

SUSTAINING CAPITALISM

A series focused on nonpartisan, reasoned solutions in the nation's interest to the central challenges we face in order to provide prosperity for all Americans.



Global Supply Chains

Compete, Don't Retreat

Overview

For decades, global supply chains have become increasingly integral to the US economy and have been embraced by business and successive US Administrations because they increase efficiency and US competitiveness. But over the past several years, criticism has grown beyond the argument that US jobs are being exported to include concern about a more hostile and competitive global landscape.¹

Then the COVID-19 pandemic struck, and lockdowns were imposed. Production in general was disrupted, shutting down suppliers and interrupting transportation channels; foreign governments closed their borders or hoarded crucial supplies for their own peoples.² Prominently, lifesaving supplies—including personal protective equipment (PPE) and pharmaceutical production commodities, often sourced from abroad—were in short supply, putting frontline health care workers at even greater risk and complicating vaccine distribution.³ And then, as the pandemic began to ease and demand for goods increased, the enormous container ship *Ever Given* was grounded in the Suez Canal for six days, bringing much of goods transport around the world to a grinding halt and raising fears of even greater supply chain bottlenecks and commercial chaos.⁴

This truly unprecedented turn of events has exposed challenges to US reliance on global supply chains. Critics of the “offshoring” of jobs have assigned much of the economic and even the human pain of the pandemic to unwise and excessive dependence on global supply chains that include countries with “command” economies rather than free-market ones, or hostile nations that are unreliable sources of essential goods. The pandemic has also raised national security concerns about the reliability and resiliency of global supply chains, and

Insights for what's ahead

Global supply chains, an integral part of global trade, are neither always good nor always bad. They are, rather, tools that can provide substantial benefits but require appropriate precautions. Eschewing all use of global supply chains, in a vain search for total security and more US jobs, would provide neither. Instead, business decisionmakers and public policymakers need to analyze each unique global supply chain risk they face just as they do all other business and national risks, and figuratively buy the kind and amount of insurance that is appropriate and prudent in each case—with threats to national security or the public health being the most extreme examples warranting insurance. Based on such assessments, the nation must choose the policy tools responsive to each risk posed by global supply chains to maintain much of the cost savings provided by successful global supply chains, at the minimum economic and security risk:

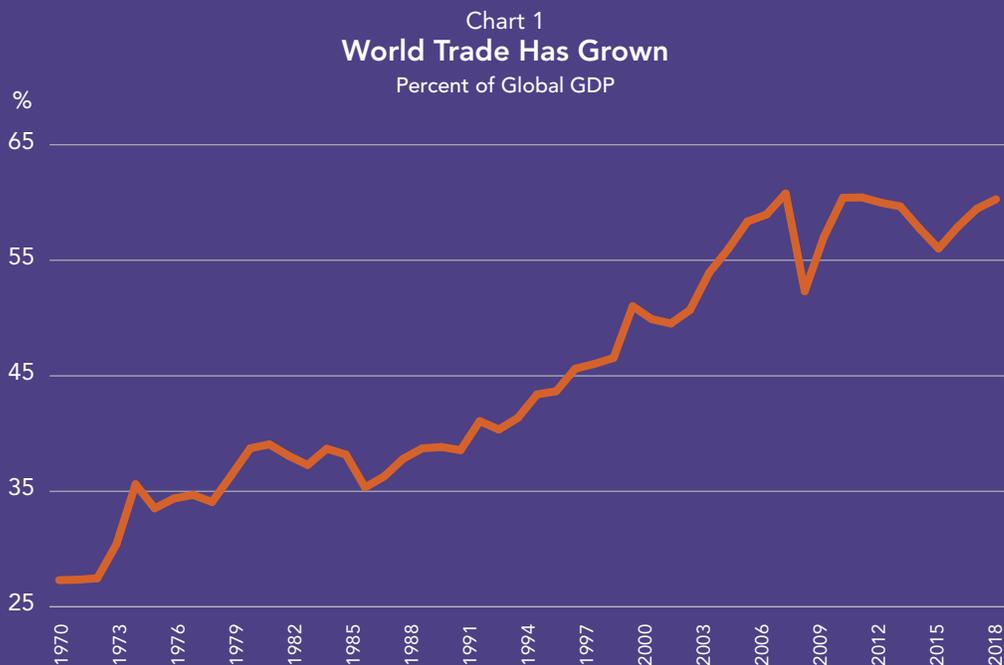
- 1 Cultivate additional sources of materials or intermediate inputs.** Relying on a single source (or multiple sources from a single geographic region) of any essential input, whether simple or sophisticated, expensive or cheap, entails risk. Businesses must assess the security of their supply chains and seek alternative domestic sources, but the United States needs allies that share our values to hedge against adversary suppliers in nonmarket economies. The United States should also work with allies to enforce free and fair trade and environmental rules, should nonmarket economies (such as China) engage in “industrial policies” and subsidize production or degrade the environment to cut costs and gain a competitive advantage.
- 2 Build stockpiles.** To prepare for a larger-scale supply interruption, or for an interruption that affects national security or public health, public stockpiles may be necessary, and private inventories at some level of the production chain must be adequate, whatever the commitment to “just-in-time delivery” at the final stage of manufacturing. Even standardized semiconductors have become virtual commodities and could be stockpiled. Importantly, the nation can safely import stockpiled goods; there is no need for items purchased in times of safety to be made here, especially if foreign goods are of high quality and low cost.
- 3 Invest in research and development (R&D).** Government typically does basic research, which is speculative and risky and aims for no particular product application, even though its findings might ultimately lead to all manner of unanticipated commercial products. Private research (which would often be called “development”), in contrast, is more focused at specific products. This division of labor has served us well. Experience and economic theory both show that when government attempts to “pick winners”—through what has come to be known as “industrial policy”—it can make costly mistakes by advancing inferior technologies and thereby holding back superior alternatives. Despite these proven outcomes, government funding of basic R&D has lagged.
- 4 Invest in production.** Manufacturing capacity for goods that truly support national security or public health and that cannot be stockpiled in sufficient quantity may need to be maintained even if unprofitable. Such a decision must cross a very high bar, which must not be lowered by rent-seeking by powerful private interests.
- 5 Maintain standby production facilities.** If the probability of a catastrophic national security or public health event is high enough, it might be necessary for public funds to build and maintain production capacity on a standby basis, or to subsidize private backup capacity (which could be divided among multiple producers). The potential costs of any rupture in a global supply chain would need to be considerable to justify such an extreme remedy.

businesses have been forced into workarounds of their own practices. Given the size of China’s economy, its extensive role in global supply chains, its growing military strength, and the growing tensions in its bilateral US relationship, China is at the nexus of these major concerns about supply chain resilience. The new administration has responded to this turmoil with a series of policy directives,⁵ studies on the subject,⁶ and legislative proposals under active consideration in Congress covering both short-term and medium-term responses, including a twenty-first century industrial strategy—which would be a major change of US policy direction.

Global trade in materials, tools, components, and services deserves an immediate assessment of both security and economic needs for the long term.⁷ Security with prosperity must be the goal, and the nation must fully comprehend the bigger picture to achieve that outcome. This brief will put the role of global supply chains in the US and the world economy in perspective. It will offer recommendations to manage the economic and security challenges of global supply chains in the postpandemic economy to ensure that the US remains an innovative and competitive global leader.

Global Supply Chains in Perspective

Global supply chains are a part of global trade, which has been growing throughout the post-World War II years (see Chart 1⁸) and has contributed substantially to global economic growth. With the invention of the shipping container in 1956⁹ and subsequent further improvements in transportation technology, poorer nations could export to earn foreign exchange and invest to grow and develop, and richer nations could specialize, innovate, and expand product offerings to meet consumer needs.



Source: Accounts data from the World Bank and OECD

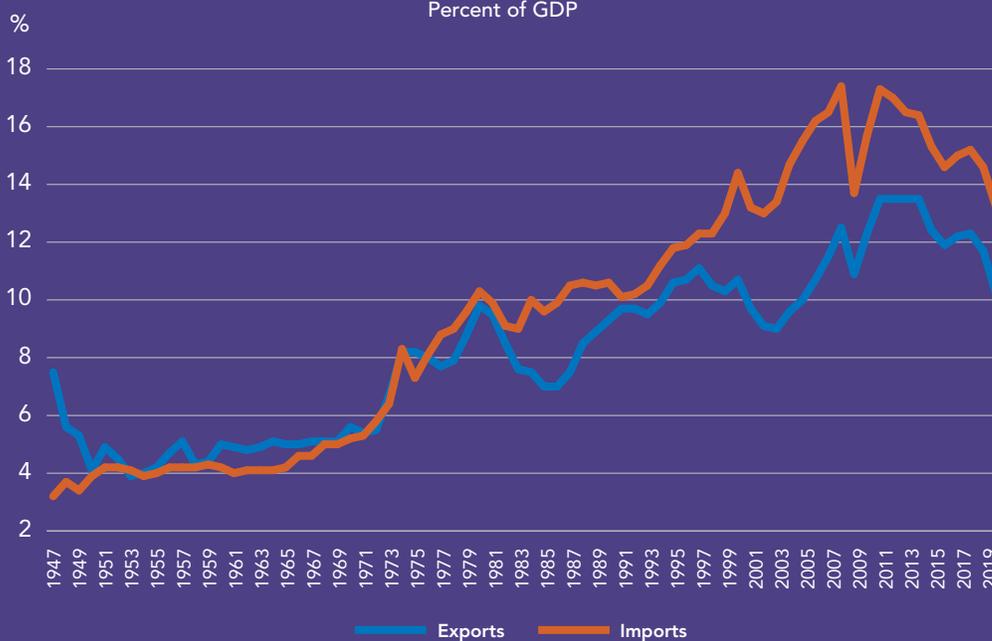
The United States was forced to globalize and compete by the oil price increases of the early 1970s. The collapse of the Soviet Union and the opening of China and its accession to the World Trade Organization expanded the developed world and global trade still further (see Chart 2¹⁰). But US trade has grown still more because of innovation and specialization, which has both met consumer needs and increased US competitiveness as well as moved some production to lower-cost countries where the savings exceeded the cost of transportation. About half of US goods imports are classified as industrial supplies or capital goods, which are used to manufacture products for US consumers and for export.¹¹ Expanded US use of global supply chains has contributed to this economic growth.

Global supply chains are neither always good nor always bad. They are, rather, tools that—used under appropriate circumstances—can provide substantial benefits. But notably, under different circumstances, these tools may require rigorous precautions.

Most troubling today is the superficially appealing argument that the supply chain failures during the pandemic and risks to supply from nonmarket adversary nations justify strictly limiting global supply chains and bringing more manufacturing of US-consumed goods home. This is an opportunistic variation of the enduring arguments for protectionism, or even autarky, or a more generic “industrial policy,” under a new guise.

The new version of the old message is that COVID-19 has revealed a fatal flaw in the global economy’s market system that was lurking unseen in the background all along.¹² The United States, this argument would go, could and should eliminate global supply chain risk by bringing more manufacturing jobs home, particularly in broadly defined

Chart 2
US Trade Has Grown
 Percent of GDP



Source: Author's calculations based on data from the Bureau of Economic Analysis, US Department of Commerce

sectors related to national security, and by making and mining more of what we need right here in the United States. We should be more self-sufficient, and in that greater self-sufficiency, we would find the security we want and have more jobs.¹³

But regarding jobs, the US labor market was at or near full employment in 2019, with the [unemployment rate](#) in the 3 percent range for the last 11 months of the year.¹⁴ If the nation had tried to shut down global supply chains and bring manufacturing jobs back to the United States at that point in time, what production would we have shed to free up the necessary US labor? If we shift labor from other goods manufacturing, would we need to import those products instead? Self-sufficiency is not within our reach, and it would be destructive if we were to try to reach it. Forcing jobs home may well have led to a net loss of value because much of overseas manufacturing is done by labor forces that are less skilled than our nation's. Many of the jobs that protectionism might bring home (for example, manufacturing masks, gowns, and other PPE) most likely could not pay well by US standards. In sum, as economists have understood for centuries, complex, high-value-added jobs will migrate to the highest-quality labor, and that is why the United States has a high standard of living. The work that has migrated from the United States is generally (though not exclusively) lower-skill, lower-wage jobs.

Another cost of protectionism is a loss of competitiveness. If the United States does not take advantage of low-cost inputs that it can buy abroad, our products will be more expensive in world markets, and will be less attractive for export. As other nations turn away from our newly expensive products, we will not only become poorer but also lose our position of leadership in the commercial world. This deterioration will snowball, in terms of both lost prosperity and lost influence overseas. If we believe that US standards of global commercial and diplomatic behavior have served the world well, we should not want to see US engagement wane.

There is yet another cost to protectionist manufacturing policies, in that other nations will retaliate. Any nation must be willing to import if it expects to export.¹⁵ If other nations pull back from trading with us when protectionism has us pull back from them, it will cost US jobs and incomes. Foreign retaliation could also mean that other nations would be less willing to supply the United States with needed materials or products in any true emergency.

What Is Security?

The COVID-19 pandemic was certainly extreme and, in some respects, unique, and it has awakened our nation to forgotten and different kinds of risks, including US dependency on potentially unreliable and adversarial nations. But what we face is exactly that—a risk—and business and the economy as a whole face risks of all kinds every day. Business decision makers and public policymakers must address all risks but should address each unique risk in its own appropriate way.

Global supply chain failures and challenges are by no means the only risks that business faces. A US manufacturer with only one domestic plant faces supply risk; no manufacturer

is totally self-sufficient. Factories need power and other public utilities, which can be affected by weather events¹⁶ or other natural disasters or hostile cyberattacks. Even domestic supplies of raw materials can be interrupted. In the extreme, labor as well as any physical supply can be cut off by a local public health emergency (just as COVID-19 did for many purely domestic enterprises). Thus, purely domestic firms could be interrupted by the very same global pandemic risk that we just endured. Terminating global supply chains does not guarantee security.

And preparing for risk is not costless. Shifting from a less expensive foreign source of any material or component to a more expensive domestic source will reduce the global aspects of risk (such as transportation) but will raise the price of the final product and therefore potentially reduce domestic employment and incomes overall.

And finally, there is no total security from any business risk. Insuring with certainty and in full against any supply interruption requires full redundancy, which simply doubles the cost. A truly airtight guarantee against a \$1 million risk costs \$1 million. Pursuing such a total guarantee against a risk (which by definition is a probability, not a certainty) is neither prudent nor wise. Business decisionmakers (and public policymakers) need to analyze every risk, including global supply chain risk, and figuratively buy the kind and amount of insurance that is appropriate and prudent in each case. Threats to national security or the public health, for example, justify more such insurance than possible interruptions to the supply of everyday consumer goods.

A risk that has a very low probability of occurring but a very high potential cost is among the most difficult planning problems. COVID-19 certainly was in this class of risks. It was called a 100-year event (given the arithmetically convenient 1918 “Spanish flu” outbreak), although a strong case can be made that another viral pandemic may arrive much sooner than another 100 years from now.¹⁷ This uncertainty must be factored into the nation’s response and preparation with respect to global supply chains and other aspects of public health.

But there are diverse potential global supply chain risks, and the US must consider and tailor responses specifically to each risk.

Different Supply Chain Risks Require Different Solutions

The United States faces a diverse list of supply chain vulnerabilities¹⁸ that can be triggered by natural disasters, public health crises such as the pandemic, or global geopolitical tensions. But forgoing the most efficient means of production to pull potentially low-value jobs back into the United States would not make our nation better off, in either the near or long term. Instead, looking at the differing specific risks raised by supply chains will show that differing public and business policy responses focusing specifically on individual supply chain vulnerabilities will yield the greatest benefits, achieving both security and prosperity at the least cost. In sum, the nation can reap the benefits of global supply chains while hedging against the cost of any failure—just as business and public policymakers can hedge against the cost of any other risk that arises in the normal course of operations.

First, the US needs to build a taxonomy of potential risks from supply chain failures. These may include:

- 1 **Threats to national security**, including strategically important materials and semiconductors. Potentially, interruptions in supplies of such materials could weaken the ability of the nation to produce or maintain weapons systems and defend itself in the short term and possibly over an extended time.¹⁹
- 2 **Possible economic disruption**. The auto industry, and others, have already had production delays because of shortages of semiconductors.²⁰
- 3 **Reduced economic growth from denial of access to technology**. Advanced battery technology, especially as it pertains to vehicles, is among those technologies cited as essential to US manufacturing strength.²¹
- 4 **Predatory pricing following from monopoly power**. China has by all evidence overinvested in manufacturing of “green energy” hardware such as wind turbines (just as it apparently overinvested in steel manufacturing) and subsidized its producers so that they can undersell legitimate global competitors,²² even though this “industrial policy” is a financial failure and costs China enormously in operating losses. But in theory, once China has driven all market-responsible private firms in other countries out of business, it could raise prices and profit disproportionately.
- 5 **Threats to public health**. Potential shortages in PPE and in active pharmaceutical ingredients have been cited as causes for concern.²³

Alongside that analysis, the US should build a taxonomy of the market strengths and weaknesses of US industries that do—or could—produce the kinds of commodities, products, or services for which our nation now relies on foreign suppliers:

- 1 **The US is fully competitive**. Were it not for subsidies to Chinese solar panel, wind turbine, and steel producers, for example, US producers could hold their own.²⁴ It is the Chinese government subsidies that put our producers at risk.
- 2 **The US is lacking in necessary natural resources to fill its own needs**. There are strategic materials where the United States lacks supply.²⁵ For example, Chinese exports of “rare earths” constitute over 60 percent of the world market, although much of that volume is mined in other nations under Chinese contracts.²⁶ However, in some prominent instances this situation is more complex; see below.
- 3 **The US has insufficient production capacity to meet our own needs**. This can be associated with issues of cost (see immediately below). It could also be related to the availability of raw material inputs or competitiveness of technology. For example, the US is a comparatively strong exporter of organic chemicals and pharmaceutical products in a fairly dispersed market involving many of our market-based allies.²⁷ However, there are fears of shortages in times of

stress, such as the recent pandemic or climate events (which may affect multiple potential suppliers).

- 4 **The US is not cost-competitive.** It might be more expensive for the generally high-skill, high-wage US workforce to manufacture simple, low-value products (like some PPE) that can be made by less-skilled labor. There are also some strategic materials—among them, some “rare earths”—that are present in the United States but are environmentally and physically hazardous and for that reason alone are costly to mine.²⁸ Other countries (prominently China) that are cavalier about environmental and worker safety can mine or manufacture those materials more cheaply, and in the extreme, can subsidize their sale to keep foreign producers out of the market.²⁹
- 5 **The US is not technologically competitive.** Some fear that the United States is falling behind in the ability to build high-capacity batteries (such as for automobiles) and therefore could lose its competitive position in the entire global market for automobiles (or related products).³⁰ The US share of exports of high-capacity batteries is less than 5 percent, while China holds more than 35 percent of the market.³¹ Semiconductor manufacturing may also fall into this category,³² where Chinese exports have grown to a substantial share of the world market, and a significant additional portion is potentially under Chinese threat in Taiwan.³³

Such a perspective on the dangers and causes of supply chain failures clarifies the choice of remedies. Below are five alternative solutions to the risks posed by global supply chains, starting with the least disruptive approaches, to highlight how the nation can maintain much of the cost savings provided by successful global supply chains with minimum economic and security risk:

- 1 **Cultivate additional sources of materials or intermediate inputs.** Relying on a single source (or multiple sources from a single geographic region) of any essential input, whether simple or sophisticated, expensive or cheap, entails risk. It behooves businesses to assess the security of their supply chains. In some instances, there may be alternative domestic sources, but potential supply chain failure is one more reason why the United States needs allies that share our values. Nonmarket, adversary nations will not be trustworthy suppliers, and so government can support business by strengthening our alliances. Free market-oriented nations can cooperate and plan for potential supply interruptions. Each allied nation can commit to picking up part of the slack if one or more nations should be isolated, for whatever reason. Advanced planning would be needed to prepare for any production adjustments needed. The United States should also work with allies to enforce free and fair trade and environmental rules, should nonmarket economies (such as China) engage in “industrial policies” and subsidize production, or degrade the environment to cut costs and gain a competitive advantage.
- 2 **Build stockpiles.** To prepare for a larger-scale supply interruption, or for an interruption that affects national security or public health, public stockpiles may be necessary, and private inventories at some level of the production chain must be adequate, whatever the commitment to “just-in-time delivery” at the final stage

of manufacturing.³⁴ The United States already stockpiles key public health and national security materials or goods that have comparatively long shelf lives; that process was not well executed before the COVID-19 pandemic, and we must learn to do better, including monitoring the types, quantities, and the useful lives of the stockpiled supplies. Even standardized semiconductors have become virtual commodities and could be stockpiled. Importantly, the nation can safely import stockpiled goods; there is no need for items purchased in times of safety to be made here, especially if foreign goods are of high quality and low cost. Cutting off cost-saving global supply chains to buy domestic in times of safety is merely wasting money, and in instances of scarce raw materials could even “drain America first.” International cooperation is essential, and nations as well as domestic firms can share “virtual” or “digital” stockpiles that detect shortages of essential goods and trigger sharing.³⁵

- 3 Invest in research and development (R&D).** Research effort in the United States (and in most of the market-driven world) is divided between government and private business. However, the two sectors do different kinds of research. Government typically does basic research, which is speculative and risky, and aims for no particular product application—even though its findings might ultimately lead to all manner of unanticipated commercial products.³⁶ Private research (which would often be called “development”) is more focused at specific products.³⁷ Notably, the federal government—beyond funding basic research itself—also subsidizes business research through a tax credit, but ideally in a neutral way—advancing all business technology development uniformly. This division of labor has served us well. Experience and economic theory both show that when government attempts to “pick winners”—through what has come to be known as “industrial policy”—it can make costly mistakes by advancing inferior technologies and thereby holding back superior alternatives.³⁸ But government funding of R&D has lagged.³⁹ Technological progress through research can potentially reveal alternative materials to circumvent supply risks in some applications. Additionally, the United States needs a strong talent base, which requires taking full advantage of our nation’s unparalleled attractiveness to talented workers from all around the world,⁴⁰ our world-class higher education institutions, and the postpandemic opportunity to train a highly skilled workforce.⁴¹
- 4 Invest in production.** Manufacturing capacity for goods that truly support national security or public health and that cannot be stockpiled in sufficient quantity may need to be maintained even if this cannot be done profitably. Such a decision must cross a very high bar, which must not be lowered by rent-seeking by powerful private interests.⁴² In a sense, military weapons for which there are no private uses are already subsidized in this fashion, when the federal government purchases them at a price that exceeds the cost of production. Indirectly, through a tax credit (the “orphan drugs” tax credit⁴³), the federal government also subsidizes the manufacture of pharmaceuticals that address rare, serious diseases whose incidence is so small that the drugs could not be developed and produced profitably. Contingency planning for a future global pandemic, in which importing foreign-produced supplies such as surgical masks cannot be counted upon, may require prior arrangements with US manufacturers to undertake surge

production, potentially with public subsidies for maintenance of such facilities (just as we pay the military reserves and the National Guard to be available for emergencies). Foreign domination of markets for semiconductors might require such a response, although it would not be justified for simple “commodity” chips that are available from multiple sources.

- 5 Maintain standby production facilities.** On the public health front, should the next viral outbreak be highly transmissible and highly lethal, the nation will need to put a newly developed vaccine into mass production over a very short time.⁴⁴ It is possible that prior arrangements with pharmaceutical manufacturers could summon enough production capacity from the industry’s existing facilities, including those overseas. If the probability of such a catastrophic pandemic is high enough, it might be necessary for public funds to build and maintain vaccine production capacity on a standby basis or subsidize private backup capacity (which could be divided among multiple producers). There may be similar contingencies in the field of national security. The potential costs of any rupture in a global supply chain would need to be considerable to justify such an extreme remedy.

Conclusion

In sum, the nation and the global economy need not necessarily give up the efficiencies and resulting increases in incomes that arise from successful global supply chains through an “industrial policy” that would waste scarce resources pursuing low-value jobs. Retreating for apparent safety out of fear of a range of possible eventualities (with different probabilities and different potential costs) would reduce employment and incomes even in safe times. There is no such thing as total security, and the nation must “buy insurance” for each supply chain risk it faces according to the likelihood and cost of each potential failure. But there are contingency remedies for many of the possible supply chain failures, challenges, and shortfalls, if business leaders and policymakers achieve appropriate advanced planning and cooperation among allied, market-based nations and among governments and private firms. Nations were surprised by the COVID-19 pandemic and its resulting economic disruption, but with the insights learned, they can plan for a repeat pandemic and identify and address specific potential national security risks. If private producers review the resilience of their own supply chains, seek backup suppliers where possible, consider appropriate stockpiles, and work with public authorities in genuine cases of national security or public health vulnerability, we can enjoy the benefits of well-functioning global supply chains as well as prosperity with stability.

Endnotes

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- 2 Tim Ryan and David McKinley, [“Shortages of Key Goods during the Coronavirus Pandemic Revealed America’s Dangerous Dependence on Foreign Countries,”](#) Business Insider, May 23, 2020.
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- 4 Serge Schmemmann, [“The Freeing of the Ever Given,”](#) The New York Times, April 1, 2021.
- 5 [“Executive Order on America’s Supply Chains,”](#) The White House, February 24, 2021.
- 6 [“Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth,”](#) The White House, June 2021.
- 7 To date, the policy discussion about global supply chains has focused almost exclusively on trade in goods, and the White House report follows that lead. However, even though trade in services generally is not reliant on physical transportation, it entails significant vulnerabilities. US data are “shipped” to other countries and may be abused through untrustworthy hardware or software. Bad actors can reach back to the United States through services supply chains and disrupt US business. And vital links in the supply chain of important services to Americans can be broken through the same natural disasters or public health events abroad that can disrupt trade in goods. The role of trade in services in global supply chains, and in commerce in general, deserves more attention.
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- 17 [“Vaccinating America,”](#) Committee for Economic Development of The Conference Board (CED), April 2021, especially page 12.
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- 32 Saheli Roy Choudhury, [“Tough Road Ahead for US Firms Trying to Cut Reliance on Taiwan Chipmakers,”](#) CNBC, April 13, 2021.
- 33 Analysis by The Conference Board of data from the International Trade Commission; Saheli Roy Choudhury, [“Tough Road Ahead for US Firms Trying to Cut Reliance on Taiwan Chipmakers.”](#)
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- 44 Research should pursue improved vaccines that could protect against a range of viruses, improving on the current technologies that must be formulated for each individual virus and that could have a longer shelf life, so that they may be stockpiled (or even formulated such that they could be administered to the entire population in advance of any viral threat). The new messenger RNA (mRNA) technology may allow such innovations and improvements. See Norbert Pardi and Drew Weissman, ["Development of Vaccines and Antivirals for Combating Viral Pandemics,"](#) Nature Biomedical Engineering, December 2020, pp. 1128-1133; Maggie Fox, ["Now Proven Against Coronavirus, mRNA Can Do So Much More,"](#) CNN, June 1, 2021; and Siddhartha Mukherjee, ["What the Coronavirus Crisis Reveals about American Medicine,"](#) The New Yorker, April 27, 2020.

SUSTAINING CAPITALISM

Achieving prosperity for all Americans could not be more urgent. Although the United States remains the most prosperous nation on earth, millions of our citizens are losing faith in the American dream of upward mobility, and in American-style capitalism itself. This crisis of confidence has widened the divide afflicting American politics and cries out for reasoned solutions in the nation's interest to provide prosperity for all Americans and make capitalism sustainable for generations to come. In 1942, the founders of the Committee for Economic Development (CED), our nation's leading CEOs, took on the immense challenge of creating a rules-based postwar economic order. Their leadership and selfless efforts helped give the United States and the world the Marshall Plan, the Bretton Woods Agreement, and the Employment Act of 1946. The challenges to our economic principles and democratic institutions now are equally important. So, in the spirit of its founding, CED, the public policy center of The Conference Board, will release a series of 2021 Solutions Briefs. These briefs will address today's critical issues, including health care, the future of work, education, technology and innovation, regulation, China and trade, infrastructure, inequality, and taxation.



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