or industries have a woeful track record; that simply removing government restrictions on trade, investment, and consumption would better achieve core national security objectives; and that domestic policies are a critical contributor to a nation's economic strength and resiliency.

Trade and Investment Reforms to Bolster National Security

Six policies liberalizing trade and investment would support U.S. national security by improving access to and production of essential goods:

- **Unilateral liberalization of tariffs on industrial inputs.** President Trump's tariffs on global steel and aluminum imports, as well as on Chinese capital goods, have been repeatedly found to harm the U.S. manufacturing sector

and antagonize allies (e.g., the EU and Canada) while providing little long-term benefit to the protected domestic industries at issue. Eliminating these measures—whether through unilateral executive action or legislation—would thus provide an immediate boost to the U.S. manufacturing sector. Longer term, Congress should reform or eliminate the U.S. laws, such as Section 232, that provide the president with vast discretion to impose tariffs on "national security" or other grounds without any congressional input or oversight—thus generating tariffs and injecting uncertainty into manufacturing supply chains. Should full repeal or line-by-line amendment of these laws prove politically untenable, Congress should consider legislation that would subject presidential trade restrictions to congressional approval, such as the Global Trade Accountability Act, which Sen. Mike Lee (R-UT) introduced.[156]

U.S. "trade remedy" duties on industrial inputs impose similar economic harms.[157] Congress should follow other jurisdictions by requiring the executive branch to consider the costs that these duties inflict on other U.S. manufacturers and to refrain from implementing them where doing so would be inconsistent with the "public interest," including U.S. national security. Other methodological improvements might also be in order.[158] Finally, Congress should expand the current provision of U.S. law prohibiting the president from restricting "the importation into the United States of any material determined to be strategic and critical" under the Stock Piling Act (with limited exceptions) to apply to any other goods that the U.S. government deems so "essential" as to be stockpiled in case of national emergency.[159]

- **New trade and investment agreements with U.S. allies.** The U.S. government should liberalize trade and investment with allies through existing legal mechanisms, including expanding the National Technology and Industrial Base (NTIB) to include allies (and innovative manufacturing nations) such as Finland, Germany, Japan, the Netherlands, South Korea, Singapore, Switzerland, and Sweden; fully implementing the NTIB and further liberalizing trade, investment, and R&D collaboration among all NTIB members, for example by eliminating U.S. procurement restrictions (e.g., Buy American; the Berry Amendment; and the Byrnes-Tollefson Amendment), exempting NTIB members from U.S. investment screening, and eliminating U.S. controls on high-technology and defense-related exports to these trusted nations; and entering into new reciprocal defense procurement agreements or security of supply arrangements, or expanding the coverage of the current agreements (e.g., to medical goods), to ensure that the United States and partner countries have access to essential items in times of emergency or abnormally high demand. Over the longer term, the United States should consider new comprehensive free trade agreements with these and other countries, including by reentering the Trans-Pacific Partnership (now the Comprehensive and Progressive Trans-Pacific Partnership).

  There already appears to be support in Congress for several of these recommendations. For example, the 2021 NDAA instructs the DOD to improve NTIB implementation and consider expanding the list of NTIB member countries.[160] This process has only just begun, and further NTIB reforms—for example with respect to procurement, investment, and export controls—remain necessary. The legislation also imposes new printed circuit board acquisition requirements on the DOD *but* permits the DOD to acquire these items from "covered nations," which includes the

37

"Eliminate restrictions on imports of manufacturing inputs and liberalize trade and investment with allies through mechanisms such as the National Technology and Industrial Base."

38

"Eliminate the Jones Act and 'Buy American' restrictions, and reform U.S. export controls and trade agreement exceptions for 'national security.'"

United States, NTIB members, NATO members with reciprocal procurement agreements, and any other country (excluding Russia, China, Iran, and North Korea) that meets specified national security conditions.[161]

- **Repealing the Jones Act.** As the 2018 Cato Institute paper concluded, the evidence against the Jones Act is compelling:

  Under its watch the U.S. shipbuilding industry has atrophied, its shipping fleet has withered, and any contribution to the military's sealift capability has been trivial at best. The failure of the Jones Act to meet its intended objectives, meanwhile, has inflicted considerable economic harm through a variety of direct and indirect channels. Rather than serving to bolster national security, the Jones Act has stultified domestic shipbuilding, diminished the size of America's merchant marine reserve, and hamstrung our ability to respond expeditiously and effectively to natural and manmade disasters.[162]

  Nothing less than immediate repeal is warranted. In the meantime, the president should grant any waiver requests submitted by American companies now suffering under the law.
- **Reforming U.S. export controls.** As documented by numerous experts, U.S. "national security" restrictions on certain exports, especially technology products such as satellites and semiconductors, can harm the U.S. defense industrial base.[163] For example, export controls can reduce the incentive for investment by reducing the market size for a company's goods.[164] Beyond the aforementioned NTIB-related reform, U.S. policymakers should reform the U.S. export controls regime more broadly by limiting controls to only essential national security objectives; omitting items that are available in other countries; streamlining the export licensing process to minimize exporter (and taxpayer) burdens; or ensuring system flexibility through automatic sunset provisions or mandatory annual reviews of controlled products.
- **Reforming existing trade agreement rules on national security and short supply.** The terms under which U.S. trade agreement parties can restrict trade in the name of "national security" or "short supply" should be revised to establish objective definitions of both terms and ensure that participants' invocation of these exceptions is subject to binding dispute settlement.[165] These reforms would maintain national sovereignty while increasing predictability for U.S. companies and disciplining abuse by governments. The national security exception changes would also be consistent with the United States' historical view of the General Agreement on Tariffs and Trade.[166]
- **Eliminating Buy American restrictions.** As Cato scholars have argued for decades, Buy American procurement requirements are bad law, bad economics, bad trade policy, and bad politics—and can especially harm U.S. manufacturers.[167] The U.S. government should eliminate these restrictions, particularly for the procurement of essential goods and services. For example, the government should terminate the Stock Piling Act's Buy American rules for "strategic and critical materials" and should block attempts to implement similar rules for the Strategic National Stockpile (which covers medical goods). As President Truman warned when signing the Stock Piling Act into law:

  > [Buy American] provisions will not only materially increase the cost of the proposed stockpiles but will tend to defeat the conservation and strategic objectives of the bill by further depleting our already inadequate underground reserves of strategic materials.

> Furthermore, there can be a serious conflict between those provisions and the foreign economic policy which this Government is actively pursuing. It also seems to me that the application of the Buy American Act may frequently hamper the effective achievement of the essential purpose of the legislation which is to enlarge the stock of vital raw materials available within our borders in time of possible emergency.[168]

These principles apply equally today.

Other Market-Oriented Reforms to Enhance U.S. National Security

Beyond trade policy, the United States should implement "horizontal" economic reforms that would boost U.S. manufacturers and national security:

- **Human capital.** To address the DOD's immediate concerns regarding the dearth of qualified U.S. manufacturing workers in science, technology, engineering, and mathematics fields, the federal government should significantly expand high-skilled immigration. Research shows that U.S. restrictions on high-skilled immigration have undermined national security objectives by encouraging multinational corporations to offshore jobs and R&D activities to their affiliates in more welcoming countries and by benefiting potential U.S. adversaries, especially China, in terms of new jobs, new businesses, and new innovations, thus causing a relative decline in the United States' own innovative capacity.[169] In fact, restrictive U.S. immigration policies have likely boosted China's semiconductor industry, which the ITC in 2019 found had been hamstrung by a lack of skilled human capital.[170]

  Over the longer term, private-sector training and apprenticeship programs can equip native workers for the future needs of advanced manufacturing industries. For example, the employer-funded Federation for Advanced Manufacturing Education program has helped hundreds of new high-school graduates and older factory workers gain modern ("grey collar") manufacturing skills and find high-paying work in U.S. factories that now utilize computers and robotics.[171] These efforts can be assisted by reforms to federal, state, and local government educational policies that eliminate biases against vocational schools that can provide skills at lower cost and allow older workers, whether currently employed or recently jobless, to train for new careers.[172]
- **Tax policy.** Governments should further reform corporate tax policy to encourage American companies—manufacturers or otherwise—to locate and invest in the United States and to ensure that current businesses are globally competitive. In particular, the federal government and the states should further reduce corporate tax rates, which combined remain above the Organisation for Economic Co-operation and Development average and are shouldered in large part by workers and consumers.[173] The government should also expand and make permanent the 2017 Tax Cuts and Jobs Act's temporary "full expensing" provision ("100 percent bonus depreciation"), which allows U.S. businesses to write off certain business investments immediately and fully. Localities might also consider lowering property taxes, which are borne by owners of industrial (and other) real estate and are high by global standards.[174] These reforms would benefit all companies and should be pursued regardless of any national security concerns. Nevertheless, they *would* benefit the U.S. manufacturing sector: substantial research shows, for example, that full expensing increases investment, jobs,

"'Horizontal' reforms of U.S. immigration, education, tax, and regulatory policies would boost U.S. manufacturers and national security."

40

> "The case of machine tools—highlighted as 'at risk' by the Department of Defense—shows the potential benefits of the free market reforms proposed herein."

and economic growth and that a permanent and expanded version (covering structures such as factories) would especially benefit U.S. manufacturers.[175]

- **Eliminate "never needed" regulations.** During the COVID-19 pandemic, state and federal governments temporarily suspended hundreds of regulations to boost domestic production, investment, and adjustment during the national emergency, revealing in the process that these "never needed" regulations discouraged economic growth and dynamism while providing little, if any, public benefit.[176] Although many of these regulations affect nonmanufacturing issues and industries (e.g., physician licensing), many others—such as FDA testing and approval of medical goods—directly inhibit the domestic production of certain essential goods. Others, such as biofuels mandates, increase production costs for U.S. manufacturers. Repeal of these regulations would therefore boost not only economic growth generally but also American manufacturers directly—all to the benefit of national security.

Additional government action should not be considered unless and until these and other market-oriented policies prove insufficient to satisfy legitimate U.S. national security concerns. New and expansive industrial policy programs, however, would be unnecessary. U.S. law already provides the federal government with several tools (e.g., Title III of the Defense Production Act of 1950 or U.S. government stockpiles) to fill discrete gaps in the defense industrial base. (See the Appendix.) And experience with these laws, the current state of the U.S. manufacturing sector, and the failures of past "security nationalism" policies argue for both skepticism and caution when pursuing protectionism, subsidies, or other government interventions intended to boost specific parts of the U.S. defense industrial base.[177]

Case Study: Machine Tools

The case of machine tools—an industry highlighted as "at risk" by the DOD in its *Fiscal Year 2019 Industrial Capabilities Report to Congress* (and often by advocates of U.S. industrial policy)—shows the potential benefits of several of the reforms in the previous section. The DOD's report made the following findings:

- The United States in 2017 was the second largest consumer and fifth largest producer of machine tools (behind China, Japan, Germany, and Italy, and just in front of South Korea, Taiwan, and Switzerland).
- "Major risks" to the industry include U.S. universities' lack of "large-scale industrial machine tool research programs" and of cooperative efforts with industry; a lack of skilled labor to meet current and projected needs (likely the largest problem); "economic tradecraft" and intellectual property theft by China and unnamed other countries; other nations' "coherent investment plans and tax policies to support their own industrial sectors"; and U.S. export controls. The DOD subsequently lamented the fact that foreign machine tool producers, notably in Japan and Taiwan, were increasing exports to China while decreasing exports to the United States.
- To address the "major risks" identified, the DOD has begun working on plans to improve the U.S. machine tools workforce and establish a national network of "machine tool hubs" focused on both skills development and "increasing the prestige of manufacturing as a profession in order to inspire more prospective workers to choose it as a career."[178]

Despite these risks, the DOD did not view it necessary to directly subsidize the U.S. machine tool industry or specific domestic goods using one of the numerous legal authorities permitting it to do so (see Appendix).

Many of the problems that the DOD identified (to the extent that they are valid

at all[179]) would be improved by implementing the reforms discussed in the preceding subsections. Although the United States remained a top-five global producer of machine tools, the government could solidify access to these goods through new arrangements that liberalize trade (tariff and nontariff barriers[180]) in machine tools with allies and major producing nations such as Japan, Germany, Italy, South Korea, and Taiwan. (In a good first step, the Trump administration reduced tariffs on certain Japanese machine tools as part of the 2019 U.S.-Japan "Phase One" Deal.[181]) U.S. machine tools producers and their customers, moreover, would benefit from the elimination of tariffs on industrial inputs (especially steel and aluminum) and current restrictions on high-skill foreign workers as well as from corporate tax and regulatory reforms. And U.S. workers would benefit from private-sector workforce development programs such as the Federation for Advanced Manufacturing Education program.

Given the failures of U.S. machine tools protectionism and planning in the 1980s and 1990s, as well as the documented economic and political problems with American protectionism and industrial policy more broadly, these market-oriented policies should be prioritized.

CONCLUSION

Although theory might support using protectionism and other market interventions to boost national security, current "security nationalism" proposals ignore several facts. First, reports of the demise of U.S. industrial base are exaggerated—overall, the U.S. manufacturing sector is productive on both global and historical terms, as are the industries that are most relevant to national security. Second, history and academic research show that freer markets can bolster national security and economic resilience and that U.S. "security nationalism," by contrast, has been not only unsuccessful but often based on an expansive and political definition of "national security." Third, U.S. law already permits the federal government, primarily through the DOD, to address discrete weaknesses in the defense industrial base.

For these reasons, expansive new security nationalism proposals warrant extreme skepticism, and market-oriented policies should be prioritized. As President Truman stated decades ago:

> The United States is opposed to governmental policies fostering autarchy, for itself as well as for others. Encouragement of uneconomic domestic production and unjustified preferential treatment of domestic producers destroys trade and so undermines our national economic strength. A large volume of soundly based international trade is essential if we are to achieve prosperity in the United States, build a durable structure of world economy and attain our goal of world peace and security.[182]

American policymakers would be wise to remember—and heed—Truman's advice.

41

"Given the health of U.S. manufacturing, the checkered history of government intervention, and the availability and efficacy of market-oriented alternatives, security nationalism proposals warrant extreme skepticism."

APPENDIX: SUMMARY OF U.S. LAWS INTENDED TO SUPPORT THE DEFENSE INDUSTRIAL BASE

U.S. Policies Expanding International Cooperation to Bolster National Security

THE NATIONAL TECHNOLOGY AND INDUSTRIAL BASE. The United States has established a four-country National Technology and Industrial Base (NTIB) specifically designed to bolster U.S. national security by expanding the country's industrial capacity beyond U.S. borders. A 2020 Congressional Research Service (CRS) report describes the NTIB as follows:

> The [NTIB] consists of the people and organizations engaged in national security and dual-use research and development (R&D), production, maintenance, and related activities within the United States, Canada, the United Kingdom, and Australia. The NTIB, as established by 10 U.S.C. §2500, is intended to support national security objectives of the United States, including supplying military operations; conducting advanced R&D and systems development to ensure technological superiority of the U.S. Armed Forces; securing reliable sources of critical materials; and developing industrial preparedness to support operations in wartime or during a national emergency.[183]

The CRS report adds that the NTIB was part of an effort by Congress in the mid-1990s to support production and R&D of critical defense materials and products. It originally included Canada—a long-standing U.S. defense industrial partner[184]—but was expanded in 2016 (as part of the National Defense Authorization Act for Fiscal Year 2017) to include the United Kingdom and Australia to leverage those countries' defense R&D efforts and to avoid U.S. restrictions on exports of technology to these allies. According to the report, "Congress also directed [the Department of Defense] to create a plan that would promote closer integration of the technology and industrial bases of all NTIB member countries."[185] Such integration was, in Congress' view, an important way to boost U.S. national security.

Participation in the NTIB allows member countries and their manufacturers several benefits: procurement preferences for conventional ammunition, uniforms, and other items; exemptions from some domestic sourcing (Buy American) restrictions on the U.S. government's acquisition of buses, chemical weapons antidotes, valves and machine tools, ball bearings and roller bearings, and certain components for naval ships (including diesel engines);[186] exemptions from foreign ownership requirements of the National Industrial Security Program; and preferences for contracts awarded under a national security program. U.S. law also directs the secretary of defense to develop a "national security strategy for the NTIB based on a prioritized assessment of risks and challenges to the defense supply chain" and to submit both an annual report to Congress on "NTIB capabilities, performance, and vulnerabilities" and a report on "unfunded priorities to address gaps or vulnerabilities in the NTIB."[187]

Although the NTIB was established years ago and reflects Congress's priority to bolster national security through international cooperation, little work has been undertaken to achieve congressional objectives. For example, the *Fiscal Year 2019 Industrial Capabilities Report to Congress* issued in 2020 contains limited references to the NTIB and describes no major U.S. government efforts thereunder (even though it notes a 2018 Department of Defense [DOD] recommendation to address industrial base risks by "working with allies and partners on joint industrial base challenges through the NTIB and similar structures").[188]

The CRS also noted other limitations on the NTIB's use and thus the effective integration of the NTIB countries' defense industrial bases, including domestic sourcing requirements, such as the Buy American Act (41 U.S.C. §§ 8301–8303) and the Byrnes-Tollefson Amendment (10 U.S.C. § 8679); small business set-asides that apply only to American small businesses as defined under U.S. law; U.S. export controls on certain categories of defense articles and services, especially the International Traffic in Arms Regulations, administered by the State Department, that restrict the export of defense-related goods and services;[189] and the NTIB's omission of Finland, Germany, the Netherlands, South Korea, Singapore, Switzerland, Sweden, or other U.S. allies that are innovative and productive.[190]

INTERNATIONAL DEFENSE PROCUREMENT AGREEMENTS. The United States also has several agreements with allies to ensure sufficient supplies of defense-related materials:

- Pursuant to reciprocal defense procurement agreements between the DOD and its counterparts in 27 foreign governments, each country agrees to remove barriers to national security–related purchases of supplies and services of the other country.[191] The countries with which the DOD has these agreements

also are considered "qualifying countries" under the United States' Defense Federal Acquisition Regulation Supplement 225.872, meaning that the DOD has determined it "inconsistent with the public interest" to apply restrictions on the federal government's acquisition of qualifying products from these countries.[192]

- Second, the DOD also has security of supply arrangements with several countries (see Table 8) that "allow the DOD to request priority delivery for DOD contracts, subcontracts, or orders from companies in these countries." These arrangements implement the "Meeting National Defense Requirements" section of the "Declarations of Principles for Enhanced Cooperation in Matters of Defense Equipment and Industry" that the United States has signed with certain nations that "recognizes the potential for a certain degree of mutual interdependence of supplies needed for national security, and calls for the parties to explore solutions for achieving assurance of supply."[193]

Table 8
U.S. defense procurement agreements

Country	Security of supply arrangement	Reciprocal defense procurement and acquisition
Australia	✔	✔
Austria		✔
Belgium		✔
Canada	✔	✔
Czech Republic		✔
Denmark		✔
Egypt		✔
Estonia		✔
Finland	✔	✔
Germany		✔
Greece		✔
Israel		✔
Italy	✔	✔
Japan		✔
Latvia		✔
Luxembourg		✔
Netherlands	✔	✔
Norway	✔	✔
Poland		✔
Portugal		✔
Slovenia		✔
Spain	✔	✔
Sweden	✔	✔
Switzerland		✔
Turkey		✔
United Kingdom	✔	✔

Sources: "Security of Supply," Industrial Policy, Department of Defense, http://www.businessdefense.gov/security-of-supply/; and "Reciprocal Defense Procurement and Acquisition Policy Memoranda of Understanding," International Contracting, Contract Policy, Defense Pricing and Contracting, https://www.acq.osd.mil/dpap/cpic/ic/reciprocal_procurement_memoranda_of_understanding.html.

Domestic Laws Aimed at Supporting the "Defense Industrial Base"

U.S. law also provides the DOD with authority to identify and mitigate defense-related industrial procurement and capacity issues.

First, U.S. law requires the DOD to assess annually the defense industrial base and work to mitigate any potential concerns. In particular, the DOD is required to "develop a national security strategy" for the NTIB that "shall be based on a prioritized assessment of risks and challenges to the defense supply chain and shall ensure that the national technology and industrial base is capable of achieving" multiple enumerated objectives, including the president's *National Security Strategy* and "sustaining production, maintenance, repair, logistics, and other activities in support of military operations of various durations and intensity." The law further requires the DOD, in consultation with secretary of commerce and the secretary of energy to "prepare selected assessments of the capability of the national technology and industrial base to attain the national security objectives set forth" in the statute. This includes the submission of an annual *Industrial Capabilities Report* to Congress that reviews the U.S. defense industrial base and describes "any mitigation strategies necessary to address any gaps or vulnerabilities in the national technology and industrial base" and "any other steps necessary to foster and safeguard the national technology and industrial base."[194]

Second, U.S. law provides the DOD with several tools to implement the "mitigation strategies," including those listed and described in Table 9. For example, the Defense Production Act of 1950 (DPA) allows the DOD to identify priority sectors for government contracting and enter into those contracts (Title I) and to support, through purchases or loans/loan guarantees, "essential" domestic industrial base capabilities that are found to be nonexistent, at risk of loss, or insufficient to meet government needs (Title III). Several other programs provide the DOD with the authority and funding to support the industrial base. The DOD also can use the National Defense Stockpile Transaction Fund and Strategic and Critical Materials Stock Piling Act (50 U.S.C. § 98 *et seq.*), which authorizes the National Defense Stockpile Manager to fund material R&D projects to develop new materials for the stockpile and requires the president to encourage the development and conservation of domestic sources of "strategic and critical materials" through procurement.[195] The Stock Piling Act is also subject to the Buy American Act of 1933, despite President Truman's opposition at the time the policy was enacted.[196]

Past DOD recommendations and actions have used these laws to support the U.S. defense industrial base. For example, in a September 2018 DOD report issued pursuant to President Trump's July 21, 2017, Executive Order 13806 on "Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States," the DOD expressly noted that it can address industrial base risks by, among other things: expanding direct investment in the lower tier of the industrial base through DPA Title III, ManTech, and Industrial Base Analysis and Sustainment programs; diversifying sources of domestic and international supply of critical materials and technologies, including through expanded use of the National Defense Stockpile program; and working with allies and partners on joint industrial base challenges through the NTIB and similar structures.[197]

The fiscal years 2018 and 2019 industrial capabilities reports submitted to Congress also use the legal authorities from Table 9. The reports, however, do not show a broad-based decline in the U.S. manufacturing sector as a whole and instead conclude that the U.S. defense industrial base is, in general, "profitable and expanding."[198] The fiscal year 2019 report, in particular, summarizes the strong and improving state of the defense industry and then provides sector-specific risk assessments for aircraft; chemical, biological, radiological, nuclear; ground systems; missiles and munitions; nuclear matter warheads; radar and electronic warfare; shipbuilding; soldier systems; space; materials; cybersecurity for manufacturing; electronics; machine tools; organic defense industrial base; software engineering; and workforce. These analyses reveal very few sector-wide concerns, instead focusing on narrow product/process risks (e.g., ammonium perchlorate supply or gallium nitride technologies[199]) that may require DOD support. As a result, the fiscal year 2019 report lists relatively few actions by the DOD to mitigate—for example through direct funding under DPA Title III—risks to the domestic industrial base. Indeed, the most common risks found in the DOD industrial bases analyses are lack of a skilled and "clearable" workforce and insufficient demand from the U.S. government. Neither can be blamed on "deindustrialization."

The primary exceptions to DOD's conclusions are in the soldier systems (textiles; batteries; night vision), electronics (in particular, printed circuit boards), and machine tools sectors, where the DOD voiced broader concerns about the health of the domestic industry. However, despite these complaints, the DOD did *not* intervene (e.g., through subsidies or contracts) to support the sector's industrial capabilities or specific products. Among the DOD's reasons for not doing so was a lack of "unacceptable levels of industrial base risks."[200] Instead, the DOD's efforts were again focused on improving workforce-related impediments, such as science,

Table 9

U.S. domestic laws intended to support defense industrial base

Program	Legal authority	Objective	Actions
Defense Priorities and Allocations System (DPAS)	Title I of the Defense Production Act of 1950 (DPA)	The purpose of the DPA is to assure the timely availability of industrial resources to meet current national defense and emergency preparedness program requirements and to provide an operating system to support rapid industrial response in day-to-day operations and national emergencies. The DPA authorized the president to require preferential treatment of national defense programs. DPAS establishes procedures for placement of priority ratings on contracts, defines the industry's responsibilities under rated orders, and sets forth compliance procedures.	As of fiscal year (FY) 2019, there were 13 "DX" programs, which have the "highest national defense urgency."
DPA Title III	Title III of the DPA	The DPA Title III program provides the president, through the Department of Defense (DOD), broad authority to ensure timely availability of domestic industrial resources essential for the execution of the National Security Strategy of the United States through the use of tailored economic incentives.	At end of FY 19, the DPA Title III portfolio consisted of 37 projects totaling more than $1 billion in government and industry funding to strengthen the domestic industrial base.
The Committee on Foreign Investment in the United States (CFIUS)	Section 721 of the DPA	CFIUS is an interagency committee that reviews certain foreign acquisitions, mergers, or takeovers of U.S. businesses to determine the effect of a transaction on the national security of the United States. The committee is chaired by the secretary of the Treasury Department and includes nine voting members, including the DOD (through its Office of Industrial Policy).	CFIUS reviewed 231 "covered transactions" in 2019.
Office of Small Business Programs (OSBP)	Section 831 of the National Defense Authorization Act of FY 91	The OSBP maximizes prime and subcontracting opportunities for small businesses to respond to DOD "warfighter requirements." The program's goal is to contribute to an "innovative, cost effective, and agile industrial base, to directly support the National Defense Strategy and a robust economy."	In FY 19, the OSBP conducted numerous training sessions for small businesses across the country.
Industrial Base Fund	10 U.S.C. § 2508	The Industrial Base Analysis and Sustainment (IBAS) program seeks to "create a modern Industrial Base that fortifies traditional and forges emerging sectors to respond at will to National Security Requirements." Under the IBAS, DOD makes direct investments "to improve industrial base resilience to improve force readiness." The IBAS office directs investment by identifying strategy/focus areas, obtaining resources, and overseeing the execution of projects, "aiming to ameliorate industrial base and manufacturing issues and strengthen the defense industrial base." This includes efforts through Cornerstone Other Transaction Authority, which is a government-run, integrated contract vehicle that carries out prototype projects, capabilities, and capacities in support of defense industrial base requirements across 18 sectors.	In FY 19, IBAS made investments in the following areas: human capital (solid rocket motor initiative and workforce skills); infrastructure (naval propulsion foundry, aluminum foundry, tungsten, and electronic beam welding); source mitigation (microelectronics and materials including boron carbide, explosive initiators, carbon fiber, and critical energetics [butanetriol]); and constrained, fragile, and emerging markets (directed energy supply chain assurance initiative, radar affordability and resiliency initiative, small unmanned aircraft system, optical ceramics, and carbon nanotube).
Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs	15 U.S.C. § 638	The SBIR program is intended to strengthen the role of innovative small business concerns in federally funded research or research and development (R/R&D). Any federal agency with an extramural budget for R/R&D in excess of $100 million must participate in the SBIR program and reserve a minimum percentage of its R/R&D budgets for small business R/R&D contracts. The STTR program expands public- and private-sector partnerships to include joint venture opportunities for small businesses and nonprofit research institutions. In particular, the STTR program provides financing to bridge the gap between basic R&D and commercialization of resulting innovations.	According to a 2019 DOD-funded report, the SBIR/STTR contracts initiated between 1995 and 2015 generated: $121 billion in total sales of new products and services; $28 billion in sales of new products to the U.S. military; $347 billion in total economic impact nationwide; and 1,508,295 U.S. jobs with an average compensation of $73,461.

Table 9 (continued)

Program	Legal authority	Objective	Actions
Rapid Innovation Fund (RIF)	Pub. L. No. 116-92 § 878	The RIF program was established by the National Defense Authorization Act of FY 11 as a competitive, merit-based program designed to accelerate the fielding of innovative technologies from SBIR/STTR, defense laboratories, and other sources into military systems.	Congress appropriated $250 million to RIF in FY 19 funding. FY 19 program highlights include: $120 million projects selected by modernization assistant directors; $120 million mission priority projects selected by military services and DOD agencies; and a total of 94 anticipated awards worth $2.5 million each.
ManTech	10 U.S.C. § 2521	The DOD Manufacturing Technology (ManTech) program is designed to anticipate and close gaps in domestic manufacturing capabilities through the "development and application of advanced manufacturing technologies and processes that will reduce the acquisition and supportability costs of defense weapon systems and reduce manufacturing and repair cycle times across the life cycles of such systems."	In FY 19, ManTech projects covered infrared sensors, hypersonic aeroshell coatings, high-yield focal plane arrays, OLED microdisplays, microcircuit emulation, and long-range discrimination radar.
National Defense Stockpile Transaction Fund	Strategic and Critical Materials Stock Piling Act	The Strategic and Critical Materials Stock Piling Act of 1939 provides for the procurement, recycling, and upgrade of strategic and critical materials by the National Defense Stockpile (NDS) program. The DOD administers this program via a revolving fund called the NDS Transaction Fund, which is projected to be exhausted by FY 25.	Between FY 03 and FY 18, the NDS Transaction Fund made the following distributions: NDS acquisitions, source qualifications, R&D ($471.3 million); nondefense accounts ($998.6 million); other defense accounts ($2.702 billion); and net cash flow ($3.283 billion).

Source: Office of Industrial Policy, *Industrial Capabilities: Annual Report to Congress, Fiscal Year 2018* (Washington: Department of Defense, May 13, 2019).

technology, engineering, and mathematics training and "increasing the prestige of manufacturing as a profession in order to inspire more prospective workers to choose it as a career."[201]

U.S. Trade Laws Aimed at Protecting the Defense Industrial Base

U.S. law also authorizes the imposition of restrictions on imports to protect certain U.S. industries. The following laws are the most common:

- Section 232 of the Trade Expansion Act of 1962 authorizes the executive branch to initiate an investigation to determine the effects on the national security of imports of a certain product or group of products; prepare a report on the findings of such an investigation and recommend action (e.g., tariffs or quotas) against the subject imports where the report finds that "such article is being imported into the United States in such quantities or under such circumstances as to threaten to impair the national security"; and based on the report and recommendations, adjust the imports of the article and its derivatives so that such imports will not threaten to impair the national security.[202] The Commerce Department (or the Department of the Treasury before it) initiated a total of 31 Section 232 investigations between 1962 and 2019 and initiated three more cases in the first half of 2020.[203]
- U.S. "trade remedy" laws allow for the imposition of duties on imports from specific countries that are found to have injured or threatened to injure the U.S. industry making the same (or directly competitive) product. Antidumping duties guard against imports that are alleged to be priced below "fair market value" (typically determined via a Commerce Department examination of home market prices or production costs); countervailing duties apply to allegedly subsidized imports; and safeguards apply to imports that have experienced recent and unexpected surges. As of August 2020, there were 539 antidumping or countervailing duty orders and two safeguard actions.[204]
- Buy American laws restrict government procurement to domestically produced goods. The Buy American Act of 1933 requires federal agencies, including the DOD, to buy U.S. "unmanufactured articles, materials, and supplies" and "manufactured articles, materials, and supplies" (produced in the United States domestic inputs) when they are acquired for public use, unless a specific exception applies.[205] Other major domestic procurement restrictions include the Buy America provision of the Surface Transportation Assistance Act of 1982; the American Iron and Steel

Requirements of the Consolidated Appropriations Act, 2014, and the Water Resources Reform and Development Act of 2014; and the American Recovery and Reinvestment Act of 2009. These laws restrict specific types of federal government procurement, especially for the construction of public buildings, aviation projects, highways, railroads and rail cars, and buses;[206] specific sectors, including supplies, construction materials, information technology, and defense;[207] and the procurement of specific materials, especially iron and steel.[208] Finally, defense procurement is further restricted by the Berry Amendment (10 U.S.C. § 2533a), which applies to food, clothing, fabrics, fibers, yarns, other made-up textiles, and hand or measuring tools; and the Byrnes-Tollefson Amendment (10 U.S.C. § 8679), which restricts U.S. government contracting for vessel construction or repair at foreign shipyards.[209]

Other U.S. laws intended to protect American manufacturers from allegedly unfair or injurious competition include Section 337 (19 U.S.C. § 1337), which addresses antitrust and intellectual property rights claims, including allegations of patent infringement and trademark infringement by imported goods; Section 301 of the Trade Act of 1974, which permits the Office of the U.S. Trade Representative to respond to unfair trade practices and in certain cases impose unilateral remedies (e.g., tariffs) against imports from the offending country; and both the Trading with the Enemy Act of 1917 and International Emergency Economic Powers Act of 1977, which allow the president to regulate all forms of international commerce and to freeze assets in times of war or national emergency.

48

NOTES

1. Adam Thierer, "On Defining 'Industrial Policy,'" *Technology Liberation Front* (blog), September 3, 2020.

2. Matt Winesett, "Would Alexander Hamilton Support Tariffs Today?," *AEIdeas* (blog), American Enterprise Institute, April 4, 2018.

3. Marco Rubio, "We Need a More Resilient American Economy," opinion, *New York Times*, April 20, 2020.

4. Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, vol. 1, ed. Edwin Cannan (London: Methuen, 1904).

5. Milton Friedman and Rose D. Friedman, "The Case for Free Trade," *Hoover Digest* 1997, no. 4 (October 30, 1997).

6. For example, see Jon Murphy, "Does National Security Justify Tariffs?," Library of Economics and Liberty, May 7, 2018.

7. Smith, *Wealth of Nations*, vol. 2.

8. Friedman and Friedman, "Case for Free Trade."

9. Murphy, "Does National Security Justify Tariffs?"

10. Robert Z. Lawrence, "Recent US Manufacturing Employment: The Exception That Proves the Rule," Peterson Institute for International Economics Working Paper no. 17-12, November 2017, table 1.

11. Robert Z. Lawrence, "Trade Surplus or Deficit? Neither Matters for Changes in Manufacturing Employment Shares," Peterson Institute for International Economics Working Paper no. 20-15, September 2020.

12. Bureau of Labor Statistics, "Employment Projections: 2019–2029 Summary," Department of Labor news release no. USDL-20-1646, September 1, 2020.

13. Robert Z. Lawrence and Lawrence Edwards, "US Employment Deindustrialization: Insights from History and the International Experience," Peterson Institute for International Economics Policy Brief no. PB13-27, October 2013.

14. "The Conference Board International Labor Comparisons," Conference Board, https://www.conference-board.org/ilcprogram/.

15. Ryan Bourne, "Do Oren Cass's Justifications for Industrial Policy Stack Up?," Cato Institute, August 15, 2019.

16. "GDP by Industry," Bureau of Economic Analysis, https://www.bea.gov/data/gdp/gdp-industry; and Mack Ott, "The Growing Share of Services in the U.S. Economy—Degeneration or Evolution?," *Federal Reserve Bank of St. Louis Review* 69, no. 6 (June/July 1987): 5–22.

17. As the St. Louis Federal Reserve noted in 1987 (citing economic historians from the 1950s), for example, "there is substantive evidence that the postwar rise in the share of U.S. output in services reflects a relative shift in final demand for services and away from commodities." Ott, "Services in the U.S. Economy," p. 12.

18. Lawrence and Edwards, "US Employment Deindustrialization," p. 6.

19. Lawrence and Edwards, "US Employment Deindustrialization"; and Lawrence, "Recent US Manufacturing Employment," p. 3, fig. 2, and p. 12, fig. 6.

20. Francisco J. Buera and Joseph P. Kaboski, "Scale and the Origins of Structural Change," *Journal of Economic Theory* 147, no. 2 (March 2012): 692, fig. 6; and Lawrence, "Trade Surplus or Deficit," p. 14.

21. Justin Lahart, "Why Factories Are So Strong in a Pandemic," *Wall Street Journal*, September 1, 2020.

22. Mark J. Perry, "Manufacturing's Decline Share of GDP Is Inevitable, Global, and Something to Celebrate," *AEIdeas* (blog), American Enterprise Institute, March 22, 2012; and Timothy Taylor, "Global Manufacturing: A McKinsey View," *Conversable Economist* (blog), November 30, 2012.

23. Lawrence and Edwards, "US Employment Deindustrialization," p. 11, table 3.

24. Buera and Kaboski, "Scale and the Origins of Structural Change."

25. "The national security of the United States requires the technological and intellectual capabilities of domestic and foreign companies, academia, and dual-use technology providers collaborating at the forefront of future generation technologies, along with the sub-tiers and components suppliers that support them." Office of Industrial Policy, *Industrial Capabilities: Annual Report to*

Congress, Fiscal Year 2018 (Washington: Department of Defense, May 13, 2019), p. 1.

26. Daniel J. Ikenson, "Thriving in a Global Economy: The Truth about U.S. Manufacturing and Trade," Cato Institute Trade Policy Analysis no. 35 (August 28, 2007).

27. World Trade Organization, *Trade Profiles 2019* (Geneva, Switzerland: World Trade Organization, 2019), p. 3.

28. "Inward FDI Stocks by Industry," OECD Data, Organisation for Economic Co-operation and Development, https://data.oecd.org/fdi/inward-fdi-stocks-by-industry.htm.

29. Office of Industrial Policy, *Industrial Capabilities: Fiscal Year 2018*, p. 17; and Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report to Congress* (Washington: Department of Defense, June 23, 2020), pp. 34–35, 37.

30. Scott Lincicome, "Testing the 'China Shock': Was Normalizing Trade with China a Mistake?," Cato Institute Policy Analysis no. 895, July 8, 2020; Susan Houseman, "Is Manufacturing in Decline?," W. E. Upjohn Institute for Employment Research, October 2016; and Neil Irwin, "The Most Important Least-Noticed Economic Event of the Decade," *New York Times*, September 29, 2018.

31. "International Comparisons of Manufacturing Productivity and Unit Labor Cost—Data, The Conference Board, updated January 6, 2020, https://www.conference-board.org/ilcprogram/index.cfm?id=30139.

32. Lawrence, "Recent US Manufacturing Employment." Indeed, increasing U.S. manufacturing employment since 2010 is likely the result of slow productivity growth in the sector since the Great Recession.

33. Kane Farabaugh, "Sedans Take Backseat to SUVs, Trucks for American Buyers," *Voice of America*, February 14, 2020; Tim Mullaney, "It's Small Cars, Not Auto Jobs, Making the Big U.S. Move to Mexico," *CNBC*, October 19, 2016; Bill Vlasic, "Ford Plants Go to Mexico, but U.S. Jobs Stay Around," *New York Times*, October 18, 2016; and Dan Ikenson, "Ending the 'Chicken War': The Case for Abolishing the 25 Percent Truck Tariff," Cato Institute Trade Briefing Paper no. 17, June 18, 2003.

34. Scott Lincicome, "'Seemingly out of Nowhere,'" *Cato at Liberty* (blog), Cato Institute, August 7, 2020.

35. For example, see Susan N. Houseman, "Is Automation Really to Blame for Lost Manufacturing Jobs?," *Foreign Affairs*, September 7, 2018.

36. In his 2019 book, Andrew McAfee provides data from the U.S. Geological Survey to show declining U.S. consumption of metals (aluminum, nickel, copper, steel, and gold), fertilizer, wood products, and fuels since 2000—following decades of increases and even amid substantial gains in real GDP. Organisation for Economic Co-operation and Development data on "material consumption" (i.e., the actual amount of materials [in terms of weight] used in an economy) confirm these observations for both the United States and other developed countries. Andrew McAfee, *More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources—and What Happens Next* (New York: Scribner, October 8, 2019); and "Material Consumption," OECD Data, Organisation for Economic Co-operation and Development, 2020, https://data.oecd.org/materials/material-consumption.htm.

37. "GDP by Industry," Bureau of Economic Analysis, https://apps.bea.gov/iTable/index_industry_gdpIndy.cfm.

38. Semiconductor Industry Association, *2020 SIA Factbook* (Washington: Semiconductor Industry Association, 2020); and Semiconductor Industry Association, "CHIPS for America Act Would Strengthen U.S. Semiconductor Manufacturing, Innovation," Semiconductor Industry Association, June 10, 2020.

39. "UN Comtrade Database," Trade Statistics, Statistics Division, Department of Economic and Social Affairs, United Nations, https://comtrade.un.org/data/. The goods at issue are categorized under tariff codes 8542 ($40.0 billion) and 8541 ($6.7 billion) of the Harmonized System.

40. Semiconductor Industry Association, *2020 State of the U.S. Semiconductor Industry* (Washington: Semiconductor Industry Association, June 2020).

41. "Research and Development: U.S. Trends and International Comparisons," Science & Engineering Indicators, National Science Foundation, https://ncses.nsf.gov/pubs/nsb20203/u-s-business-r-d.

42. "Direct Investment & Multinational Enterprises (MNEs)," Bureau of Economic Analysis, https://apps.bea.gov/iTable/index_MNC.cfm.

50

43. For example, see "VanEck Vectors Semiconductor ETF (SMH)," Yahoo Finance, https://finance.yahoo.com/chart/SMH.

44. Peter, "Production of Snapdragon 875 Has Started on TSMC's 5nm Node," *GSMArena*, June 22, 2020; and Bill Maurer, "Intel Beats Big, but Delays 7nm," Seeking Alpha, July 23, 2020, https://seekingalpha.com/article/4360481-intel-beats-big-delays-7nm.

45. Scott Lincicome, "Determining America's 'Dependence' on China for Essential Medical Goods," *Cato at Liberty* (blog), Cato Institute, July 13, 2020.

46. Fernando Leibovici, Ana Maria Santacreu, and Makenzie Peake, "How Much Does the U.S. Rely on Other Countries for Essential Medical Equipment?," *On the Economy Blog*, Federal Reserve Bank of St. Louis, April 8, 2020.

47. Scott Lincicome, "New @wto Report on trade in medical goods shows the USA to be a top global producer/exporter (yes *exporter*) of medical goods: wto.org/english/news_e...," Twitter, April 3, 2020, 2:03 pm, https://twitter.com/scottlincicome/status/1246136368595681281.

48. "NAICS 339113—Surgical Appliance and Supplies Manufacturing," Industrius CFO, https://secure.industriuscfo.com/industry-metrics/naics/339113-surgical-appliance-and-supplies-manufacturing.

49. For example, see Rachael S. Davis, "COVID-19: The Textile Industry Responds to PPE Shortage," *Textile World*, May 27, 2020.

50. Scott Lincicome, "What If Politicians Are the Biggest Medical Supply Chain Risk?," *Cato at Liberty* (blog), Cato Institute, September 9, 2020.

51. World Trade Organization, "Trade in Medical Goods in the Context of Tackling COVID-19," April 3, 2020.

52. Scott Lincicome, "On 'Supply-Chain Repatriation,' It's Buyer (And Nation) Beware," *National Review*, April 28, 2020.

53. Janet Woodcock, "Safeguarding Pharmaceutical Supply Chains in a Global Economy," testimony before the House Committee on Energy and Commerce, Subcommittee on Health, Food and Drug Administration, October 30, 2019; and Lincicome, "What If Politicians Are the Biggest Medical Supply Chain Risk?"

54. Qualifying countries include Australia; Austria; Belgium; Canada; Czech Republic; Denmark; Egypt; Estonia; Finland; France; Germany; Greece; Israel; Italy; Japan; Latvia; Luxembourg; Netherlands; Norway; Poland; Portugal; Slovenia; Spain; Sweden; Switzerland; Turkey; and the United Kingdom. "Reciprocal Defense Procurement and Acquisition Policy Memoranda of Understanding," International Contracting, Contract Policy, Defense Pricing and Contracting, https://www.acq.osd.mil/dpap/cpic/ic/reciprocal_procurement_memoranda_of_understanding.html.

55. Partner countries include Australia, Canada, Finland, Italy, the Netherlands, Spain, Sweden, and the United Kingdom. "Security of Supply," Industrial Policy, Department of Defense, http://www.businessdefense.gov/security-of-supply/.

56. The Commerce Department (or the Department of the Treasury before it) initiated a total of 31 Section 232 investigations between 1962 and 2019 and initiated three more cases in the first half of 2020. Congressional Research Service, "Section 232 Investigations: Overview and Issues for Congress," August 24, 2020.

57. Davide Furceri et al., "Macroeconomic Consequences of Tariffs," International Monetary Fund Working Paper no. 19/9, January 15, 2019.

58. Scott Lincicome, "Doomed to Repeat It: The Long History of America's Protectionist Failures," Cato Institute Policy Analysis no. 819, August 22, 2017.

59. Alessandro Barattieri and Matteo Cacciatore, "Self-Harming Trade Policy? Protectionism and Production Networks," National Bureau of Economic Research Working Paper no. 27630, July 2020.

60. Lydia Cox and Kadee Russ, "Steel Tariffs and U.S. Jobs Revisited," *Econofact*, February 6, 2020.

61. Robert C. Feenstra, "Alternative Sources of the Gains from International Trade: Variety, Creative Destruction, and Markups," *Journal of Economic Perspectives* 32, no. 2 (Spring 2018): 25–46.

62. Gary Clyde Hufbauer and Zhiyao (Lucy) Lu, "The Payoff to America from Globalization: A Fresh Look with a Focus on Costs to Workers," Peterson Institute for International Economics Policy Brief no. 17–16, May 2017.

63. U.S. International Trade Commission, "USITC Releases

Report Estimating the Historical Impact of Trade Agreements," news release no. 16-081, June 29, 2016.

64. For example, a 2018 paper estimated that the annual gains from trade for the U.S. economy range from 2 to 8 percent of gross domestic product (GDP), depending on U.S. demand for foreign factor services—an impressive sum given that the United States is relatively closed (in terms of import consumption as a share of GDP) and resource-rich. Arnaud Costinot and Andrés Rodríguez-Clare, "The US Gains from Trade: Valuation Using the Demand for Foreign Factor Services," National Bureau of Economic Research Working Paper no. 24407, March 2018.

65. Lincicome, "Doomed to Repeat It," p. 23; and Gary Clyde Hufbauer and Eujin Jung, "Steel Profits Gain, but Steel Users Pay, under Trump's Protectionism," *Trade and Investment Policy Watch* (blog), Peterson Institute for International Economics, December 20, 2018.

66. Office of Technology Evaluation, "The Effect of Imports of Steel on the National Security: An Investigation Conducted Under Section 232 of the Trade Expansion Act of 1962, as Amended," Bureau of Industry and Security, Department of Commerce, January 11, 2018, pp. 45–46.

67. "Monthly Production 2017–2016," World Steel Association, https://www.worldsteel.org/steel-by-topic/statistics/steel-statistical-yearbook.html; World Steel Association, *Steel Statistical Yearbook 2016* (Brussels: World Steel Association, October 2016); and U.S. Geological Survey, "Mineral Commodity Summary 2017," Department of the Interior, January 19, 2017, pp. 84–85.

68. The healthy financial position of U.S. steel was summarized in a European Steel Association's written submission: Karl Tachelet (director of International Affairs, EUROFER), "Re: Section 232 National Security Investigation of Imports of Steel," email to Brad Botwin (director of industrial studies, Office of Technology Evaluation, Bureau of Industry and Security, U.S. Department of Commerce), May 31, 2017, pp. 21–23, https://www.bis.doc.gov/index.php/232-steel-public-comments/1787-eurofer-written-submission-public-version/file.

69. Office of Technology Evaluation, "The Effect of Imports of Iron Ore and Semi-Finished Steel on the National Security: An Investigation Conducted under Section 232 of the Trade Expansion Act of 1962, as Amended," Bureau of Industry and Security, Department of Commerce, October 2001.

70. Office of Technology Evaluation, "Effect of Imports of Iron Ore and Semi-Finished Steel," p. 27.

71. Tachelet, "Re: Section 232 National Security Investigation," p. 28, fig. 2.

72. James N. Mattis, "Response to Steel and Aluminum Policy Recommendations," Memorandum for the Secretary of Commerce from the Secretary of Defense, https://www.commerce.gov/sites/default/files/department_of_defense_memo_response_to_steel_and_aluminum_policy_recommendations.pdf.

73. Ana Swanson, "Trump to Impose Sweeping Steel and Aluminum Tariffs," *New York Times*, March 1, 2018.

74. The Trump administration subsequently negotiated quotas with certain countries (Argentina, Brazil, etc.) while excluding Australia entirely.

75. Cox and Russ, "Steel Tariffs and U.S. Jobs Revisited."

76. Cox and Russ.

77. Chris Isidore, "Why American Steel Stocks Plummeted in the Past Year, Despite Tariffs," *CNN Business*, May 21, 2019; and Don Lee, "Trump's Steel Tariffs Were Supposed to Save the Industry. They Made Things Worse," *Los Angeles Times*, October 29, 2019.

78. Proclamation No. 9980, 85 Fed. Reg. 5281 (January 29, 2020).

79. Lee, "Trump's Steel Tariffs Were Supposed to Save the Industry."

80. "6. Case Examples: Shipping Co.: Maritime Cabotage Complicates Logistics and Adds Costs," Reports, World Economic Forum, https://reports.weforum.org/global-enabling-trade-2013/shipping-co/.

81. Colin Grabow, Inu Manak, and Daniel J. Ikenson, "The Jones Act: A Burden America Can No Longer Bear," Cato Institute Policy Analysis no. 845, June 28, 2018.

82. Grabow, Manak, and Ikenson, "The Jones Act."

83. Grabow, Manak, and Ikenson.

84. The other countries are Brazil, Italy, South Korea, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and West

52

Germany. General Accounting Office, "International Trade: Revitalizing the U.S. Machine Tool Industry," GAO NSIAD-90-182, July 1990, https://www.gao.gov/assets/150/149299.pdf.

85. General Accounting Office, "Defense Procurement: DOD Purchases of Foreign-Made Machine Tools," GAO NSIAD-91-70, February 1991, https://www.gao.gov/assets/160/150236.pdf. Section 812 of the Senate's Fiscal Year 2021 National Defense Authorization Act would eliminate these procurement restrictions. National Defense Authorization Act for Fiscal Year 2021, S. 4049, 116th Cong. § 812.

86. Lincicome, "Doomed to Repeat It," p. 15, table 7.

87. Ronald E. Yates, "Keeping Up with Asia," *Chicago Tribune*, December 18, 1994.

88. Gary Clyde Hufbauer and Kimberly Ann Elliott, *Measuring the Costs of Protection in the United States* (New York: Columbia University Press, January 1994), pp. 10–12, tables 1.2 and 1.3. A 1991 General Accounting Office report on the Buy American restrictions found them essentially useless. General Accounting Office, "DOD Purchases of Foreign-Made Machine Tools."

89. Douglas A. Irwin, "Trade Shocks and Response, 1979–1992," in *Clashing over Commerce: A History of U.S. Trade Policy* (Chicago: University of Chicago Press, November 2017), p. 593; and General Accounting Office, "Revitalizing the U.S. Machine Tool Industry," p. 30.

90. General Accounting Office, "Revitalizing the U.S. Machine Tool Industry."

91. Office of Economics, "The Economic Effects of Significant U.S. Import Restraints," Investigation No. 332-325, U.S. International Trade Commission Publication no. 2699, November 1993, p. 23, table 11, https://www.usitc.gov/publications/332/pub_2699.pdf.

92. Donald L. Barlett and James B. Steele, "The 'New' American Worker: Manufacturing Industries are Suffering. Laid-Off Employees May Be Finding Work out There, but It's Often in Lower-Paying Service Jobs," *Philadelphia Inquirer*, September 11, 1996.

93. Irwin, "Trade Shocks and Response, 1979–1992," p. 622.

94. A 1987 U.S. Department of Defense report, for example, argued that dynamic random-access memory (DRAM) were central to the future of U.S. global technology leadership and that the loss of DRAM capacity would destroy U.S. firms' ability to compete in other high-tech sectors. Lincicome, "Doomed to Repeat It."

95. Douglas A. Irwin, "The U.S.-Japan Semiconductor Trade Conflict," in *The Political Economy of Trade Protection*, ed. Anne O. Krueger (Chicago: University of Chicago Press, January 1996), pp. 5–14.

96. T. R. Reid, "Semiconductor Agreement Disastrous Excursion into Protectionism," *Washington Post*, March 4, 1991; and Kenneth Flamm, "Semiconductor Dependency and Strategic Trade Policy," *Brookings Papers on Economic Activity: Microeconomics* 1993, no. 1 (1993).

97. Dorinda G. Dallmeyer, "The United States-Japan Semiconductor Accord of 1986: The Shortcomings of High-Tech Protectionism," *Maryland Journal of International Law* 13, no. 2 (1989): 197.

98. Douglas Irwin, "Trade Politics and the Semiconductor Industry," National Bureau of Economic Research Working Paper no. 4745, May 1994, p. 60; and Claude E. Barfield, *High-Tech Protectionism: The Irrationality of Antidumping Laws* (Washington: AEI Press, 2003).

99. Kenneth Flamm, "U.S. Memory Chip Makers in a Fix," *Washington Post*, March 1, 1988.

100. Barfield, *High-Tech Protectionism*, p. 27.

101. Craig R. Parsons, "The Effect of the Semiconductor Trade Agreement on Japanese Firms," *Singapore Economic Review* 50, no. 01 (April 2005): 117–29; and Richard Baldwin, "The Impact of the 1986 US-Japan Semiconductor Agreement," *Japan and the World Economy* 6, no. 2 (February 1994): 129–52.

102. Dallmeyer, "United States-Japan Semiconductor Accord of 1986," p. 205; and Federal Interagency Staff Working Group, *The Semiconductor Industry* (Washington: Government Printing Office, November 16, 1987).

103. Irwin, "Trade Politics and the Semiconductor Industry," pp. 70–71.

104. Dallmeyer, "United States-Japan Semiconductor Accord of 1986," p. 197.

105. Craig Parsons, "Did the US-Japan Semiconductor Trade

Agreement Have Any Impact?," *Asian Economic Journal* 16, no. 1 (March 2002): 37–51.

106. "Back to the 1980s: Donald Trump's Review of Trade Deficits Is a Blast from the Past," *The Economist*, April 6, 2017.

107. Byron Gangnes and Craig R. Parsons, "Have U.S.-Japan Trade Agreements Made a Difference?," *Journal of the Asia Pacific Economy* 12, no. 4 (April 2004).

108. Flamm, "U.S. Memory Chip Makers in a Fix."

109. Barfield, *High-Tech Protectionism*, p. 27.

110. Dallmeyer, "United States-Japan Semiconductor Accord of 1986," pp. 63–64.

111. Barfield, *High-Tech Protectionism*, p. 28.

112. Irwin, "Trade Politics and the Semiconductor Industry," p. 61.

113. Brink Lindsey, "DRAM Scam," *Reason*, February 1992.

114. Lindsey, "DRAM Scam."

115. Lindsey.

116. Douglas A. Irwin and Peter J. Klenow, "Sematech: Purpose and Performance," *Proceedings of the National Academy of Sciences* 93, no. 23 (November 12, 1996): 12739–42.

117. Kenneth Flamm and Qifei Wang, "SEMATECH Revisited: Assessing Consortium Impacts on Semiconductor Industry R&D," in *Securing the Future: Regional and National Programs to Support the Semiconductor Industry*, ed. Charles W. Wessner (Washington: National Academies Press, 2003), p. 254, https://www.nap.edu/read/10677/chapter/13.

118. James L. Schoff, "U.S.-Japan Technology Policy Coordination: Balancing Technonationalism with a Globalized World," Carnegie Endowment for International Peace working paper, June 29, 2020.

119. Scott Lincicome, "We Can Finally Stop Pretending Trump Isn't a Protectionist," Cato Institute, August 12, 2020; and Alan Beattie, "Time to Kill the US Trade Deficit Delusion," *Financial Times*, September 10, https://www.ft.com/content/fa3a9746-65da-4b32-afde-eb6f858e7c03.

120. Lincicome, "Doomed to Repeat It"; and Daniel J. Ikenson, "Steel Trap: How Subsidies and Protectionism Weaken the U.S. Steel Industry," Cato Institute Trade Briefing Paper no. 14, March 1, 2002.

121. Colin Grabow, "Candy-Coated Cartel: Time to Kill the U.S. Sugar Program," Cato Institute Policy Analysis no. 837, April 10, 2018.

122. Jeffrey P. Bialos, "Oil Imports and National Security: The Legal and Policy Framework for Ensuring United States Access to Strategic Resources," *University of Pennsylvania Journal of International Law* 11, no. 2 (Spring 1989): 244–5.

123. Lincicome, "Doomed to Repeat It"; and Barfield, *High-Tech Protectionism*.

124. "Although the program adds handsomely to large producers' incomes, its appeal has not been strong enough to prevent a dramatic decline in domestic wool production." Department of Agriculture, "USDA01: End the Wool and Mohair Subsidy," https://govinfo.library.unt.edu/npr/library/reports/ag01.html.

125. Lincicome, "Doomed to Repeat It," p. 17.

126. Barfield, *High-Tech Protectionism*, p. 14.

127. I. M. Destler, "America's Uneasy History with Free Trade," *Harvard Business Review*, April 18, 2016, https://hbr.org/2016/04/americas-uneasy-history-with-free-trade.

128. Erich Weede, "The Diffusion of Prosperity and Peace by Globalization," *Independent Review* 9, no. 2 (2004): 165–86; Jon Murphy, "In Defense of Liberal Peace," George Mason University working paper, revised August 3, 2020; Saumitra Jha, "Trading for Peace," *Economic Policy* 33, no. 95 (August 2018): 485–526; Saba L. Mollaian, "Does Trade Equal Peace? The Role of the WTO in International Peace," *Legal Issues of Economic Integration* 46, no. 1 (2019): 77–99; Shabir Ahmad Khan and Zahid Ali Khan Marwat, "CPEC: Role in Regional Integration and Peace," *A Research Journal of South Asian Studies* 31, no. 2 (July–December 2016), http://pu.edu.pk/images/journal/csas/PDF/8_31_2_16.pdf; and Ghaidaa Hetou, "Middle Powers' Crucial Peace Dividend: Networking Development," *Journal of Peacebuilding & Development* 13, no. 1 (April 1, 2018).

129. John R. Oneal, Bruce Russett, and Michael L. Berbaum, "Causes of Peace: Democracy, Interdependence, and

International Organizations, 1885–1992," *International Studies Quarterly* 47, no. 3 (September 2003): 371–93.

130. Solomon W. Polachek and Carlos Seiglie, "Trade, Peace and Democracy: An Analysis of Dyadic Dispute," Institute for the Study of Labor Discussion Paper no. 2170, June 2006.

131. Jong-Wha Lee and Ju Hyun Pyun, "Does Trade Integration Contribute to Peace?," *Review of Development Economics* 20, no. 1 (2016): 327–44.

132. Patrick J. McDonald, "Peace through Trade or Free Trade?," *Journal of Conflict Resolution* 48, no. 4 (2004).

133. Matthew O. Jackson and Stephen Nei, "Networks of Military Alliances, Wars, and International Trade," *Proceedings of the National Academy of Sciences* 112, no. 50 (December 15, 2015): 15277–84.

134. Benny Kleinman, Ernest Liu, and Stephen J. Redding, "International Friends and Enemies," National Bureau of Economic Research Working Paper no. 27587, July 2020.

135. Timothy M. Peterson and Cameron G. Thies, "Beyond Ricardo: The Link between Intra-Industry Trade and Peace," *British Journal of Political Science* 42, no. 4 (October 2012).

136. Pavel Yakovlev, "Does Trade Promote Peace?," Libertarianism.org, April 18, 2012.

137. Lincicome, "Testing the 'China Shock.'"

138. Galina Hale et al., "How Much Do We Spend on Imports?," FRBSF Economic Letter 2019-01, Federal Reserve Bank of San Francisco, January 7, 2019, https://www.frbsf.org/economic-research/publications/economic-letter/2019/january/how-much-do-we-spend-on-imports/.

139. "Trade (% of GDP)," Data, World Bank, https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?end=2019&most_recent_value_desc=false&start=2015.

140. "Imports of Goods and Services (% of GDP)," Data, World Bank, https://data.worldbank.org/indicator/NE.IMP.GNFS.ZS?most_recent_value_desc=false.

141. For example, a June 2020 analysis from Jean Imbs and Laurent Pauwels of 43 different countries' openness (and thus exposure to foreign trade "shocks") finds the United States to be one of the least "open" economies in the world and *the* least among five of the largest global economies (Japan, Germany, China, and India being the others)—a result that is similar to the country ranking obtained by other measures of trade openness. Jean Imbs and Laurent Pauwels, "A New Measure of Openness," *Vox*, Centre for Economic Policy Research, June 26, 2020.

142. Richard Baldwin and Rebecca Freeman, "Supply Chain Contagion Waves: Thinking Ahead on Manufacturing 'Contagion and Reinfection' from the COVID Concussion," *Vox*, Centre for Economic Policy Research, April 1, 2020.

143. Francesco Caselli et al., "Diversification through Trade," National Bureau of Economic Research Working Paper no. 21498, August 2015.

144. Aida Caldera-Sánchez et al., "Strengthening Economic Resilience: Insights from the Pos-1970 Record of Severe Recessions and Financial Crises," Organisation for Economic Co-operation and Development Economic Policy Paper no. 20, December 2016.

145. Aida Caldera-Sánchez et al., "Economic Resilience: Trade-Offs between Growth and Economic Fragility," *Vox*, Centre for Economic Policy Research, March 28, 2017.

146. Barthélémy Bonadio et al., "Global Supply Chains in the Pandemic," National Bureau of Economic Research Working Paper no. 27224, May 2020; and for example, see "Openness to Trade," World Integrated Trade Solution, http://wits.worldbank.org/visualization/openness-to-trade-dashboard.html.

147. Ryan Bourne, *Economics in One Virus: An Introduction to Economic Reasoning through COVID-19* (Washington: Cato Institute, 2021).

148. "Quarterly National Accounts: G20—Quarterly Growth Rates of GDP in Volume," Organisation for Economic Co-operation and Development Statistics, https://stats.oecd.org/index.aspx?queryid=33940#.

149. Tom Fairless, "Germany Expects V-Shaped Economic Rebound from Coronavirus," *Wall Street Journal*, September 1, 2020.

150. Johanna Jeansson, "International Value Chains Are Sweden's

Achilles Heel," *Bloomberg*, August 28, 2020.

151. Bourne, *Economics in One Virus*.

152. Jesús Fernández-Villaverde and Charles I. Jones, "Macroeconomic Outcomes and Covid-19: A Progress Report," National Bureau of Economic Research Working Paper no. 28004, October 2020.

153. Lino Briguglio and Melchior Vella, "Trade Openness and Volatility," Occasional Paper no. 04/2016, Islands and Small States Institute, University of Malta, April 2016.

154. Maya Jolles, Eric Meyermans, and Bořek Vašíček, "Determinants of Macroeconomic Resilience in the Euro Area: An Empirical Assessment of Policy Levers," World Bank.

155. Amni Rusli, "Supply Chain Resilience," *Eight Ate Eight* (blog), August 3, 2020.

156. Office of U.S. Sen. Mike Lee (R-UT), "Sen. Lee Reintroduces Global Trade Accountability Act," press release, May 2, 2019, https://www.lee.senate.gov/public/index.cfm/2019/5/sen-lee-reintroduces-global-trade-accountability-act.

157. For example, see Daniel Ikenson, "Economic Self-Flagellation: How U.S. Antidumping Policy Subverts the National Export Initiative," Cato Institute Trade Policy Analysis no. 46, May 31, 2011.

158. For example, see Scott Lincicome, "Countervailing Calamity: How to Stop the Global Subsidies Race," Cato Institute Policy Analysis no. 710, October 9, 2012; and Daniel J. Ikenson, "Tariffs by Fiat: The Widening Chasm between U.S. Antidumping Policy and the Rule of Law," Cato Institute Policy Analysis no. 896, July 16, 2020.

159. 50 U.S.C. § 98h–4.

160. National Defense Authorization Act for Fiscal Year 2021, S. 4049, 116th Cong. § 803.

161. National Defense Authorization Act for Fiscal Year 2021, S. 4049, 116th Cong.

162. Grabow, Manak, and Ikenson, "The Jones Act."

163. For example, see Jacques S. Gansler and William Lucyshyn, "Rethinking Import and Export Controls for Defense-Related Goods," University of Maryland Center for Public Policy and Private Enterprise, revised May 2013.

164. For example, see Alex Tabarrok, "Sicken Thy Neighbor Trade Policy," *Marginal Revolution* (blog), March 29, 2020.

165. For example, see General Agreement on Tariffs and Trade (GATT), art. XXI, July 1986; and GATT, art. XX(j); similar provisions are found in all U.S. free trade agreements.

166. For example, see Mona Pinchis-Paulsen, "Trade Multilateralism and U.S. National Security: The Making of the GATT Security Exceptions," *Michigan Journal of International Law* 41, no. 1 (2020): 109–93.

167. Scott Lincicome, "Ignoring the Recent (and Ignominious) History of 'Buy American,'" *Cato at Liberty* (blog), Cato Institute, July 10, 2020.

168. Harry S. Truman, "Statement by the President upon Signing the Strategic and Critical Materials Stockpiling Act," American Presidency Project, July 23, 1946.

169. Scott Lincicome, "We'll Do Anything for American Innovation, but We Won't Do That," *Cato at Liberty* (blog), Cato Institute, July 20, 2020.

170. Scott Lincicome (@scottlincicome), "Please note that one of the ITC's big impediments to Chinese semiconductor dominance is China's lack of human capital - something the Trump admin's recent immigration plans are actively trying to change. Sigh.," Twitter, July 8, 2020, 3:21 p.m., https://twitter.com/scottlincicome/status/1280945234189451264.

171. Josh Mitchell, "How Apprenticeship, Reimagined, Vaults Graduates into Middle Class," *Wall Street Journal*, October 19, 2020.

172. For example, see Gail Heriot, "Apprenticeships: Useful Alternative, Tough to Implement," Cato Institute Policy Analysis no. 805, November 17, 2016.

173. Numerous OECD and other countries—such as Canada, Sweden, and the United Kingdom—also imposed lower effective corporate tax rates than the United States in 2019. Chris Edwards, "U.S. Corporate Tax Still Too High," *Cato at Liberty* (blog), Cato Institute, January 11, 2019; and Scott R. Baker, Stephen Teng Sun,

and Constantine Yannelis, "Corporate Taxes and Retail Prices," Cato Institute Research Briefs in Economic Policy no. 224, July 22, 2020.

174. "Local property taxes are also wealth taxes. They are paid by owners of residential, commercial, and industrial real property. U.S. property taxes are relatively high. As a share of gross domestic product (GDP), we have the fourth-highest property tax revenues among 36 major industrial countries." Chris Edwards, "Taxing Wealth and Capital Income," Cato Institute Tax and Budget Bulletin no. 85, August 1, 2019.

175. Ryan Bourne, "Why It's OK That the Republican Tax Cuts Will First Finance Share Buybacks," Cato Institute, December 6, 2017; and Erica York, "The TCJA's Expensing Provision Alleviates the Tax Code's Bias against Certain Investments," Tax Foundation, September 5, 2018.

176. Ryan Young, "Deregulate to Stimulate: #NeverNeeded Regulations Are Harming Health and Economy," *Open Market Blog*, Competitive Enterprise Institute, July 21, 2020.

177. For example, the Department of Defense's *Fiscal Year 2019 Industrial Capabilities Report* notes that the National Defense Stockpile (NDS) Transaction Fund was projected to run a deficit due in large part to "legislatively directed disbursements" that are not related to the NDS. In particular, from FY 2003 to FY 2018, 89.8 percent of the proceeds from NDS program activities, measured in real dollars, were diverted to other defense and non-defense programs, such as the Defense Health Program, construction of the World War II Memorial, and the Federal Supplementary Medical Trust Fund. Such actions undermine the NDS's important national security objectives. Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report*, p. 97.

178. Office of Industrial Policy, Fiscal Year 2019 Industrial Capabilities Report.

179. Certain aspects of the Department of Defense report do raise concerns about its economic rigor and bias: "Machine tool production also correlates with trade deficits." Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report*, p. 112.

180. "SNS 2.0: The Next Generation: Building a More Resilient Strategic National Stockpile," Public Health Emergency, Office of the Assistant Secretary for Preparedness and Response, Department of Health and Human Services, https://www.phe.gov/about/sns/Pages/sns-next-generation.aspx.

181. "Fact Sheet on U.S.-Japan Trade Agreement," Office of the United States Trade Representative, September 2019, https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2019/september/fact-sheet-us-japan-trade-agreement; and "Annex II: Tariffs and Tariff-Related Provisions of the United States," Office of the United States Trade Representative, January 1, 2019, https://ustr.gov/sites/default/files/files/agreements/japan/Annex_II_Tariffs_and_Tariff-Related_Provisions_of_the_United_States.pdf.

182. Truman, "Statement by the President upon Signing the Strategic and Critical Materials Stockpiling Act."

183. Congressional Research Service, "Defense Primer: The National Technology and Industrial Base," January 31, 2020.

184. For a detailed look at the history of U.S.-Canadian defense industrial cooperation, see Andrew P. Hunter et al., *U.S.-Canadian Defense Industrial Cooperation* (Washington: Center for Strategic and International Studies, June 2017).

185. Congressional Research Service, "Defense Primer."

186. Section 812 of the Senate's Fiscal Year 2021 National Defense Authorization Act would eliminate these procurement restrictions, leaving only those for naval vessels. National Defense Authorization Act for Fiscal Year 2021, S. 4049, 116th Cong. § 812.

187. Congressional Research Service, "Defense Primer."

188. Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report*, pp. 16–17.

189. Individuals or business entities must obtain a license from the Department of State to export materials covered by International Traffic in Arms Regulations (ITAR). The regulation provides licensing requirement exemptions for some U.S. exports to Canada and some temporary imports from Canada to the United States, but many ITAR-controlled items do not qualify for the Canadian exemptions and other NTIB members are not eligible for the Canadian exemptions.

190. Congressional Research Service, "Defense Primer"; and William Greenwalt, *Leveraging the National Technology Industrial Base to Address Great-Power Competition: The Imperative to Integrate Industrial Capabilities of Close Allies* (Washington: Atlantic Council, April 2019).

191. Qualifying countries include Australia; Austria; Belgium; Canada; Czech Republic; Denmark; Egypt; Estonia; Finland; France; Germany; Greece; Israel; Italy; Japan; Latvia; Luxembourg; Netherlands; Norway; Poland; Portugal; Slovenia; Spain; Sweden; Switzerland; Turkey; and the United Kingdom. "Reciprocal Defense Procurement and Acquisition Policy Memoranda of Understanding," International Contracting, Contract Policy, Defense Pricing and Contracting, https://www.acq.osd.mil/dpap/cpic/ic/reciprocal_procurement_memoranda_of_understanding.html.

192. DFARS 225.872-1 (a) (June 29, 2018).

193. Partner countries include Australia, Canada, Finland, Italy, The Netherlands, Spain, Sweden, and the United Kingdom. "Security of Supply," Industrial Policy, Department of Defense, http://www.businessdefense.gov/security-of-supply/.

194. 10 U.S.C. §§ 2501, 2504, 2505.

195. 50 U.S.C. § 98h; "Materials of Interest," Strategic Materials, Defense Logistics Agency, https://www.dla.mil/HQ/Acquisition/StrategicMaterials/Materials/; and 50 U.S.C. § 98h-6.

196. Truman, "Statement by the President upon Signing the Strategic and Critical Materials Stockpiling Act."

197. Notably, the Department of Defense's core macro findings on the "Decline of U.S. Manufacturing Capabilities and Capacity" ended in 2010 and are therefore essentially irrelevant given the dramatic rebound in American Manufacturing output and value-added since that time. Interagency Task Force, *Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States* (Washington: Department of Defense, September 2018), p. 25nn26–32, https://www.hsdl.org/?view&did=817145.

198. Office of Industrial Policy, *Industrial Capabilities: Fiscal Year 2018*, p. 17; and Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report*, pp. 34–35, 37.

199. Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report*, pp. 68, 75.

200. Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report*, p. 87.

201. "Of the 202 printed circuit board (PrCB) manufacturing facilities surveyed in the U.S. Bare Printed Circuit Board Industry Assessment 2017, 132 facilities anticipated challenges finding experienced employees. . . . Manufacturing facilities cite that roughly 522,000 jobs remained open in the sector in September 2019. There are also limited formal education opportunities for electronic interconnect manufacturing in the United States." Office of Industrial Policy, *Fiscal Year 2019 Industrial Capabilities Report*, pp. 106, 112.

202. Congressional Research Service, "Section 232 Investigations"; and 19 U.S.C. § 1862.

203. Congressional Research Service, "Section 232 Investigations."

204. "Import Injury Investigations," United States International Trade Commission, https://usitc.gov/investigations/import_injury.

205. 41 U.S.C. §§ 8301–8305.

206. "Buy America Provisions—Side-by-Side Comparison," Department of Transportation, last updated March 13, 2012, https://www.transportation.gov/buy-america-provisions-side-side-comparison.

207. "Buy America(n) Acts: Sector Specific Information," Trade Commissioner Service, Government of Canada, https://www.tradecommissioner.gc.ca/sell2usgov-vendreaugouvusa/procurement-marches/sector_chart-tableau_sectoriels.aspx?lang=eng.

208. For example, the "specialty metals restriction" codified in 10 U.S.C. § 2533b, prohibits the Department of Defense (DOD) from purchasing any "specialty metal" not melted or produced in the United States, except in specified instances. Other U.S. laws prohibit the DOD from: purchasing ball and roller bearings not manufactured in the United States or Canada; purchasing carbon, alloy, or armor steel plate melted and rolled outside the United States or Canada; and acquiring, or allowing a contractor to acquire, steel for any construction project or activity for which U.S. steel companies have been denied the opportunity to compete for the acquisition.

209. "Canadian Access to the United States Defence Market," Canadian Aerospace and Defence Industry, Government of Canada, https://www.ic.gc.ca/eic/site/ad-ad.nsf/eng/ad00271.html.

RELATED PUBLICATIONS FROM THE CATO INSTITUTE

Testing the "China Shock": Was Normalizing Trade with China a Mistake? by Scott Lincicome, Policy Analysis no. 895 (July 8, 2020)

Debunking Protectionist Myths: Free Trade, the Developing World, and Prosperity by Arvind Panagariya, Economic Development Bulletin no. 31 (July 18, 2019)

Doomed to Repeat It: The Long History of America's Protectionist Failures by Scott Lincicome, Policy Analysis no. 819 (August 22, 2017)

Cybersecurity or Protectionism? Defusing the Most Volatile Issue in the U.S.–China Relationship by Daniel J. Ikenson, Policy Analysis no. 815 (July 13, 2017)

Beyond the American Manufacturing Competitiveness Act: Congress Should Get More Serious about Tariff Reform by Daniel J. Ikenson, Free Trade Bulletin no. 67 (April 26, 2016)

Global Steel Overcapacity: Trade Remedy "Cure" Is Worse than the "Disease" by Daniel R. Pearson, Free Trade Bulletin no. 66 (April 11, 2016)

The Export-Import Bank and Its Victims: Which Industries and States Bear the Brunt? by Daniel J. Ikenson, Policy Analysis no. 756 (September 10, 2014)

Countervailing Calamity: How to Stop the Global Subsidies Race by Scott Lincicome, Policy Analysis no. 710 (October 9, 2012)

As Promised, Free Trade Agreements Deliver More Trade: Manufacturing Exports Receive an Extra Boost by Daniel Griswold, Free Trade Bulletin no. 45 (June 7, 2011)

Manufacturing Discord: Growing Tensions Threaten the U.S.-China Economic Relationship by Daniel J. Ikenson, Trade Briefing Paper no. 29 (May 4, 2010)

Thriving in a Global Economy: The Truth about U.S. Manufacturing and Trade by Daniel J. Ikenson, Trade Policy Analysis no. 35 (August 28, 2007)

Reforming a Defense Industry Rife with Socialism, Industrial Policy, and Excessive Regulation by Ivan Eland, Policy Analysis no. 421 (December 20, 2001)

The Perils of Managed Trade by Susan W. Liebeler and Michael S. Knoll, Policy Analysis no. 138 (August 29, 1990)

RECENT STUDIES IN THE CATO INSTITUTE POLICY ANALYSIS SERIES

906. **Circumventing Section 230: Product Liability Lawsuits Threaten Internet Speech** by Will Duffield (January 26, 2021)

905. **COVID-19 and the U.S. Fiscal Imbalance** by Jeffrey Miron (December 8, 2020)

904. **Space Force: Ahead of Its Time, or Dreadfully Premature?** by Robert Farley (December 1, 2020)

903. **Despite Modi, India Has Not Yet Become a Hindu Authoritarian State** by Swaminathan S. Anklesaria Aiyar (November 24, 2020)

902. **Government in a Pandemic** by Thomas A. Firey (November 17, 2020)

901. **Qualified Immunity: A Legal, Practical, and Moral Failure** by Jay Schweikert (September 14, 2020)

900. **Democrats and Trade 2021: A Pro-Trade Policy for the Democratic Party** by James Bacchus (August 11, 2020)

899. **Health Care Workforce Reform: COVID-19 Spotlights Need for Changes to Clinician Licensing** by Shirley Svorny and Michael F. Cannon (August 4, 2020)

898. **How Property and Civil Rights Help Forest Tribes Modernize and Prosper: Lessons from India** by Swaminathan S. Anklesaria Aiyar and Neeraj Kaushal (July 30, 2020)

897. **Neo-Malthusianism and Coercive Population Control in China and India: Overpopulation Concerns Often Result in Coercion** by Chelsea Follett (July 21, 2020)

896. **Tariffs by Fiat: The Widening Chasm between U.S. Antidumping Policy and the Rule of Law** by Daniel J. Ikenson (July 16, 2020)

895. **Testing the "China Shock": Was Normalizing Trade with China a Mistake?** by Scott Lincicome (July 8, 2020)

894. **Kicking the Habit: The Opioid Crisis and America's Addiction to Prohibition** by Josh Bowers and Daniel Abrahamson (June 29, 2020)

893. **Nuclear Anti-Proliferation Policy and the Korea Conundrum: Some Policy Proposals** by John Mueller (June 22, 2020)

892. **"Money as a Weapons System": The Promises and Pitfalls of Foreign Defense Contracting** by Renanah Miles Joyce and Brian Blankenship (June 3, 2020)

891. **Rightsizing Fed Ed: Principles for Reform and Practical Steps to Move in the Right Direction** by Mary Clare Amselem, Lindsey Burke, Jonathan Butcher, Jamie Gass, Neal McCluskey, and Theodor Rebarber (May 4, 2020)

890. **Illegal Immigrant Incarceration Rates, 2010–2018: Demographics and Policy Implications** by Michelangelo Landgrave and Alex Nowrasteh (April 21, 2020)

889. **Transit: The Urban Parasite** by Randal O'Toole (April 20, 2020)

888. **The Case for Congressional Regulatory Review** by William Yeatman (April 14, 2020)

887. **The Development Dimension: What to Do about Differential Treatment in Trade** by James Bacchus and Inu Manak (April 13, 2020)

886. **Environmental Costs of the Jones Act** by Timothy Fitzgerald (March 2, 2020)

885. **Maryland's BOOST Is Promising, but More Work Is Needed** by Russell Rhine (February 26, 2020)

884. **Ineffective, Immoral, Politically Convenient: America's Overreliance on Economic Sanctions and What to Do about It** by Richard Hanania (February 18, 2020)

883. **The More Things Change, the More They Stay the Same: The Failure of Regime-Change Operations** by Benjamin Denison (January 6, 2020)

882. **Rust Buckets: How the Jones Act Undermines U.S. Shipbuilding and National Security** by Colin Grabow (November 12, 2019)

881. **Exploring Wealth Inequality** by Chris Edwards and Ryan Bourne (November 5, 2019)

880. **The Problems with Economic Integration and Controlled Choice** by David J. Armor (September 24, 2019)

CITATION

Lincicome, Scott. "Manufactured Crisis: 'Deindustrialization,' Free Markets, and National Security," Policy Analysis no. 907, Cato Institute, Washington, DC, January 27, 2021. https://doi.org/10.36009/PA.907.



The views expressed in this paper are those of the author(s) and should not be attributed to the Cato Institute, its trustees, its Sponsors, or any other person or organization. Nothing in this paper should be construed as an attempt to aid or hinder the passage of any bill before Congress. Copyright © 2021 Cato Institute. This work by the Cato Institute is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.



Written Testimony for Carlos Ruiz Before the U.S. Small Business Subcommittee on Economic Growth, Tax, and Capital Access

April 29, 2021

Chairwoman Sharice Davids, Ranking Member Dan Meuser, and distinguished members of the Subcommittee, my name is Carlos Ruiz. I'm the owner of HT Metals—a premier provider of ready to manufacture raw materials in Tucson, Arizona.

The past year has been a challenging period for my small business, along with the millions of others across the country. The least our elected leaders in Washington can do is not build additional roadblocks on the path to recovery. With what I've seen so far, I'm not optimistic.

My small business is particularly being negatively affected by the labor shortage spurred by the renewal of expanded unemployment benefits from the federal government. Providing out-of-work Americans with a little extra cash during the initial stages of the pandemic was warranted. But now that the economy is well on the way to reopening, Uncle Sam should be incentivizing people to get back to work, rather than remaining on the couch.

It's been so challenging to find qualified workers to fill open positions at HT Metals that I've been exploring using a temporary work agency. But this can't go on forever. Not only is the labor significantly more expensive, but the job candidates rarely have the right skills and experience to effectively get the job done.

Pile-on the threat posed by higher taxes and more regulations that will spike the cost of everyday operations and small businesses face a scary future. Components included in the two "infrastructure" packages that the Biden administration has unveiled are of particular concern.

Small businesses are the backbone of the U.S. economy. Without giving us a long enough runway—unimpeded by government-erected barriers—to recover from the pandemic, the country will stagnate.

Thank you for reviewing my testimony.

Sincerely,

Carlos Ruiz
Owner
HT Metals
Tucson, AZ



Written Testimony for Guy Berkebile Before the U.S. Small Business Subcommittee on Economic Growth, Tax, and Capital Access

April 29, 2021

Chairwoman Sharice Davids, Ranking Member Dan Meuser, and distinguished members of the Subcommittee, my name is Guy Berkebile. I'm the owner of Guy Chemical—a chemical manufacturer in Somerset County, Pennsylvania specializing in silicone products and packaging for the consumer and industrial markets.

I have poured years of blood, sweat, and tears into my small business. Founded in 1995, I took out a loan of $70,000, used $80,000 of my personal savings, and mortgaged my home to start Guy Chemical—literally putting my family's livelihood and financial security at risk. It was a rocky start.

I had no employees for eight months and operated the business at a financial loss for more than two years. I didn't take a salary for five years—working a full-time job on the side to provide for my family—and mortgaged my home a total of seven times to keep Guy Chemical afloat.

The adversity was worth it. Guy Chemical now provides employment for more than 160 people in rural Pennsylvania—employing a wide variety of workers ranging from unskilled laborers to production managers and from chemists to engineers. Businesses like Guy Chemical are the glue that holds the community together. That's why the coronavirus pandemic sent a chill up my spine.

Millions of small businesses across the country were forced to shutdown operations via government edict, or fear of the virus suppressed consumer demand so much that many companies were pushed to the brink of bankruptcy. Fortunately, Guy Chemical was able to weather the storm—partially thanks to policies like the Paycheck Protection Program.

But just as small businesses are emerging from one of the worst economic years on record, several new threats have materialized.

Proposed tax hikes from the Biden administration would reverse the gains small businesses experienced as a result of the Tax Cuts and Jobs Act—making pandemic recovery even more challenging. With the financial savings from the tax relief following its passage in 2017, Guy Chemical was able to build a new laboratory that was five-times larger than our previous one, invest in new chemical compounding equipment, and purchase new packaging lines. We were also able to pass along much of the financial savings to employees in the form of higher wages, expanded bonuses, and the creation of a 401k retirement program.



The extension of expanded unemployment benefits and other policies that incentivize staying home, rather than showing up to work will continue to be another challenge for small businesses. Small businesses can't effectively provide consumers with goods and services while operating on a skeleton staff. Additionally, the potential for new regulations that not only suck-up employee time and resources to comply, but make U.S. companies less competitive with our counterparts abroad is a concern.

It's been a trying year for small businesses as the coronavirus pistol whipped large parts of the U.S. economy. As small businesses recover, policymakers should avoid piling-on with increased taxes, regulations, and other policies that will slowdown recovery.

Thank you for reviewing my testimony.

Sincerely,

Guy Berkebile
Owner and Founder
Guy Chemical
Somerset, PA

Manufactured Housing Institute

April 28, 2021

Chairwoman Sharice Davids
Committee on Small Business
Subcommittee on Economic Growth, Tax, and Capital Access
1541 Longworth House Office Building
Washington, DC 20515

Ranking Member Dan Meuser
Committee on Small Business
Subcommittee on Economic Growth, Tax, and Capital Access
414 Cannon House Office Building
Washington, DC 20515

Dear Chairwoman Davids and Ranking Member Meuser:

The Manufactured Housing Institute (MHI) thanks you for holding this hearing on "Supply Chain Resiliency and the Role of Small Manufacturers." MHI members produce close to 85 percent of the manufactured homes produced every year. COVID-19 and major weather events have caused significant disruption across all parts of the supply chain for manufactured homes. Shipment numbers for manufactured homes were down in February approximately 5.7 percent from January and 2.6 percent from February 2020. Today, a customer could wait up to a year for the delivery of their new manufactured home, due to supply shortages which is detrimental to millions of Americans who are desperately seeking a safe, affordable place to call home.

MHI is the only national trade association that represents every segment of the factory-built housing industry. Our members include home builders, suppliers, retail sellers, lenders, installers, community owners, community operators, and others who serve the industry, as well as 48 affiliated state organizations. In 2020, our industry produced nearly 95,000 homes, accounting for approximately nine percent of new single-family home starts. These homes are produced by 33 U.S. corporations in 136 plants located across the country.

Manufactured homes are the most affordable homeownership option in our country, and the demand for our housing has never been higher. However, one of the biggest challenges facing our industry is a shortage of lumber. Since last spring, lumber prices have skyrocketed more than 180% driving home prices to exorbitant levels. A recent survey by the National Multifamily Housing Council found that "Eighty-three percent of respondents reported a lack of materials impacting their construction operations, the highest share recorded since we began conducting the survey in late March last year. When those respondents affected by a lack of materials were asked to cite specific areas of issue, the top three responses were appliances, lumber, and doors and windows."[1]

While prices are high, manufacturers are usually still able to obtain lumber. However, because of the pricing volatility it is difficult for retailers to sell homes to consumers with accurate costs. Retailers are contracting with homebuyers to purchase a manufactured home at the current price of lumber, that will likely not be built for at least another nine months to a year. This is challenging for retailers to hold homes to a contract price when the cost of lumber is so unpredictable and might be much higher when the home

[1] NMHC Construction Survey (Round 6), March 11, 2021; https://www.nmhc.org/news/nmhc-news/2021/Surveys-sixth-installment-shows-continued-impact-on-availability-and-price-of-construction-materials-due-to-ongoing-covid-19-pandemic/

1655 Fort Myer Drive, Suite 200, Arlington, VA 22209
(703) 558-0400 | info@mfghome.org
www.manufacturedhousing.org

actually gets built, posing significant risks for the retailer and the home manufacturer.

Other products in the construction of manufactured homes are often simply unavailable – and the products seem to change by the day. Shingles, siding, adhesives, appliances, metal fascia and insulation seem to be common problems. While traditional site-builders may be able to simply substitute different products, manufactured homes are built to a strict federal building code that limits some of that flexibility. The Federal Manufactured Home Construction and Safety Standards Act (also known as the HUD Code) established federal standards for manufactured housing design and construction, strength and durability, transportability, fire resistance, energy efficiency and quality. The HUD Code also sets performance standards for the heating, plumbing, air conditioning, thermal and electrical systems. So, when some products are unavailable, our manufacturers must request an alternative construction letter from HUD to substitute another product, causing even more delays. In March, HUD acknowledged these problems by delaying long awaited updates to the HUD Code, saying, "as the result of the COVID-19 pandemic, many manufacturers are experiencing backlogs and supply chain challenges that make it difficult for manufacturers to obtain products that the new regulations require in a timely manner.[2]" While our industry welcomed this delay, supply challenges still persist and do not appear to be alleviated anytime in the near future resulting in more alternative constructions letters for products not included in the existing HUD Code.

The demand for affordable housing is high, and supply chain problems are limiting our ability to meet the need. While COVID-19 shutdowns are surely to blame for a significant portion of the problems, the recent storms in Texas, where many suppliers of building products are based, has also led to significant disruptions and delays. Further, the well-documented backlog of container ships in many ports around the country is also limiting supply of building products. As our country recovers and gets back to work, we are hopeful that the significant labor shortages that all parts of the supply chain are experiencing will also be reduced.

Manufactured housing the only type of housing that Congress recognizes as having a vital role in meeting America's housing needs as a significant source for affordable homeownership accessible to all Americans. The affordability of manufactured homes enables individuals to obtain housing that is often much less expensive than renting or financing the purchase of a site-built home. However, supply chain issues have significantly hurt our ability to meet consumer demand. MHI looks forward to working with the Subcommittee to address these issues and determine ways to avoid such problems in the future.

Sincerely,

Lesli Gooch

Lesli Gooch, Ph.D.
Chief Executive Officer

---

[2] https://www.govinfo.gov/content/pkg/FR-2021-03-10/pdf/2021-05010.pdf

wasterecycling.org

National Waste & Recycling Association℠
Collect. Recycle. Innovate.

1550 Crystal Drive
Suite 804
Arlington, VA 22202
T 202.244.4700
F 202.966.4818

April 29, 2021

Hon. Sharice Davids
Chairwoman
Subcommittee on Economic Growth, Tax, and Capital Access
United States House of Representatives
Washington, D.C. 20515

Hon. Dan Meuser
Ranking Member
Subcommittee on Economic Growth, Tax, and Capital Access
United States House of Representatives
Washington, D.C. 20515

Dear Chairwoman Davids, Ranking Member Meuser and Members of the Economic Growth, Tax, and Capital Access subcommittee,

Thank you for holding a hearing on "**Supply Chain Resiliency and the Role of Small Manufacturers**." During the pandemic, we can all point to instances where there were shortages of products ranging from personal protective equipment (PPE) to disinfectant wipes, hand sanitizer and toilet paper due to disruptions in the supply chain. One of the biggest issues manufacturers faced, in particular small manufacturers, was the lack of access to available manufacturing feedstock.

The National Waste & Recycling Association (NWRA) is the voice in the nation's capital for the private sector waste and recycling industry that is essential to maintaining the quality of American life and providing manufacturers with the feedstock materials they require. The delivery of waste and recycling services impacts all residential, commercial and industrial properties on a daily basis.

NWRA members operate in all 50 states and the District of Columbia and can be found in most, if not all, U.S. congressional districts. Waste and recycling facilities number nearly 18,000 scattered throughout the U.S., mirroring population centers.

Recycling occurs constantly all around us. In the United States, the collection and processing of recyclable waste into materials that can be used in the manufacture of new products is now a common practice and spreading around the world. Recycling turns the old into the new—today's newspaper might return next month with new headlines while your aluminum soda can, which is made from the most recyclable of all materials, could have a second life as a new beverage container.

Materials recovery facilities (MRFs) have a wide array of highly specialized equipment designed to sort and separate different kinds of recyclables, turning them into raw materials for manufacturers. Most MRFs process several different grades of paper, cardboard, glass bottles, aluminum, steel cans and plastic containers.

China historically imported massive quantities of waste materials from the United States to be recycled and used in its manufacture of new products. This was a mutually beneficial relationship given that the U.S. market for consumer recyclables was not as strong at the time.

However, as of March 1, 2018, China closed its doors to the import of many recyclables through new bans and changed standards. Given the amount of recyclable materials that were being shipped to China, more than three years later there still is not enough capacity in the rest of the world's recycling infrastructure to absorb the materials that do not meet these specifications.

The COVID-19 pandemic saw an increase in the demand for domestic manufactured goods and supplies as well as a corresponding demand for raw materials by U.S. manufacturers. Had there been greater domestic recycling infrastructure capacity in place, recyclables could have better helped to meet the demand.

Currently, there is a pressing supply chain issue impacting truck manufacturers, large and small, not only in the U.S. but worldwide.

Steel prices have skyrocketed 148 percent since August 2020 due to limited supply and many manufacturers are now on allocation. Steel production was reduced early on in the pandemic and has yet to be brought back fully online, creating the current supply bubble. This is resulting in the increased costs being passed on to customers, and in some cases, manufacturers are forced to substitute desired material sizes and specifications for what is available.

Just as concerning is the issue of the semiconductor shortage and how it is impacting the availability of truck chassis in which they are used. This in turn is affecting vehicle replacement schedules that will be impacted due to delays, subsequently driving up operating costs and creating a new equipment supply issue.

It is crucial for the Biden administration and Congress to step in and prioritize steel and semiconductor production. These are two areas that can benefit from increased domestic recycling capacity, the feedstock that it will produce and the role that small manufacturers play in this.

Congress and federal regulatory agencies have an opportunity to implement policies that encourage our nation's domestic recycling infrastructure as well as the use of recyclable materials where it makes economic sense to do so while avoiding the issuance of mandates. Tax credits, block grants and regulatory relief encouraging the development of a more robust domestic recycling infrastructure and the market for consumer recyclables as well as research and education can help meet the feedstock demands of America's small manufacturers.

NWRA urges Congress to look toward recyclables as part of the solution to the feedstock shortage that has been impacting small manufacturers and disrupting our nation's supply chain resiliency. Should you have any questions, please contact Jim Riley at 202-364-3744 or jriley@wasterecycling.org.

Sincerely,

Darrell K. Smith, PhD
President and CEO