

Testimony of

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Before the *European Parliament Committee on International Trade*

September 27, 2021

US Trade Policy and Supply Chain Resilience

Thank you for the invitation, it is a pleasure to testify in front of you again. Today I will briefly describe early lessons from my research on US policy impacting three critical, but very different, supply chains now in flux: semiconductors, COVID-19 vaccines, and personal protective equipment. Often the policy does not involve tariffs, but other measures impacting cross-border supply chains and hence trade.

Semiconductors are the ubiquitous chips used as inputs in most everything. Semiconductor supply chains are under scrutiny today because demand has spiked. With too few chips, the automotive sector and others have been forced to cut production of their goods.

Semiconductor supply chains were under stress well before the pandemic. Beginning in 2018, the US administration imposed 25 percent tariffs under Section 301 of the Trade Act of 1974; imports from China fell by billions of chips per year. The administration then imposed unilateral and extraterritorial export controls on semiconductors as well as semiconductor manufacturing equipment to certain Chinese firms for national security and related reasons; this triggered hoarding and other market disruptions.¹ These policies mostly remain unchanged today.

At the moment, the US Congress is considering legislation—the Creating Helpful Incentives to Produce Semiconductors for America Act or CHIPS Act—that could result in tens of billions of dollars of subsidies to the industry. (Here in Europe, President Ursula von der Leyen’s recent State of the Union speech suggested a European CHIPS Act could be in the offing.) In the US legislation, the exact funding is not yet settled. Some subsidies may be one-off incentives to locate or expand production facilities in the United States, potentially offered on a nondiscriminatory basis to both American- and foreign-headquartered firms. Some would fund research and development (R&D). But some subsidies may be tied to production of “legacy”—or older node—chips that are critical for sectors like autos; such funding may be needed in

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¹ See Chad P. Bown, 2020, [How the United States marched the semiconductor industry into its trade war with China](#), *East Asian Economic Review* Vol. 24, No. 4: 349-388; and Chad P. Bown, 2021, [The Missing Chips: How to Protect the Semiconductor Supply Chain](#), *Foreign Affairs*, July 6.

perpetuity if those semiconductors cannot be manufactured profitably in the United States or in another trusted supplier country.

CHIPS Act types of legislation could be an unprecedented foray into industrial policy for both the United States and the European Union. One concern is the difference between the speed at which the industry operates and technology evolves (fast) and that at which governments change policy (slow). Policymakers also lack access to detailed data on what is produced where and by whom, as well as real-time demand information revealing which automobile, medical device, consumer electronics or other company is running short on chips at any moment in time.

To reduce the chance of policy failure, the United States and the European Union should cooperate on a semiconductor supply chain resilience policy, including through the new Trade and Technology Council. That means coordinating on export controls—so the United States is not imposing them unilaterally—as well as on any subsidies to highlight R&D and to ensure diversification across nodes, suppliers, and locations. However, I also worry about the United States and the European Union suddenly giving up the fight against other countries’ semiconductor subsidies.² Both are naïve to think places like Taiwan, South Korea, Japan, and of course China would not respond with additional subsidies. A result could be global overcapacity, allegations of dumping, tariffs, and market segmentation.

COVID-19 vaccine manufacturing supply chains are a second important area for US policy. The speed of scientific advancement and emergence of manufacturing supply chains for Pfizer/BioNTech, Moderna, Johnson & Johnson, and AstraZeneca on both sides of the Atlantic has been extraordinary.³ Policy played a sizable role, but it could also have done better.

While Europe relied mostly on advance purchase agreements, the United States used Operation Warp Speed and the Defense Production Act. Washington allocated more funding to scale up manufacturing at risk and over the entire vaccine manufacturing supply chain, including critical raw materials and equipment.⁴ (Why didn’t Europe and countries elsewhere also subsidize input expansion?) Despite the US subsidies, those key inputs have been in scarce supply both within the United States and globally. The Defense Production Act gave US policymakers some visibility into those supply chains to help prioritize inputs being allocated to plants manufacturing priority vaccines. Policymaker decisions have been necessarily imperfect, given shifting conditions brought on by the pandemic. (See the CureVac example.⁵) But leaving such input allocations purely to markets would likely have resulted in other supply chain problems.

² See Organization for Economic Cooperation and Development, 2019, [**Measuring Distortions in International Markets: The Semiconductor Value Chain**](#), *OECD Trade Policy Paper 234*, Paris: OECD Publishing.

³ See Chad P. Bown and Thomas J. Bollyky, forthcoming, [**How COVID-19 vaccine supply chains emerged in the midst of a pandemic**](#), *The World Economy*.

⁴ See Chad P. Bown and Thomas J. Bollyky, 2021, [**Here’s how to get billions of COVID-19 vaccine doses to the world**](#), *PIIE Trade and Investment Policy Watch*, March 18.

⁵ See Chad P. Bown, 2021, [**Don’t let CureVac’s COVID-19 vaccine supply chain go to waste**](#), *PIIE Realtime Economic Issues Watch*, August 9.

However, allegations that the United States banned exports of inputs—even though subsequently refuted with data⁶—identify the need for additional transparency, information sharing, and cooperation with key partners.⁷ Though the United States and the European Union have been cooperating informally since early March 2021 to resolve vaccine supply chain bottlenecks, their joint task force was only formalized in September. That positive effort should be expanded—for vaccines, extended to other critical countries in the supply chain like India, the United Kingdom, and Switzerland—and lessons shared with other transatlantic supply chain resilience initiatives, such as semiconductors.

Nevertheless, both the United States and the European Union engaged in “vaccine nationalism,” as expected.⁸ Each failed to export enough final finished doses of vaccines quickly, to build on and support COVAX, and to follow global public health objectives by prioritizing healthcare workers and the most vulnerable populations globally, to reduce the likelihood of emergence of variants.

Personal protective equipment (PPE) is a third problematic supply chain. Both the United States and Europe experienced PPE shortages early in the pandemic and imposed export control policies. Furthermore, the United States also eventually allocated over \$1 billion of subsidies to expand capacity across its domestic PPE supply chain, not just for products like surgical masks and gloves but also critical inputs like fibers, rubber, and filters needed to manufacture them.⁹

A domestic PPE industry in the United States has emerged. Many companies that did not receive government support also responded to price signals by entering the market. However, as the pandemic recedes and prices fall, much of the US industry may find it difficult to compete with lower cost imports, primarily located in China. Yet, the early days of the pandemic revealed an excessive global concentration of residual supply in China. (China’s export expansion beginning in April 2020 eventually saved many lives globally; unfortunately, its export shortfall during the pandemic’s early days like cost lives.) Cooperating over PPE supply chains provides another opportunity for the United States and Europe to encourage diversification, as well as potentially on procurement, inventory management and stockpiling, and regulatory policy.

Finally, the experiences with semiconductors, COVID-19 vaccines, and PPE all argue strongly against purely domestic supply chains and autarky. Trade in these sectors has been critical throughout the pandemic. No one has been spared the need to lock down at some point. Policymakers must resist calls for excessive concentration of production *domestically*, which could create even more vulnerabilities.

⁶ See Chad P. Bown and Chris Rogers, 2021, [The US did not ban exports of vaccine supplies. But more help is needed](#), *PIIE Trade and Investment Policy Watch*, June 7.

⁷ See Thomas J. Bollyky and Chad P. Bown, 2021, [The Real Vaccine Procurement Problem: Why America Should Make Its Supply Chain More Transparent](#), *Foreign Affairs*, June 24.

⁸ See Thomas J. Bollyky and Chad P. Bown, 2020, [The Tragedy of Vaccine Nationalism: Only Cooperation Can End the Pandemic](#), *Foreign Affairs* v99, n5: 96-109; as well as Thomas J. Bollyky and Chad P. Bown, 2020, [Vaccine Nationalism Will Prolong the Pandemic. A Global Problem Calls for Collective Action](#), *Foreign Affairs*, December 29.

⁹ See Chad P. Bown, forthcoming, [How COVID-19 medical supply shortages led to extraordinary trade and industrial policy](#), *Asian Economic Policy Review*.

Supply chain resilience thus means additional transparency, inventory management, and diversified sourcing with trusted partners, as well as a commitment to quickly engage and cooperate on policy when an emergency strikes, especially to expand production.

US supply chain resilience policy is still a work in progress, but there are signs of potential cooperation—especially with the European Union—to ensure we do it better in the future.

Thank you, and I am happy to take any questions.