



Available online at www.sciencedirect.com

ScienceDirect

Journal of Policy Modeling 43 (2021) 805–843

*Journal of
Policy
Modeling*

www.elsevier.com/locate/jpm

The US–China trade war and Phase One agreement[☆]

Chad P. Bown¹

Peterson Institute for International Economics (PIIE), 1750 Massachusetts Avenue NW, Washington DC 20036, United States

Received 9 February 2021; received in revised form 19 February 2021; accepted 26 February 2021

Available online 22 April 2021

Abstract

The Trump administration changed US trade policy toward China in ways that will take years for researchers to sort out. This paper makes four specific contributions to that research agenda. The first is to carefully mark the timing, definitions, and scale of the products subject to the tariff changes affecting US–China trade from January 20, 2017 through January 20, 2021. One result was each country increasing its average duty on the other to rates of roughly 20 percent, with the new tariffs and counter-tariffs covering more than 50 percent of bilateral trade. The second contribution is to highlight two additional channels through which bilateral tariffs changed during this period that received less research attention. One tariff change is through product exclusions, another is trade remedy policies of antidumping and countervailing duties. The third contribution is to provide an initial exploration into why China fell more than 40 percent short of meeting the goods purchase commitments set out under the first year of the Phase One agreement. The last contribution is to consider additional trade policy actions—involving forced labor, export controls for reasons of national security or human rights, and reclassification of trade with Hong Kong—likely to affect US–China trade beyond the Trump administration.

© 2021 The Society for Policy Modeling. Published by Elsevier Inc. All rights reserved.

Keywords: US–China trade policy; Tariffs; Trade war timeline; Phase One agreement; Antidumping; Countervailing duties; Product exclusions; Export controls

JEL classification: F13

[☆] All of the data used in this article, as well as additional descriptive appendices, are available in Bown (2021b). Thanks to Bob Davis, Shawn Donnan, Aaron Flaaen, Penny Goldberg, Gary Hufbauer, Doug Irwin, Soumaya Keynes, Kathryn Langemeier, Jenny Leonard, Mary Lovely, Doug Palmer, Justin Pierce, Jake Schlesinger, Jeff Schott, Ana Swanson, Jenny Tang, Lingling Wei, Steve Weisman, and participants at the ASSA 2021 Annual Meeting for helpful conversations and suggestions. Euijin Jung, Hexuan Li, Lucy Lu, and Eva Zhang provided data and research assistance. Melina Kolb, William Melancon, and Oliver Ward assisted with graphics. All remaining errors are my own.

E-mail address: cbown@piie.com

¹ web: www.chadpbown.com

<https://doi.org/10.1016/j.jpmod.2021.02.009>

0161-8938/© 2021 The Society for Policy Modeling. Published by Elsevier Inc. All rights reserved.

1. Introduction

As a candidate for president, Donald Trump denounced the United States' trade relationship with China. In an important "jobs" speech in Monessen, Pennsylvania, on June 28, 2016, he foreshadowed his policies. "If China does not stop its illegal activities, including its theft of American trade secrets, I will use every lawful presidential power to remedy trade disputes, including the application of tariffs consistent with Section 201 and 301 of the Trade Act of 1974 and Section 232 of the Trade Expansion Act of 1962," he said.²

On that, Trump kept his word. His administration imposed tariffs on imports from China under each of the legal authorities mentioned in that speech. However, Trump did not follow through with other policies he promised to implement, including some involving the World Trade Organization (WTO) outlined in that same June 28 speech. He also said, for example, "I am going to instruct the US Trade Representative to bring trade cases against China, both in this country and at the WTO. China's unfair subsidy behavior is prohibited by the terms of its entrance to the WTO, and I intend to enforce those rules." His administration did not bring any meaningful WTO disputes against China, nor did it make any policy progress addressing China's subsidies, even with the US-China Phase One agreement, signed to much fanfare in January 2020.

The Trump presidency changed US trade policy toward China. Measuring that change and identifying its causes and effects will keep researchers busy for years. Doing so will also require carefully distinguishing between the Trump administration's rhetoric and its policy actions. At the same time, making sense of the Chinese government's policy response will prove equally challenging, as its actions were often less transparent and more difficult to measure, albeit for different reasons.

This paper has two main purposes. The first is to clarify how the Trump administration period resulted in new tariffs suddenly covering more than half of bilateral trade. It uses, and makes publicly available, detailed data on the timing and size of trade policy actions (tariffs imposed and trade covered) throughout the trade war, as well as the trade outcomes arising under the first year of the Phase One agreement. The second is to characterize other trade policy changes that occurred during the Trump period that have received less attention from researchers to date. Including these changes may be needed to provide a more complete and accurate political-economic assessment of what happened and why.

The paper thus makes four main contributions. First, after establishing the starting point, through a brief description of US–China trade relations before the Trump administration, the paper identifies the timing, definitions, and scale of products subject to the tariff changes affecting US–China trade from January 20, 2017 through January 20, 2021. On the US side, in addition to the Section 301 tariffs, it includes protection imposed via presidential discretion, including the US safeguard law (Section 201) and the US national security law (Section 232). These are the tariffs that most research has focused on when examining their impact on economic activity. By January 20, 2021, actions under these laws had raised the average US tariff on China to over 19 percent, up from 3 percent before the trade war.

On the Chinese side, the analysis begins with its trade war counter-tariffs. But the first complication to the Chinese story is its significant reductions in applied Most Favored Nation (MFN) tariffs undertaken during the trade war period. Indeed, while China's retaliation to US actions led

² See *Politico*, "Full Transcript: Donald Trump's Jobs Plan Speech," June 28, 2016.

it to increase its average tariff on US exporters from 8 percent to more than 20 percent over the course of the trade war, China *reduced* the average duty facing imports from the rest of the world from 8 percent to 6 percent by the end of 2020.

Second, the paper introduces two additional channels through which US and Chinese tariffs imposed on each other changed during this period. These channels are more challenging to measure and have received less attention, despite their potential to affect many avenues of political-economic interest.

One is the temporary product exclusions each side periodically granted to the trade war tariffs imposed on the other. At some point between 2018 and 2020, for example, the United States excluded products covering an estimated 4 percent of its imports from China that it had hit with new tariffs. It refunded, or excluded from tariff application, about 9 percent of the \$96 billion of estimated revenue collections for the Section 301 tariffs from 2018 through 2020. China, on the other hand, is estimated to have excluded roughly 16 percent of the US imports it had hit with counter-tariffs. Yet, even these exclusions do not include an important but opaque set of product-specific exemption opportunities the Chinese government created for Chinese firms starting in 2020, in order to perhaps facilitate their purchases under the Phase One agreement. The sliding nature and uncertainty of each country's exclusions and exemptions, as well as their potential retroactivity, requires careful consideration of how to interpret them, as well as their implications for economic activity. (The US exclusions may even affect economic analysis, given that the US Census has revised key data series in light of their retroactivity).

Trade remedies are a second channel through which tariff barriers also changed over this period. Unlike the other policies, use of antidumping and countervailing duties was not new. (Before the trade war, for example, US antidumping covered nearly 8 percent of US imports from China.) US use of such tariffs largely continued on its pre-Trump trend between 2017 and 2021, climbing to cover an additional 2.5 percentage points of imports from China. China also adjusted its tariffs through trade remedies during this period, albeit to a lesser extent. But failure to consider these policy instruments in an analysis of the trade war may lead to mis-measured estimates of the impact of other tariffs on economic activity or mischaracterization of why the United States or China chose to impose trade war tariffs on some products but not others.

Third, the paper provides an initial assessment of the first full year of purchases that China made under the Phase One agreement. The deal was announced in December 2019, signed in January 2020, and implemented in February 2020. The headline of the agreement was a Chinese commitment to purchase an additional \$200 billion of a subset of US goods and services split over 2020 and 2021. China fell more than 40 percent short of the 2020 targets for goods purchases, and a deeper look at a number of products helps explain why. It is not as simple as blaming the economic crisis caused by the COVID-19 pandemic.

Fourth, the paper identifies some additional policy actions the Trump administration implemented over 2017–21 that could also continue to affect US–China trade into the future. They include banning imports to address forced labor in Xinjiang; no longer considering Hong Kong an independent customs territory for purposes of US imports and exports; and imposing new export controls, including on semiconductors, equipment, and software.

2. The starting point

Before January 2017, US–China trade policy was complex, hardly the caricature of free trade described by Donald Trump.³ US trade barriers for Chinese exporters were relatively low, in the form of MFN tariffs—the same granted to every other WTO member country (or General Agreement on Tariffs and Trade [GATT] contracting party before the WTO was established). Beginning in 1980, the United States applied such tariffs on a provisional basis, subject to a yearly Congressional vote, until China’s 2001 WTO accession locked in “permanent” normal trade relations.

China began a period of slow opening to the world in 1978. The 1990s in particular were characterized by significant Chinese trade liberalization, tariff cutting, and opening to foreign direct investment, as China sought entry into the WTO. The result of China’s WTO accession in 2001 was to lock in its tariffs at an average rate of roughly 10 percent, 25–30 percentage points lower than what it had applied just a decade earlier.

The 15 years following China’s WTO entry had ups and downs. China was never on a path toward becoming a Western-style market economy (Wu, 2016). Yet Beijing continued with reforms, at least initially, becoming more market oriented before President Xi Jinping came to power in 2013 and significantly expanded the role of the state in the economy (Lardy, 2014, 2019).

It would be a gross mischaracterization to suggest that China’s WTO entry in 2001 resulted in “normal” trade relations between the United States and China. The United States continued to treat China very differently from all other WTO members, managing the trade relationship through a variety of WTO–sanctioned policies.

Trade remedies were the US policy of choice for addressing imports. By 2016, the United States had imposed tariffs—often at levels of 100 percent or more—on more than 7 percent of goods imports from China, up from roughly 2.5 percent as late as 2007. Most tariffs arose under US antidumping laws, given a provision in China’s 2001 WTO Protocol of Accession that allowed members to treat China as a “nonmarket economy,” which made it easier to find that Chinese firms had priced “too low” and could be subject to higher tariffs. In addition, starting in 2006, the United States began to deploy countervailing duties (i.e., anti-subsidy tariffs) on imports from China. The result was often that the United States hit the same imported Chinese product with two different forms of additional tariffs at the same time.

The United States attempted to improve its market access into China through the use of WTO dispute settlement. After a five-year grace period during which China phased in its WTO accession commitments, the United States brought 20 formal WTO disputes against China between 2006 and January 19, 2017. Over that period, the United States filed only 12 disputes total against all other WTO members. Given the multiyear nature of prosecuting such cases, the Bush and Obama administrations each turned over a handful of disputes to their successors to pursue. The Trump administration, for example, inherited US challenges to Chinese subsidies to the aluminum and aircraft industries; Chinese export restrictions on raw materials; and two disputes over Chinese policies on rice, wheat, and corn.

Before the Trump administration, the United States used a two-pronged negotiating approach to prod China onto the path to liberalization and market reform. The first was direct and included bilateral investment treaty negotiations. Although left unfinished by the end of the Obama admin-

³ Bown (2019a) and Blustein (2019) provide more complete summaries of pre-2017 US–China trade relations.

istration, some of its disciplines would ultimately be captured in the 2020 Phase One agreement.⁴ The United States also brought trade concerns directly to China, through regular, high-level bilateral meetings such as the Strategic Economic Dialogue (SED), under the Bush administration, and Strategic and Economic Dialogue (S&ED), under the Obama administration.⁵

The second was indirect pressure, to be exerted by the Trans-Pacific Partnership (TPP) the United States had negotiated with 11 other countries. TPP included preferential market access as well as tighter disciplines in areas such as state-owned enterprises and competition. To one day accede to the high-standards agreement and enjoy access to markets where it would otherwise have faced implicit discrimination through tariff preferences and other rules, China would have to become more market oriented.

The Trump administration put a quick end to much of the US strategy, with the exception of trade remedies (discussed below). Its approach toward China was ultimately two-pronged.⁶ The first prong involved tearing down the previous bilateral, plurilateral, and multilateral forms of engagement with China on trade. On his first Monday in office, Trump pulled the United States out of the TPP agreement and negotiations. (The remaining 11 countries went ahead with implementation of the agreement.) The administration allowed only two of the previously initiated WTO disputes against China (the ones involving agriculture) to go forward. It scrapped the disputes over raw materials, as well as China's aluminum and aircraft subsidies, and did not use WTO dispute settlement to pry open the Chinese market. (Its tenure was marked by WTO disputes against trading partner retaliation to US exports that arose in response to the Trump administration's own tariffs described below.) The Trump administration's refusal to appoint new members to the WTO's Appellate Body effectively ended the agreed-upon rules for how all countries could resolve trade disputes.⁷ Trump left office without seeking to replace the WTO's dispute settlement system with something else.

The Trump administration also ended bilateral engagement with China through the S&ED, instead adopting its own unique approach. In May 2017, for example, Presidents Trump and Xi held a summit in Mar-a-Lago, Florida, at which they announced the formation of US–China Comprehensive Economic Dialogue (CED) as well as a 100-day plan to negotiate. After 100 days, no deal was announced, the talks ended, and engagement was largely abandoned.⁸

The second prong of the Trump approach to China was implementation of considerable new border policies that made it more costly—and sometimes impossible—for the two countries to trade certain products.

The process of increasing US trade protection began in April 2017, when the Trump administration self-initiated two investigations under Section 232 of the Trade Expansion Act of 1962

⁴ See the interview with former US Trade Representative (USTR) negotiator Lauren Mandell (Bown & Keynes, 2020b).

⁵ Officials on each side would typically meet in person with their direct counterparts as part of large delegations, often twice per year.

⁶ Trump's nominee for USTR, Robert Lighthizer, was not confirmed by the Senate until May 11, 2017 (see Soumaya Keynes, "America's Trade Policy Has A New Face, Robert Lighthizer," *The Economist*, May 20, 2017). His confirmation was delayed in part because he required a waiver for having done work for a foreign government on a trade case. Until December 2018, who within the Trump administration had the president's ear on trade policy toward China was a guessing game (Woodward, 2018; Davis & Wei, 2020). Early on, Commerce Secretary Wilbur Ross attempted to play a leading role (see Wilbur Ross, "Most Favored Nation Rule Hurts Importers, Limits U.S. Trade," *Wall Street Journal*, May 25, 2017).

⁷ For an historical analysis, see Bown and Keynes (2020a).

⁸ Davis and Wei (2020, 185) report that Ross pitched signing off on a deal but Trump rejected it when Lighthizer informed him that it was an insubstantial offer. The talks then ended without agreement.

into whether imports of steel and aluminum posed a threat to national security.⁹ In August 2017, it self-initiated a separate investigation into China's unfair trade practices under Section 301 of the Trade Act of 1974. In May and June 2017, two industry groups asked the administration to look into whether imports of solar panels and washing machines had caused injury to the respective domestic industries, relying on Section 201 of the Trade Act of 1974. Under this safeguard law, the president would decide whether to impose any protection as well as its form.

The rest of 2017 was relatively quiet for US trade policy toward China, overshadowed by other events. Most important was the administration's launching of renegotiation of the North American Free Trade Agreement (NAFTA) in summer 2017, which kept US Trade Representative (USTR) negotiators busy until late 2018. Trade headlines were often drawn away from China, especially when the president would threaten withdrawal from the NAFTA, as well as the Korea–US Free Trade Agreement.¹⁰ However, the five trade policy investigations begun in 2017 set the stage for the president to use executive authority to conduct US trade policy, especially toward China, with little constraint beginning in early 2018.

3. Escalation, tariffs, and negotiations

The last three years of the Trump administration can be characterized by periods of tariff escalation with China interspersed with periods of negotiation and then the announcement and implementation of the Phase One agreement. The unprecedented nature and uncertainty of these events cannot be understated. Nothing comparable on trade had happened before, and US law constrained the president's actions in only limited ways. More often than not, presidential Tweets differed from White House announcements, which differed from policy implementation. Headline numbers were often meaningless, and dates of policy changes would often shift considerably or disappear entirely.

3.1. The pre-trade war escalation of early 2018

The Trump administration's tariff escalation began slowly in 2018. Initially, it was in line with WTO norms. China's response—while against norms—also initially followed its pre-Trump playbook.

On January 22, Trump announced that safeguard tariffs on imports of washing machines and solar panels, together covering more than \$10 billion of US imports, would go into effect on February 7.¹¹ The announcement followed determinations by the US International Trade Commission (ITC) in late 2017 that imports had injured the respective domestic industries and recommendations that the president impose protection. Though unutilized since an early 2000s case involving steel, Section 201 is a WTO-sanctioned policy with well-established domestic legal guidelines. Concerns arose that the January 22 decisions would lead to a flood of industry

⁹ See Soumaya Keynes, "The Trump Administration Starts to Turn up the Heat on Trade," *The Economist*, April 29, 2017.

¹⁰ For Trump's threat to withdraw from the US trade agreement with South Korea, see Woodward (2018, xxiii).

¹¹ For consistency, references to dollar values of trade or shares of trade covered by tariffs involve a process in which product codes are matched to 2017 trade statistics, unless stated otherwise.

demands for such protection,¹² but such requests did not materialize. In retrospect, these tariffs turned out to be among the *least* controversial trade actions of Trump's tenure.

Nevertheless, on February 5, China telegraphed its initial retaliation plans. Similar to its 2009 response to an Obama administration safeguard tariff on tires, China announced it was self-initiating antidumping and countervailing duty investigations. This time, roughly \$1 billion of US exports of sorghum were under threat.¹³ (In April, China would temporarily impose tariffs of 178.6 percent on those exports).

The Trump administration did not bat an eye. On February 16, the Commerce Department publicly released the two reports stemming from the separate Section 232 investigations begun the previous April. They found that imports of steel and aluminum threatened national security by causing capacity underutilization in the US industries, and Secretary Wilbur Ross recommended that the president impose import restrictions.

The February release was also noteworthy because, for the first time, the administration publicly defined what it meant by steel and aluminum. Under the safeguards, antidumping, and countervailing duty laws, the product scope was publicly established at the beginning of the investigation. In contrast, in these national security cases, it was unknown for nearly a year whether the administration was considering tariffs covering trade of a few million dollars or a hundred billion dollars. (This issue was not just rhetorical; statutory discretion allowed the administration to change the scope of product coverage in January 2020 to also include downstream steel- and aluminum-using industries). The February 2018 reports drew the line at imports of \$29 billion of steel and \$17 billion of aluminum, which together accounted for roughly 2 percent of US goods imports.

Under this statute, the president had the authority to decide how protection would be applied. Trump used the discretion to create uncertainty. Even his sudden announcement on March 1 of forthcoming tariffs of 25 percent on imports of steel and 10 percent on imports of aluminum did not settle the issue.¹⁴ Initially, he exempted seven trading partners—Canada, Mexico, the European Union, Australia, Argentina, Brazil, and South Korea—from the duties to be imposed on March 23; with these partners, he sought to negotiate voluntary export restraints and extract other concessions, such as a quick renegotiation to the NAFTA with Canada and Mexico on his terms.¹⁵ Eventually, all except Australia faced US tariff or nontariff protection of some form.

The fundamental inconsistency for US–China policy was that Beijing had been a source of the political-economic problem, underlying the two national security investigations, but the new US tariffs hit relatively few Chinese steel or aluminum products. Much of the glut of global steel and aluminum was linked to a sharp increase in Chinese production over the previous decade, fueled by subsidies and growth of its state-owned enterprises. But US antidumping and countervailing duties imposed under the Clinton, Bush, and Obama administrations had already halted most direct US

¹² Chad P. Bown, "Donald Trump's Solar and Washer Tariffs May Have Now Opened the Floodgates of Protectionism," *Washington Post (Monkey Cage)*, January 23, 2018.

¹³ Chad P. Bown, "China's Latest Trade Maneuver Is Worrying. Here's the Story," *Washington Post (Monkey Cage)*, February 6, 2018.

¹⁴ For a recounting of the surprise of the steel announcement—apparently organized by White House official Peter Navarro and Secretary Ross, against the wishes of others, including National Economic Council Director Gary Cohn—see Woodward (2018).

¹⁵ Argentina, Brazil, and South Korea would agree to a form of voluntary export restraint (VER) straight away. Canada and Mexico did not initially do so and were hit with tariffs starting June 1; each retaliated against US exports. However, they accepted a form of VER in May 2019, as part of the process of implementing the United States-Mexico-Canada Agreement (USMCA), the revised NAFTA. The European Union never accepted a VER, was hit with US tariffs on June 1, and retaliated shortly thereafter.

imports of the metals from China. The result was increasing imports of metals from third countries (trade diversion). As a result, Trump’s “national security protection” mostly affected imports from military allies such as Canada, Europe, Japan, and South Korea.

Nevertheless, China responded to the steel and aluminum duties with tariff retaliation. Like other WTO members, such as the European Union, China claimed that Trump’s national security tariffs were disguised safeguard tariffs and that, under the WTO rules on safeguards, it was therefore due immediate “rebalancing” compensation. On April 2, China applied retaliatory tariffs of 15–25 percent on \$2.4 billion of US exports, rebalancing roughly the amount of its steel and aluminum exports affected by the US tariffs of March 23.¹⁶ But even that Chinese retaliation was soon overshadowed by a bigger set of events.

3.2. *The US–China trade war tariffs of 2018 and 2019*

On March 22, President Trump announced that he was imposing tariffs on \$60 billion of Chinese imports. That day, the USTR issued a 215-page report on its eight-month Section 301 investigation (USTR, 2018a). The report documented various unfair trade practices the Chinese government had allegedly deployed since its WTO accession to forcibly transfer technology from US to Chinese firms. These practices included the mandating of joint ventures with local firms (including state-owned enterprises), state-sponsored industrial espionage, cyber-hacking, and the predatory acquisition of foreign technology.

The Trump administration formally announced 25 percent tariffs on \$50 billion of imports from China on April 3. By the end of the day in Washington (the morning of April 4 in Beijing), China had already announced that it would retaliate with 25 percent tariffs on \$50 billion of US exports. On April 5, Trump escalated tensions by instructing his USTR to find another \$100 billion of imports from China on which to impose tariffs. He also demanded his secretary of agriculture come up with a plan to protect US farm interests, in anticipation of retaliatory tariffs from China that would hit products like soybeans. (Over the next two years, the administration would disburse tens of billions of dollars of subsidies to farmers hurt by China’s tariffs).

Many details from that week are worth highlighting. First, Trump initially announced forthcoming tariffs on \$60 billion of imports; by April 3 the figure was \$50 billion. Second, as often turned out to be the case, the \$50 billion was a descriptor, not an actual trade amount. In the 2017 data, the United States imported only \$45.7 billion of products that the USTR indicated it was planning to hit with tariffs. This was also one of the few times during the subsequent trade war in which Beijing’s announcement of products listed for retaliation, at \$49.8 billion, matched its counter-headline. Finally, much like the steel and aluminum tariffs, the US Section 301 statute did not require public disclosure of the scope of products being investigated and thus did not constrain how much, or the type of, trade that might be affected by tariffs, let alone what level or for how long the tariffs might be imposed. These decisions were at almost complete discretion of the US administration—discretion President Trump took full advantage of over the next 20 months.¹⁷

¹⁶ The timing of the April 2 retaliation led to minor confusion because it came on the heels of a separate Trump administration announcement on March 22 (as described next) of forthcoming US tariffs under Section 301. The fast and furious tit-for-tat nature of the dueling announcements—and fear that it would soon become unclear who went first, who was retaliating, and what exact prior action the retaliation was linked to—led to the creation of the trade war timeline (Bown & Kolb, 2021) beginning in late March 2018.

¹⁷ This discretion—and the possibility that the Trump administration would use it—was known; Gary Hufbauer had highlighted it during the 2016 presidential campaign (Hufbauer, 2016).

The product list for US tariffs would also change considerably before the duties were ultimately imposed. On May 15–17, the USTR convened public hearings on the proposed list of products subject to tariffs. It received numerous objections and, in response, the USTR revised its approach. On June 15, it announced a \$34 billion list of products that would face tariffs on July 6, a \$12 billion list of products from the original proposal that would not face tariffs, and a new list of \$16 billion of imports that would undergo public hearings in July before being hit with tariffs in August. (China also adjusted its product list, mainly to match the trade covered by its retaliation one-for-one).

The United States imposed the first trade war tariffs on July 6, 2018. The 25 percent duties covered \$34 billion of imported products that later came to be known as List 1. China immediately responded with 25 percent tariffs on \$34 billion of US exports, including soybeans, lobster, pork, and cars. (The tariff on cars was especially painful for some US automakers, as China almost simultaneously lowered its applied MFN tariff on cars from 25 percent to 15 percent, creating additional preferential market access for Japan, Germany, and South Korea).

The US–China tariff escalation continued throughout the summer of 2018. Trump modified his \$100 billion announcement, instructing the USTR to find an additional \$200 billion of imports from China on which to impose 10 percent tariffs. With tempers continuing to rise, on August 1, the United States indicated that it was considering tariffs of 25 percent, not 10 percent, on that \$200 billion of imports. The United States (List 2) and China followed through with duties on \$16 billion of imports each on August 23, completing the initial, matching, \$50 billion of trade coverage for the tariffs and counter-tariffs announced that consequential first week of April.

More lists meant more rounds of public hearings and more modifications. In September, the United States imposed 10 percent tariffs on an additional \$200 billion of imports, announcing that tariffs on those List 3 products would increase to 25 percent on January 1, 2019. China retaliated again. And in November 2018, the administration released a second report reiterating China's unfair trade practices (USTR, 2018b).

The details of these tariff actions revealed at least three more insights. First, the United States periodically created new tariff codes when the administration wanted to exclude certain products from its trade war duties that were lumped with others in the official US tariff schedule. The most prominent was the desire to exclude tens of billions of dollars of smartwatches (e.g., Fitbit and Apple Watch) from the List 3 tariffs in September 2018. Second, the implication was that the exact coverage of the List 3 products was unknown. (Nevertheless, List 3 was estimated to cover closer to \$188 billion of imports in 2017 than \$200 billion.) Third, by September, China's tariff retaliation could no longer match US trade coverage one-for-one, because of its much lower level of bilateral imports. (US total goods imports from China in 2017 had been \$504 billion, whereas China's imports from the United States had been only \$155 billion.) Thus, China often applied tariffs covering much less trade, as well as at much lower tariff rates, than its initial headline announcements would suggest.

By September 2018, average US tariffs on China had increased from a pre-trade war level of 3.1 percent to 12 percent, with new tariffs covering nearly half of bilateral imports (Fig. 1).¹⁸ China's average tariff increased from 8 percent to 18.3 percent, with its retaliation covering nearly two-thirds of its imports from the United States. (Despite the opportunity, China had chosen *not* to retaliate over nearly a third of its imports from the United States).

¹⁸ Unless stated otherwise, to avoid down-weighting tariffs (as a result of import weights when tariffs are high), average tariffs are weighted by foreign exports, using a process in which six-digit tariffs are matched to the trading partner's product-level (six-digit) exports to the rest of the world.

a. US–China tariff rates toward each other and rest of world (ROW)



b. Percent of US–China trade subject to tariffs

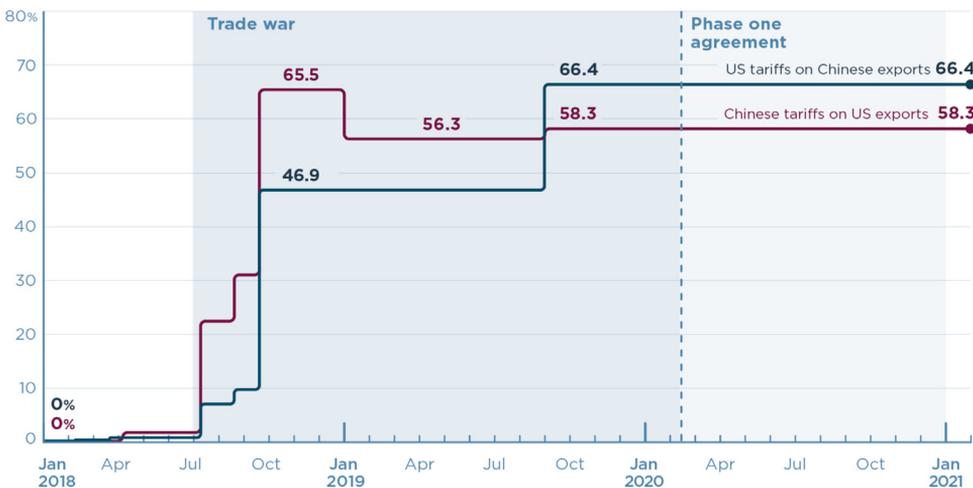


Fig. 1. US and Chinese average tariffs, January 2018–January 2021.

Note: Trade-weighted average tariffs computed from product-level (six-digit Harmonized System) tariff and trade data, weighted by exporting country’s exports to the world in 2017. Tariff changes as listed in Table 1.

Sources: Constructed by the author with data from Trade Map and Market Access Map (International Trade Centre), China’s Ministry of Finance announcements, and USTR announcements.

After a dinner at the Group of 20 (G20) meeting in Buenos Aires on December 1, 2018, Presidents Trump and Xi announced a 90-day truce in the trade war and began their first serious negotiations. Trump also made clear for the first time that USTR Robert Lighthizer, a trade lawyer by training and practice, would lead the technical negotiations. (Lighthizer had only recently been freed up from intense, year-long renegotiation of NAFTA, which concluded on September 30). Trump announced that an increase in US tariffs from 10 percent to 25 percent on \$200 billion

of List 3 products, scheduled for January 1, 2019, would be put on hold for 90 days. As a sign of good faith, China agreed to remove its retaliatory tariffs against US cars, lowering the tariff facing US automakers to 15 percent for the first time. The negotiations seemingly progressed. On February 24, 2019, nearing the end of those 90 days, Trump tweeted that he was delaying the tariff increase and planning a summit with Xi “soon.” The administration was sending public signals that a deal was imminent.

Then things changed dramatically. Negotiations blew up during a trip by Lighthizer and Treasury Secretary Steven Mnuchin to Beijing in May. Upon their return to the United States on May 5, Trump announced that he was increasing the tariff on List 3 products from 10 percent to 25 percent starting May 10. He also stated that he would “shortly” impose 25 percent tariffs on the remaining imports from China not yet covered by his tariffs. (The administration estimated that this tariff increase would cover roughly \$300 billion of goods, which it referred to as List 4).

Tariff escalation resumed where it had left off in September 2018, continuing in fits and starts throughout the spring and summer and into the fall of 2019. The US tariff increase on \$200 billion of imports announced in May was ultimately followed by new tariffs of 15 percent on an additional \$101 billion of imports from China on September 1. China retaliated each time (see Fig. 1).

The ramping up of tariffs in 2019 was far from smooth and often recalibrated midstream. The May 5 announcement, for example, would later be amended so that anything “on the water”—having left a Chinese port—by May 9 could avoid the US tariff increase provided it arrived at an American port by June 1. The June 1 date itself was later changed to June 15. (Some firms thus likely accelerated exporting List 3 goods into the United States ultimately to beat the June 15 deadline.) A practical implication was that the same good leaving China on May 9 could face different US tariffs depending on the mode of shipment. A direct air shipment would not face the tariff increase, whereas a seaborne shipment could if it made lengthy stops, arriving in the United States after June 15.

When the USTR formally implemented the other part of Trump’s May 5 announcement, it split the remaining \$300 billion (List 4) in two. The timing of the scheduled tariffs for products on List 4A (\$101 billion) and List 4B (\$151 billion), as well as the composition of products on each list, seemed affected by the administration’s perception of these tariffs’ likely impact on US consumers.¹⁹ List 4A included some clothing and footwear, shipments of which tended to increase in the summer (in advance of back-to-school shopping); those tariffs were ultimately not implemented until September 1, 2019.

Imports of consumer electronics and toys headlined List 4B. They spiked annually in October, in order to arrive at warehouses in time for the December holidays.²⁰ On August 13, the US administration announced a delay of tariffs on List 4B products until December. Trump stated, “We’re doing this for Christmas season, just in case some of the tariffs would have an impact on US customers.” However, he continued to deny that any of his previous tariffs were affecting US consumers, with “so far, they’ve had virtually none. The only impact has been that we’ve collected almost \$60 billion from China—compliments of China.”

¹⁹ Lists 4A and 4B would combine to cover only \$252 billion (not \$300 billion) of 2017 US imports from China. By 2019, the US administration may have shifted to evaluating the trade coverage of its product lists with reference to 2018 import levels, an approach not adopted here for consistency reasons.

²⁰ See Fig. 3 in Bown (2019b).

Tensions continued to boil through August. When China announced it would retaliate in response to Trump's new tariffs of September 1, he threatened an October 1 increase from 25 percent to 30 percent on the combined \$250 billion of imported products covered by Lists 1, 2, and 3. He also increased to 15 percent the upcoming tariffs to be imposed on List 4A (scheduled for September 1) and List 4B (scheduled for December 1).

On September 1, Trump followed through in imposing the 15 percent tariffs on List 4A. China immediately retaliated. But then, tempers started to cool. On September 11, Trump announced that the tariff increase to 30 percent (from 25 percent) scheduled for October 1 would be delayed to October 15. The next day, Bloomberg provided the first reports that the Trump administration was considering a mini-deal with China.²¹ On October 11, Trump announced the tariff increase from 25 to 30 percent scheduled for October 15 would be canceled, because his administration was on the verge of announcing a “very substantial Phase One deal” with China.²² The List 4B tariffs scheduled to go into effect on December 15, covering roughly \$151 billion of imports, were not mentioned, but they too were ultimately cancelled upon announcement of a final deal on December 13, 2019.²³ Nevertheless, the US tariffs ended up covering nearly two-thirds of imports from China by the end of 2019. China's counter-tariffs covered over 58 percent of imports from the United States (see again Fig. 1).

The waves of US and Chinese tariffs imposed over the course of 2018 and 2019 were also aimed at very different mixes of products. At the end of the tariff escalation, for example, more than 80 percent of US imports from China of intermediate inputs faced new tariffs of 25 percent (Fig. 2). In contrast, most textiles and clothing were on List 4A—facing lower tariffs, imposed with reluctance at the end of the trade war—and most toys and sports equipment avoided tariffs entirely.

China's tariff retaliation disproportionately focused on agricultural and seafood products, including soybeans, sorghum, pork, and lobster (Fig. 3). Despite imposing counter-tariffs over a fairly sizable share of its imports of US manufacturing, China mostly avoided placing tariffs on key inputs such as semiconductors and semiconductor manufacturing equipment as well as imports of aircraft and medical supplies. And while China had imposed retaliatory tariffs on autos in July 2018, they were suspended as part of the December 2018 truce and, while threatened, never reimposed.²⁴

A last policy worth highlighting was China's remarkable unilateral reductions to its applied MFN tariffs during the trade war. Tariff cuts came for hundreds of products—not just cars. China's average applied MFN tariff declined from 8.0 percent in January 2018 to 6.7 percent by November

²¹ Jenny Leonard and Shawn Donnan, “Trump Advisers Consider Interim China Deal to Delay Tariffs,” *Bloomberg News*, September 12, 2019.

²² Jenny Leonard, Saleha Mohsin, Josh Wingrove, and Shawn Donnan, “Trump Touts US–China Phase One Trade Deal, Delays Tariffs,” *Bloomberg News*, October 11, 2019.

²³ Not included in this discussion are two additional Trump administration tariff threats made during this period, neither of which resulted in tariffs. The first involved the administration's self-initiated Section 232 investigation of imports in the automobile sector in May 2018, which formed the basis of ongoing tariff threats especially against the European Union and Japan. The second took place in May and June 2019 when Trump threatened to invoke the International Emergency Economic Powers Act and impose 25 percent tariffs on all imports from Mexico in response to immigration concerns. Also not included is the raising of tariffs by removing certain countries and products from the US Generalized System of Preferences (GSP) program.

²⁴ Restoring the auto tariffs was an ongoing Chinese threat in 2019. See, for example, Se Young Lee and Judy Hua, “China Strikes Back at US with New Tariffs on \$75 Billion in Goods,” *Reuters*, August 23, 2019.

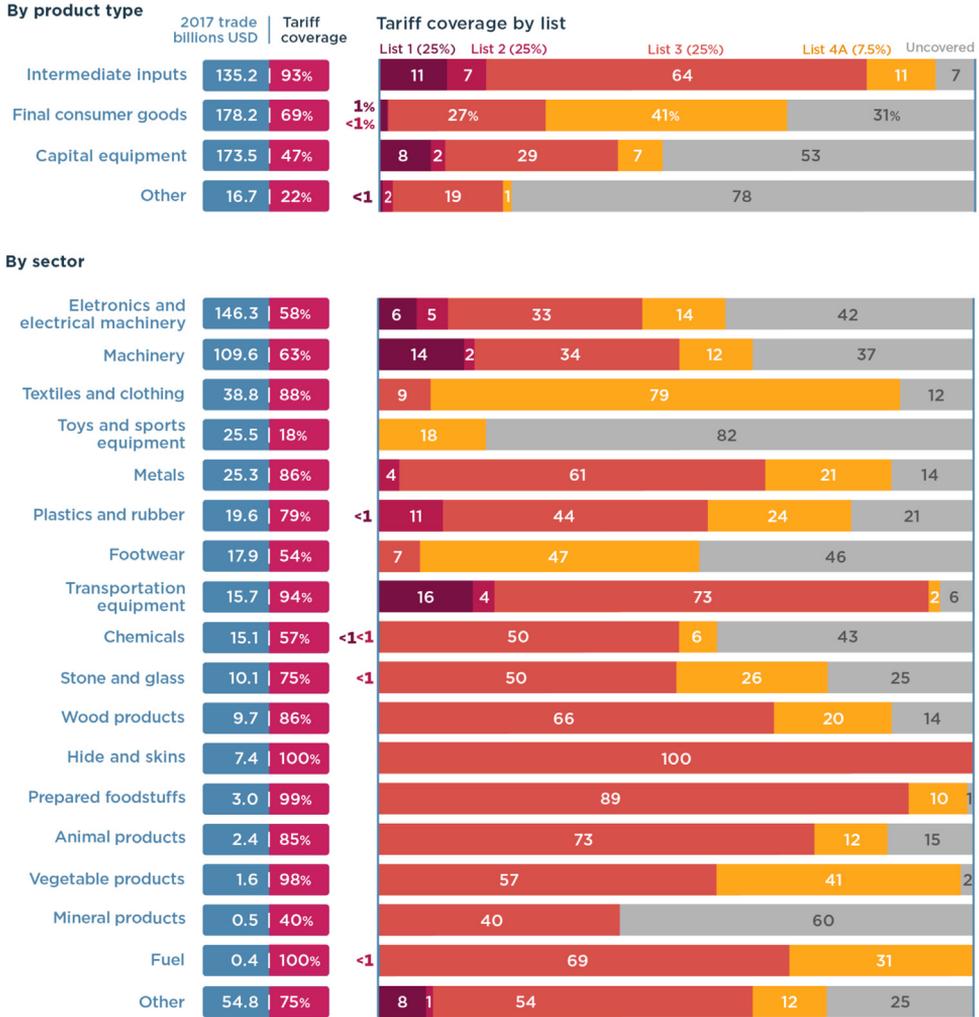


Fig. 2. US Section 301 tariff coverage of Chinese exports as of the Phase One agreement in February 2020. Note: Tariff coverage refers to share of bilateral imports covered by each Section 301 tariff list. Numbers may not sum to 100 due to rounding. Sources: Author’s calculations based on products listed in USTR announcements and US import data from US Census. Product types defined by UN Broad Economic Categories.

2018. It would cut its tariffs toward the rest of the world by another 0.6 percentage points over the remainder of the Trump administration period (see again Fig. 1).²⁵

²⁵ These changes in MFN tariff were not unique to this period; China also applied them on January 1 and July 1, 2017, cutting its average tariff from 8.1 percent to the 8.0 percent starting point illustrated in Fig. 1. What is striking is the size of the applied MFN tariff cuts taken over 2018–20.

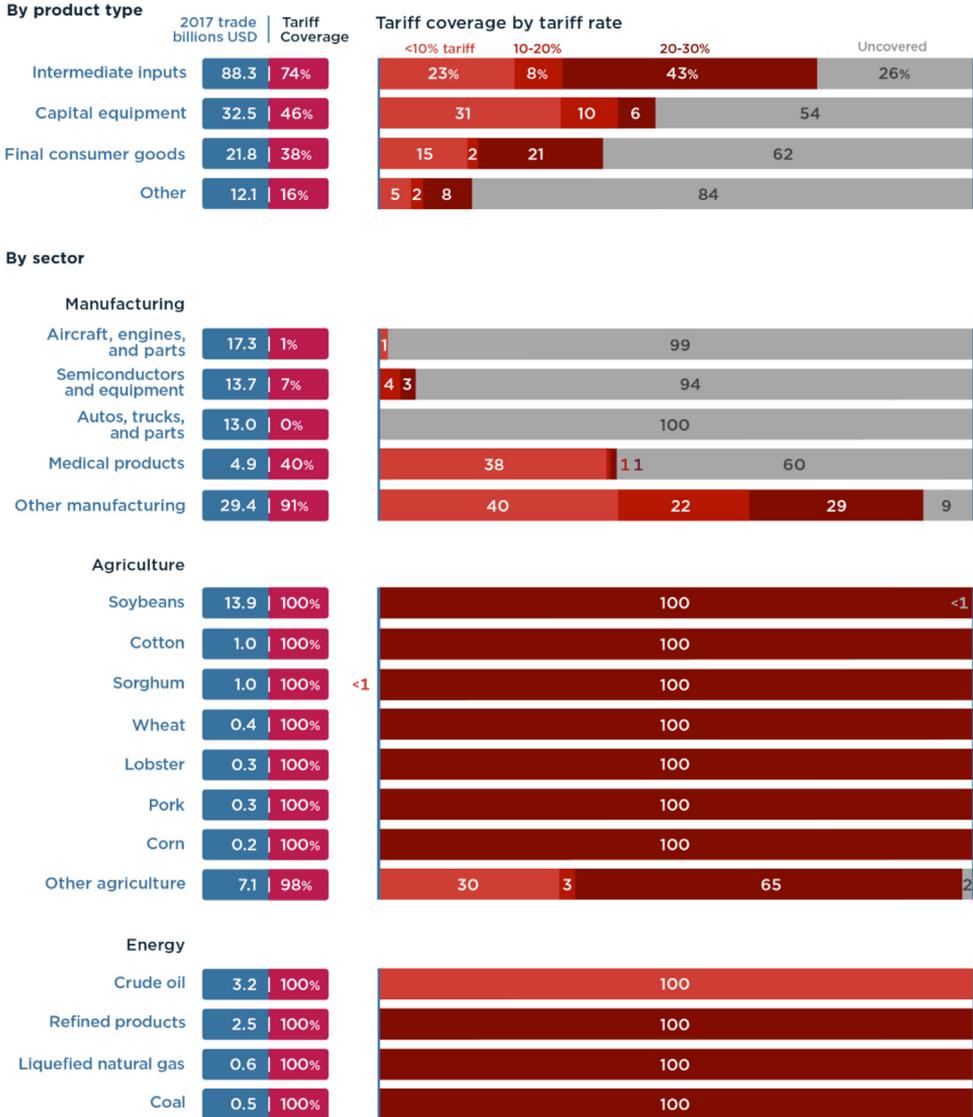


Fig. 3. China’s retaliatory trade war tariff coverage of US exports as of the Phase One agreement in February 2020. Note: Tariff coverage refers to share of bilateral imports covered by Section 301 counter-tariffs within that tariff range. Numbers may not sum to 100 due to rounding. Sources: Author’s calculations based on products listed in Chinese government announcements and import data from Chinese customs. Product types defined by UN Broad Economic Categories. See appendix for definitions of sectors.

3.3. Why measurement challenges are important for research

The extraordinary nature of the 2018–19 events is likely to continue to be the subject of economic research. Accurate measurement of policy changes will be needed to estimate both its determinants and its impact. [Table 1](#) lists the key dates of tariff changes, for example.²⁶

Scholarship has already begun to document why the details captured here are important. In order to address the question of who bears the economic burden of the tariffs, researchers, including [Amiti, Redding, and Weinstein \(2019, 2020\)](#) and [Fajgelbaum, Goldberg, Kennedy, and Khandelwal \(2019\)](#), have examined monthly data to assess the pass-through of the tariffs on prices and other economic outcomes. These and other studies have consistently refuted President Trump's statements that China bore the burden of the US tariffs in 2018, for example.

Other work has examined uncertainty. [Baker, Bloom, and Davis \(2019\)](#) find that trade policy news caused nearly 40 percent of all jumps—defined as a change of plus or minus 2.5 percent—in the US stock market between January 2018 and August 2019. In the previous 117 years, trade drove only 0.6 percent of stock market jumps. Because this type of research requires access to higher-frequency (daily) data, accurately capturing (and distinguishing between) dates of Trump administration leaks, Tweets, formal announcements, impositions, and revisions to trade policy may be critical.

Researchers will also need to identify and disentangle political-economic determinants of what products the Trump administration and China chose to hit with tariffs, at what level, when and why. In many instances, it seemed as if US tariff lists were retrofitted to meet the president's demands for large numbers (given evidence that product lists often added up to substantially less than the dollar amount of trade the president had mentioned in the headline). That the president indicated that the last (List 4B) tariffs were delayed—ultimately they were never imposed—out of concern that consumers would notice their impact also implies that the administration chose earlier products based on the belief that consumers would not notice them, perhaps because those tariffs were imposed primarily on intermediate inputs. Finally, after the initial round of tariffs showed that the actions were not just bluff, some announcements likely led to anticipatory actions, in which importers attempted to race products into the United States before the tariffs went into effect.

These and other issues create challenges for empirical research attempting to measure the costs, benefits, causes, effects, and distributional implications of the trade policy events of 2018 and 2019.²⁷ At least two sets of additional policy issues, described next, may further complicate many such analyses.

4. US and Chinese product exclusions from the trade war tariffs

In December 2018, the Trump administration announced the first subset of products that it would temporarily exclude from the Section 301 tariffs. The USTR had established a process by which American companies could make such requests. It accepted some and rejected others, with accepted exclusions applied retroactively. For example, a List 1 product excluded in October

²⁶ A table in the appendix to the working paper version ([Bown, 2021b](#)) includes not only the dates of policy changes but also dates of announcements of those changes, as well as some key policies that were announced but not implemented.

²⁷ It is beyond the scope of this paper to fully review the literature. But additional examples of early research include [Cavallo, Gopinath, Neiman, and Tang \(forthcoming\)](#); [Flaen and Pierce \(2019\)](#); [Vaugh \(2019\)](#); [Handley, Kamal, and Monarch \(2020\)](#); and [Fetzer and Schwartz \(forthcoming\)](#).

Table 1
Timeline of key US and Chinese tariff changes, 2018–21.

Date	Action
2018	
February 7	US imposes tariffs of 30 percent on solar panels and 20 percent on washing machines under two Section 201 cases. Tariffs on solar panels will be phased out over four years; tariffs on washing machines tariffs will be phased out over three years.
March 23	US imposes Section 232 tariffs of 25 percent on imports of steel and 10 percent on imports of aluminum from China and other countries, temporarily exempting Argentina, Australia, Brazil, the European Union, Canada, Mexico, and South Korea.
April 2	China imposes tariffs of 15–25 percent on \$2.4 billion of imports from US in retaliation to US Section 232 steel and aluminum tariffs.
May 1	China cuts Most Favored Nation (MFN) tariff on pharmaceutical products.
June 1	US extends Section 232 tariffs on steel and aluminum to Canada, Mexico, and European Union. (South Korea and Brazil accept VERs for steel, face aluminum tariffs. Argentina accepts VERs for both steel and aluminum. Australia is exempted from both tariffs without agreeing to VERs.)
July 1	China cuts MFN tariff on consumer goods, autos, and information technology products
July 6	US imposes Section 301 tariffs of 25 percent on revised list of \$34 billion of imports from China (List 1). China imposes tariffs of 25 percent on revised list of \$34 billion of imports from US in retaliation to US Section 301 tariffs of July 6.
August 15	US increases Section 232 tariff on steel imports from Turkey from 25 percent to 50 percent.
August 23	US imposes Section 301 tariffs of 25 percent on revised list of \$16 billion of imports from China (List 2). Combined with July 6 action, this completes the imposition of tariffs on the first \$50 billion of Chinese imports. China imposes tariffs of 25 percent on revised list of \$16 billion of imports from US in retaliation to Section 301 tariffs of August 23.
September 24	US imposes Section 301 tariffs of 10 percent on \$200 billion of imports from China (List 3). (Tariffs to increase to 25 percent on January 1, 2019.) China imposes tariffs of 5–10 percent on \$60 billion of imports from US in retaliation to US Section 301 tariffs of September 24.
November 1	China cuts MFN tariff on industrial goods.
2019	
January 1	China suspends retaliation tariffs on imports of US autos and parts that had been imposed on July 6, 2018.
January 1	China reduces MFN tariffs for 2019.
February 7	US reduces Section 201 tariffs on solar panels and washing machines, following guidance of initial announcement.
May 20	US exempts Canada and Mexico from Section 232 tariffs on steel and aluminum; both agree to VERs.
May 21	US reduces Section 232 tariff on steel imports from Turkey from 50 percent to 25 percent.
June 1	US raises Section 301 tariff from 10 percent to 25 percent on \$200 billion of imports (List 3). Initially, the US announced that products “on the water” by May 9 would continue to face 10 percent tariff as long as they arrived at a US port of entry before June 1. Date was later changed to June 15. China increases tariffs on a subset of the product list it hit with tariffs on September 24, 2018 in retaliation to US Section 301 tariff increase on List 3 effective June 1.
July 1	China cuts MFN tariffs on IT products.
September 1	US imposes tariffs of 15 percent on \$101 billion of imports from China (List 4A). China increases tariffs on a subset of \$75 billion of imports from US in retaliation to US Section 301 tariffs on List 4A.

Table 1 (Continued)

Date	Action
October 18	US imposes Section 301 tariffs on imports of selected European products after WTO authorizes retaliation in the <i>EU–Large Civil Aircraft</i> dispute.
December 13	US announces agreement with China on legal text to be signed January 2020. US cancels its scheduled 15 percent tariff on \$151 billion of imports from China (List 4B), and China cancels its scheduled retaliation.
2020	
January 1	China reduces its MFN tariffs on selected products. US reduces tariffs on some imports from Japan as US–Japan Trade Agreement goes into force.
January 15	US and China sign Phase One agreement in Washington, to go into effect February 14, 2020. China agrees to purchase an additional \$200 billion of US goods and services exports over 2020 and 2021. Although not part of the legal agreement, each side also indicates that it will cut in half the last round of bilateral tariffs, imposed on September 1, 2019.
February 7	US reduces Section 201 tariffs on solar panels and washing machines, following guidance of initial announcement.
February 8	US extends Section 232 tariffs to some imports of steel- and aluminum-using products, including from China.
February 14	Phase One agreement goes into effect. US reduces tariffs on \$101 billion of imports from China (List 4A) from 15.0 percent to 7.5 percent. China reduces retaliatory tariffs imposed on September 1, 2019 by 50 percent.
March 5	US adjusts Section 301 tariffs on imports of selected European products as part of WTO authorization of retaliation in the <i>EU–Large Civil Aircraft</i> dispute.
July 1	China cuts MFN tariffs on IT products.
August 16	US reimposes Section 232 tariff of 10 percent on certain aluminum products imported from Canada.
September 1	US eliminates reimposition of Section 232 tariff of 10 percent on certain aluminum products imported from Canada (announced October 27, 2020 and made retroactive).
2021	
January 1	China reduces its MFN tariffs on selected products. US reduces tariffs on some imports from Japan as US–Japan Trade Agreement is phased in.
January 12	US adjusts Section 301 tariffs on imports of selected European products as part of WTO authorization of retaliation in <i>EU–Large Civil Aircraft</i> dispute.
January 20	Trump administration leaves office.

Source: Compiled by the author. See also [Bown and Kolb \(2021\)](#).

of 2019 could receive a refund of the revenue from the 25 percent Section 301 tariff that an importer had paid for it on any transactions dating back to July 6, 2018. By the end of the Trump administration, more than 50 sets of product exclusion announcements had been made. Companies whose exclusions were denied complained, but for the most part, the exclusion-granting process for the China tariffs was crowded out by other trade policy headlines.²⁸

That changed in early 2020. When COVID-19 arrived in the United States, Trump’s Section 301 tariffs were found to apply to imports of personal protective equipment and other medical gear in short supply because of the pandemic. On March 10, the USTR quietly began grant-

²⁸ The USTR product exclusion process for the Section 301 tariffs was distinct from the product exclusion process that the Department of Commerce administered for tariffs imposed on steel and aluminum starting in March 2018. The Trump administration’s other process for granting product exclusions—for the steel and aluminum tariffs—generated considerable media attention, especially when the Inspector General of the Commerce Department suggested potential improprieties ([OIG, 2019](#)).

ing additional exclusions for COVID-19-related products.²⁹ When the public got wind that the administration was still imposing tariffs on products affecting medical supplies, USTR Lighthizer wrote a letter to the *Wall Street Journal*, claiming (emphasis added), “The US Trade Representative granted immediate exclusions from the Section 301 tariffs *for all* critical medical products weeks ago.” That statement was incorrect. Shortly after he made it, media outlets reported on explicit USTR rejections of additional exclusion requests made for pandemic-related products. Companies requested additional exclusions as they learned that tariffs were still hitting imported inputs needed to scale up production of pandemic-related goods, including ventilators the Trump administration was demanding they manufacture through invocation of the Defense Production Act.³⁰ Under pressure after those reports, the USTR reversed itself and accepted additional COVID-19-related exclusion requests.

The COVID-19 fiasco revealed that the US administration had little knowledge of how Americans used the products it was hitting with Section 301 tariffs. This problem was just one of many transparency concerns with the tariffs and exclusions, beginning with the standard political economy questions of which exclusions were accepted, which were denied, and why.³¹

Another important transparency concern arose because the administration often granted exclusions at the level of a product description (defined here as a “variety”), a more disaggregated level than the 10-digit Harmonized Tariff Schedule (HTS) level found in publicly available trade statistics. It was thus impossible to assess how much trade the USTR was excluding from the tariffs at the time of any announcement. Only months later, after the trade statistics were published, would it be possible to even estimate their trade coverage.

The product exclusions mattered, for several reasons. First, they affected tariff revenue collections.³² Fig. 4 shows the ratio of collected tariff revenue to the value of imports—by definition equivalent to the import-weighted average tariff—for each of the four Section 301 product lists. If the exclusions had had no effect (or none were claimed), then the average tariff for List 1, for example, should have jumped by 25 percentage points after July 6, 2018, and remained at that level through the end of 2020. Once the revised Census data became available, reflecting the revenue rebates from exclusions, it became clear that the initial tariff increase did not reach 25 percentage points after July 6 and that the average tariff for List 1 declined over time. This

²⁹ See the analysis by Bown (2020a), cited in Robert B. Zoellick, “Trump’s Tariffs Leave the US Short on Vital Medical Supplies,” *Wall Street Journal*, March 18, 2020.

³⁰ Bloomberg reported that in a letter dated March 5, the USTR rejected Purell-maker Gojo Industries’ request for an exclusion from the Section 301 tariff on a specially designed injection molded collar from China to increase production of dispensers for hand sanitizer (Jenny Leonard, “Maker of Purell Hand Sanitizer Denied in Request for Trump Tariff Relief,” *Bloomberg*, March 27, 2020). Only on April 3—under pressure after the denial surfaced in the Bloomberg report—did the USTR reverse its decision. The *Wall Street Journal* reported that General Motors issued a letter to the USTR on March 31 pleading that it drop the China tariffs on parts needed to make ventilators that it was being directed to manufacture under the administration’s invocation of the Defense Production Act (Katy Stech Ferek, “GM Seeks Tariff Relief for Ventilator Parts,” *Wall Street Journal*, April 3, 2020).

³¹ See, for example, Hufbauer and Lu (2019).

³² This section draws on Bown and Li (forthcoming). Flaaen et al. (2021) simultaneously conducted a related analysis. Both studies noticed an apparent Census data error, as the Section 301 duties on numerous products that did not receive announced exclusions in March 2020 suddenly disappeared for the rest of 2020 in the data available as of January 2021. The analysis here assumes that duties continued to be collected on those products as they were before the change of March 2020. A table in the appendix to the working paper version (Bown, 2021b) includes more information on dates of product exclusions.



Fig. 4. Average US tariffs for different Section 301 product lists, inclusive of exclusions, January 2017–December 2020. Note: Tariff data are import-weighted. List 1 tariff of 25 percent went into effect August 23, 2018. List 2 tariff of 25 percent went into effect September 24, 2018, rising to 25 percent in June 2019. List 4A tariff of 15 percent went into effect September 1, 2019; it was reduced to 7.5 percent on February 14, 2020. List 4B tariff of 15 percent was threatened but never imposed. Other comprises products that were not included in any of the five lists.

Sources: Author’s calculations based on products listed in USTR announcements and US import data from US Census.

evidence suggests that tariffs were excluded on an increasing share of products imported under List 1.³³ (Similar patterns hold, to varying degrees, for the other lists of products hit with tariffs).

The declines were likely the result of two forces. One was simply that the USTR widened the set of excluded products on a given list over time. The second was the endogenous response of imported products and varieties. In response to the tariffs and exclusions, American buyers likely increased their relative purchases of excluded products and varieties (and decreased their purchases of nonexcluded products and varieties) within a given list.

One way to estimate the share of trade excluded from the tariffs *ex post* was to start at the product level and aggregate up. Consider, for example, an exclusion announcement made in October 2019 for a List 1 product at the level of a product description (“variety”).³⁴ Once Census published the revised data on rebated tariff revenue from that exclusion, it was possible to construct the import-weighted average tariff for August 2018—the period immediately after the List 1 tariff of 25 percent went into effect—using the ratio of calculated duties to customs value of imports.³⁵

³³ Relatively few products were excluded from List 4A, as discussed below. In Fig. 4, the average tariff for List 4A products was roughly 5 percent prior to the trade war; it jumped to roughly 20 percent when the 15 percent tariff was applied on September 1, 2019 and declined to roughly 12.5 percent after February 14, 2020, when the List 4A tariff was cut in half (to 7.5 percent) alongside the Phase One agreement going into effect.

³⁴ The question is what share of the 10-digit product was of the excluded variety, as the exclusion was granted at the more disaggregated level of the variety (product description). For example, if the 10-digit product was widgets, the exclusion may have been granted to blue widgets and implicitly not to red widgets. This approach seeks an estimate of the share of widgets that were blue widgets.

³⁵ The approach adopted here is to compare the two months immediately after implementation of the Section 301 tariff (August and September 2018 for List 1) to the two months before it was imposed (May and June 2018). Limiting the analysis to the months immediately after implementation reduces the endogenous composition effect, which should increase over time as companies change sourcing decisions, everything else equal. Even this approach provides only an estimate of trade coverage of an exclusion for an HTS-10 product.

As a second step, consider the same trade-weighted average tariff with data from June 2018—that is, before the 25 percent Section 301 tariff for the List 1 10-digit product (“product”) went into effect. If their difference (x) was zero (i.e., the two trade-weighted average tariffs were the same), then the product did not receive any claimed exclusions. If $x=25$, then there was 100 percent coverage (i.e., all varieties within the product were excluded). More generally, $(1-x/25)$ percent of the value of the product will have been excluded.

Overall, estimates suggest that 4 percent of the value of all US imports subject to Section 301 tariffs were excluded at some point between 2018 and 2020. This estimate includes 14 percent of the value of imports on List 1, 9 percent on List 2, 3 percent on List 3, and 2 percent on List 4A. In terms of forgone revenue, the US administration reimbursed (or failed to collect) an estimated 9 percent of the roughly \$96 billion of tariff revenue associated with the Section 301 tariffs in effect between July 2018 and December 2020.³⁶

Interpreting even these estimates requires considerable caution. Fig. 4 does not suggest, for example, that the product exclusions suddenly reduced the trade coverage of the Section 301 tariffs, or that the implied reduction in the trade-weighted average tariff changed the impact of the tariffs on imports. Because the exclusions were granted with considerable delay and heterogeneity, as well as retroactively, temporarily, and incompletely, much more careful research is required to determine their impact on any economic activity.

China also began announcing temporary product exclusions in September 2019. It made four such announcements over 2019 and 2020, with only some exclusions applying retroactively. Much less information was available on China’s exclusion process; without access to revised data on rebated tariff collections by product, for example, it is unknown whether not all varieties within a product code were excluded (as in the United States). Under the assumption that all varieties within a product received an announced exclusion, an estimated 16 percent of the value of imports subject to China’s retaliatory tariffs were subsequently excluded at some point between September 2019 and December 2020.

The existence of US and Chinese exclusions raises a host of other important political-economic questions for research.³⁷ Of the firms that could have filed an exclusion request, what determined which ones mustered the resources to do so? Conditional on filings, what factors determined which exclusion requests were accepted versus denied? Finally, to what extent did these exclusions (rebates) work like a compensatory subsidy and offset some of the losses generated by the tariffs—i.e., who ended up capturing the rents?

The Trump administration did grant a separate set of product exclusions in response to its Section 232 tariffs on imported steel and aluminum. These exclusions were important for imports from other countries; the speculation here is they may have had less of an effect on US imports of steel and aluminum from China, because other (antidumping and countervailing duty) policies—most of which pre-dated the Trump administration—already constrained those imports, as described next.³⁸

³⁶ Estimated tariff revenues were \$8.3 billion on varieties of excluded products, \$44.2 billion on varieties of HTS-10 products that received exclusions, and \$43.6 billion on products that received no exclusions. Total collections were thus \$87.8 billion; total potential revenue was \$96.1 billion.

³⁷ One practical question is whether it has become impossible to replicate the findings of studies such as Fajgelbaum et al. (2019) relying on the newly revised Census data reflecting the tariff revenue having been rebated retroactively.

³⁸ See also Bown (2018). For exclusion requests from the Section 232 tariffs on steel and aluminum, see Brunk, McDaniel, and Parks (2019).

5. US and Chinese use of antidumping and countervailing duties

Heading into the Trump administration, US use of antidumping and countervailing duties toward China was a major trade policy issue. China had long been the top target for American use of both policies. Only a month after the US presidential election was December 11, 2016, the 15-year anniversary of China's WTO entry, and with it arose the legal question of whether China would be granted "market economy status." The decision was of political-economic importance to China and economic importance to the United States (and elsewhere) because of its implications for how to compute antidumping tariffs. China filed WTO disputes against the United States and the European Union over the issue in December 2016. President-elect Trump staked out the US position with his statement that China was not a market economy.³⁹

Non-market economy status meant that the country investigating the allegations did not have to rely on actual price and cost information from Chinese firms in order to estimate whether they were pricing too low and, if so, by how much. (That answer determined the size of the antidumping duty). For exports from non-market economies like China, policymakers could rely on cost information from third, surrogate countries instead. The argument was that the distortions created by China's state-driven model and state-owned enterprises led to subsidized inputs, rendering Chinese firms' own price and cost data meaningless for antidumping computations.

In 2006, the United States also changed the manner in which it administered its countervailing duty law and began applying anti-subsidy tariffs to China. Most of the trade remedies the United States imposed on imports from China after 2006 were a combination of antidumping and countervailing duties on the same product, imposed almost simultaneously. And the United States' historical use of both policies on imports of aluminum and steel from China—the products later covered by the Section 232 tariffs imposed beginning in March 2018—implied that those tariffs largely affected imports from countries other than China.

The WTO dispute over antidumping and China's non-market economy status was quickly overshadowed by the trade war described in section 3. Nevertheless, China initially continued to pursue its WTO case against the European Union, only withdrawing the complaint after receiving a privileged view of the WTO's preliminary Panel Report.⁴⁰ China stopped pursuing the WTO dispute against the United States entirely.

The United States' heavy use of antidumping and countervailing duties against China continued during the Trump administration. More than 40 new investigations were initiated, with more than 30 new sets of duties imposed. Nevertheless, the trade coverage stayed mostly on trend with the increased pace that had begun in 2007. More than 7 percent of US imports from China were covered by antidumping and countervailing duties before the trade war; the figure increased to 10.3 percent by the end of 2020 (Fig. 5).

For some products, new US antidumping and countervailing duties may have had larger economic effects than imposition of the Section 301 tariffs. In October 2019, for example, Commerce imposed antidumping duties of more than 100 percent on \$4 billion of imports of wooden cabinets and vanities from China. These products were also found on List 3 of the Section 301 tariffs. Those List 3 tariff actions of 10 percent on September 24, 2018, increased to 25 percent in June 2019, pale in comparison with antidumping duties of more than 100 percent.

³⁹ See Chad P. Bown, "Trump Says China Is Not a Market Economy. That's a Big Deal," *Washington Post (Monkey Cage)*, December 12, 2016.

⁴⁰ See Bryce Baschuk, "China Loses Landmark WTO Dispute against EU," *Bloomberg*, June 16, 2020.

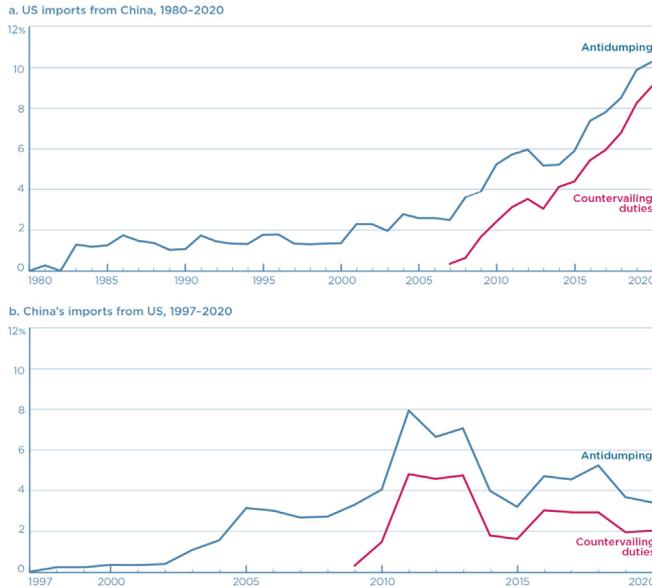


Fig. 5. US and Chinese bilateral imports subject to antidumping and countervailing duties, 1980–2020.

Note: Share of bilateral imports. US calculations done at the ten-digit Harmonized Tariff Schedule level. China's calculations done at the six-digit Harmonized System level. Share of imports covered by antidumping and countervailing duties cannot simply be added because many of the duties are redundant, applying simultaneously to the same imported product. Source: Author's calculations based on author's updates to the World Bank's Temporary Trade Barriers Database using the methodology described in Bown (2011).

Trump's other tariffs likely created conflicting incentives for US industry's use of trade remedies. Domestic industry demand for antidumping and countervailing duties against China over 2018–20 may have been lower than otherwise, squeezed out by the administration's application of other (especially Section 301) tariffs. But the fact that the administration's other tariffs disproportionately focused on intermediate inputs—steel, aluminum, as well as the Section 301 tariffs (see Fig. 2)—may have created demands for “cascading” protection, whereby downstream industries requested more tariffs through trade remedies than they otherwise would have.⁴¹ Indeed, the United States' extension of its Section 232 tariffs to cover steel- and aluminum-using products in January 2020 was implicit recognition that its steel and aluminum tariffs had made it more costly for those downstream products to compete with imports.

The Trump administration also made regulatory and institutional adjustments to the US process for using trade remedies, some of which may continue under future administrations. For the first time in decades, the United States began to self-initiate investigations under these laws. And in April 2017, in a review of a previous antidumping duty imposed on steel products from South Korea, the Commerce Department also resorted to a relatively new provision—the “particular market situation”—and increased the estimated costs of a South Korean firm, alleging that its reported inputs were priced too low because it was using subsidized hot-rolled steel from China. (White House official Peter Navarro had sent a letter to Secretary Ross urging him to intervene⁴²).

⁴¹ See Bown (2020b) and Erbahar and Zi (2017).

⁴² See Adam Behsudi, “Commerce Takes ‘Unprecedented’ Step in Trade Case,” *Politico* April 12, 2017.

In 2019, the Court of International Trade reversed that decision, but it did not stop Commerce from deploying the approach elsewhere.

The Trump administration also implemented the regulatory decision that an undervalued currency, including the renminbi, could be treated as a countervailable subsidy. (It also allowed the Commerce Department to make the critical undervaluation decision, one the Treasury Department historically made in other policy settings⁴³). The first case, in November 2020, involved imported tires from Vietnam; the second, which followed on its heels, affected twist ties imported from China. Given long-standing concerns about China's currency practices, allowing policymakers to treat undervalued currency as a subsidy had the potential to significantly affect future US use of countervailing duties.

Although the effects were less economically consequential, China continued its own antidumping and countervailing duty use during 2017–20 (see Fig. 5). It imposed preliminary duties on \$1 billion of US sorghum in April 2018. It later removed them, but the negative trade effects persisted, as China simply placed sorghum on one of the lists of products over which it imposed counter-tariffs during the trade war. Over the course of 2017–20, China also imposed antidumping and anti-subsidy tariffs on chemical products from the United States. (It also removed some duties in 2019 on cellulose pulp imports from the United States that had been in effect since 2013).

6. Implications of product exclusions and trade remedies for US and China tariffs

Combining tariff data with information on applied antidumping and countervailing duties or product exclusions complicates assessment of the restrictiveness of US and Chinese trade policy toward one another over the course of the trade war. Inclusion of antidumping duties, for example, increases the pre-trade war level of protection and changes in it over time (Fig. 6).⁴⁴ Including antidumping increases the average US tariff toward China in January 2018 from 3.1 percent to 8.4 percent. It raises the average US tariff on China—inclusive of the trade war escalation arising from the other tariffs—from 19.3 percent to 26.7 percent by the end of 2020. China tends to apply antidumping duties at lower rates. Including antidumping increases China's January 2018 starting-point tariff from 8.0 percent to 8.5 percent; the end-point average duty increases only slightly, from 20.7 percent to 21.2 percent.

Ignoring the use of trade remedies, the product exclusions would have the effect of de facto reducing the average tariff. For example, had the United States applied the Section 301 product exclusions permanently and immediately, the average US tariff on imports from China would have ended up at only 18.8 percent, not 19.3 percent, in January 2021. Had China done so, its average tariff toward US exports would have ended up at only 19.3 percent, not 20.7 percent.

Finally, the multiple statutory forms of US and Chinese special tariffs on imports from one another resulted in some products being covered by additional import duties applied at the same time. As of January 2021, more than two-thirds of US imports from China were covered by one form of special tariff or another, beyond the standard applied MFN tariff (Fig. 7).⁴⁵ Some steel and

⁴³ See the concerns raised by Bergsten and Gagnon (2019).

⁴⁴ These estimates do not include countervailing duties. For an antidumping and countervailing duty applied to the same exporter, the size of the countervailing duty has to subtract out the component of the antidumping duty associated with export subsidies. The average US tariff on imports from China would have been higher than shown in Fig. 6 had both antidumping and countervailing duties been included.

⁴⁵ The trade coverage estimates for antidumping (and countervailing duties) in Figs. 5 and 7 differ because different methodological approaches were used in each. Fig. 5 uses the approach in Bown (2011), in order not to down-weight

a. US tariffs on China



b. China's tariffs on US



Fig. 6. US and Chinese average bilateral tariffs, inclusive of antidumping duties and product exclusions, January 2018–January 2021.

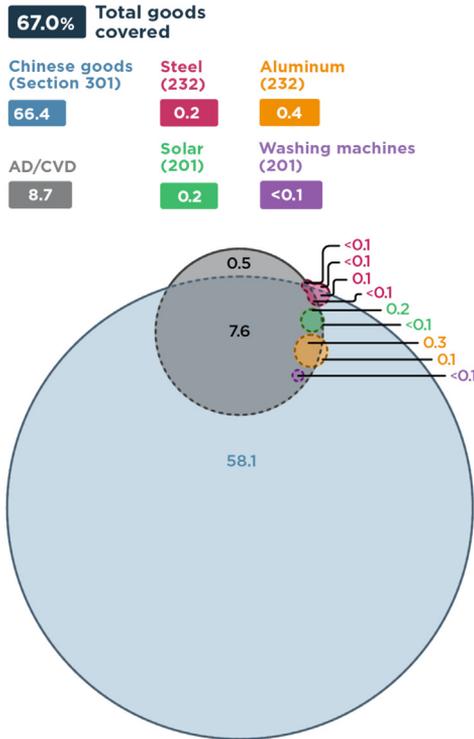
Note: Trade-weighted average tariffs computed from product-level (six-digit Harmonized System) tariff and trade data, weighted by exporting country’s exports to the world in 2017.

Sources: Constructed by the author with data from Trade Map and Market Access Map (International Trade Centre), China’s Ministry of Finance announcements, USTR announcements, and author’s updates to the World Bank’s Temporary Trade Barriers Database.

aluminum imports, for example, were covered by three different sets of US special tariffs—i.e., antidumping duties, Section 232 national security tariffs, and Section 301 tariffs. Solar panels and washing machines were covered by a different set of three policies—antidumping duties, Section 201 safeguard tariffs, and Section 301 tariffs. On China’s side, nearly 60 percent of its imports from the United States as of January 2021 were also covered by at least one set of Chinese special

import shares once the duty went into effect. Fig. 7 simply matches products with antidumping (and countervailing) duties in effect in January 2021 with the 2017 import statistics, for consistency with the trade coverage measures of the other tariffs described in the figure.

a. US imports from China covered by special tariffs in effect as of January 2021



b. Chinese imports from US covered by special tariffs in effect as of January 2021

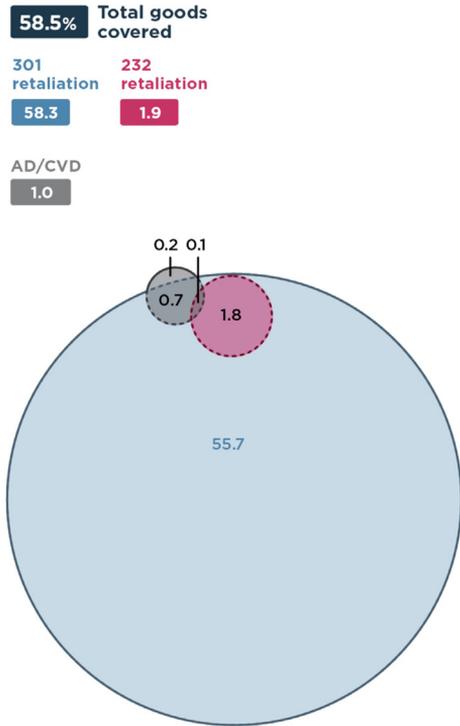


Fig. 7. US and Chinese bilateral imports covered by one or more special tariffs in effect as of January 2021. Note: Share of US imports from China (panel a) and of Chinese imports from US (panel b) in 2017 covered by special tariffs in effect as of January 2021. AD/CVD = Antidumping and countervailing duties, 201 = Section 201, 232 = Section 232, and 301 = Section 301. Estimates for AD/CVD coverage differ from Fig. 5 estimates due to methodological differences. Numbers may not sum to total due to rounding. Sources: Constructed by the author.

tariffs, with some products also facing multiple sets of duties.⁴⁶ Any policy negotiation, statutory requirement, or economic modeling counterfactual that removed only one set of US or Chinese special tariffs could potentially have little impact on trade, given others that also impede imports of that product.

7. The US–China Phase One agreement

On January 15, 2020, the United States and China signed the Phase One agreement.⁴⁷ Its 91 pages included chapters addressing intellectual property protection, technology transfer, trade in

⁴⁶ For example, of the 58.3 percent of Chinese imports from the United States covered by retaliation to Section 301 actions in figure 7, 0.7 percent were also covered by only another antidumping duty, 1.8 percent were also covered by only retaliation for the US Section 232 tariffs, 0.1 percent were covered by both antidumping and the Section 232 retaliation, and 55.7 percent were covered by the Section 301 retaliation alone.

⁴⁷ The agreement, announced on December 13, 2019, was formally known as the “Economic and Trade Agreement between the United States of America and the People’s Republic of China: Phase One.”

food and agricultural products, some new market access in China for financial services, exchange rates and transparency, and a government-to-government enforcement mechanism that could result in unilaterally determined trade sanctions if one side did not live up to the agreement.

When implementing the agreement, on February 14, 2020, both the United States and China voluntarily cut in half the last round of tariff escalation imposed in September 2019. (The United States, for example, reduced tariffs from 15.0 to 7.5 percent on \$101 billion of imports covered on List 4A). However, all of the other tariffs remained in effect (see Fig. 1), and there was no other mention of “tariffs” in the Phase One agreement, including even the Valentine’s Day cuts. The result was the US Section 301 tariffs continued to cover an estimated \$335 billion, or 66 percent of Chinese imports, and Beijing’s counter-tariffs were applied on \$90 billion, or 58 percent of its imports from the United States. This oddity was often overlooked, given the emphasis on Chapter 6 of the agreement—China’s legally binding commitment to purchase an additional \$200 billion of US goods and services over 2020 and 2021.

On February 17, 2020, China’s Ministry of Finance did establish a separate process by which Chinese companies could submit requests for an exemption from paying the considerable counter-tariffs that remained on many different products despite the Phase One agreement (see again Fig. 3). Shortly thereafter, the Chinese government reportedly began to grant exemptions to Chinese companies to purchase products like soybeans, as the trade data would later confirm.⁴⁸ But how many product-level tariff exemption requests were made; which were accepted; by what firms in what industries; and what affected those decisions (whether, for example, Chinese state-owned enterprises or private firms were more likely to apply and have their requests granted) remained unclear. This outcome—in which the Trump administration signed off on a system in which the Chinese government would have final say on potential purchases of imports from the United States—was also at odds with broader US government concerns that China’s economy was too state-driven.⁴⁹

7.1. Origins and optics of the purchase commitments

The Trump administration’s demand for a voluntary Chinese import expansion—purchase commitments—was described by US officials as consistent with its stated goal of cutting the trade deficit with China. In an on-the-record briefing to reporters on December 13, 2019 when USTR Lighthizer described the agreement’s details, he said that the purchase commitments of \$200 billion were designed to reduce the trade deficit, and that other provisions in the deal would have the same effect. He added, “and there are tariffs that will be in place, so we expect the trade deficit to go down, for sure.”⁵⁰

By the administration’s math, China increasing its purchases by an average of \$100 billion a year (in 2020 and in 2021) would reduce the annual bilateral trade deficit by \$100 billion. Its logic was that by also maintaining US tariffs on nearly two-thirds of bilateral imports (see again Fig. 1), US import growth from China would flatten, or possibly even fall, reducing the bilateral deficit even further.

⁴⁸ See [Ministry of Finance \(2020\)](#) and Hallie Gu and Naveen Thukral, “China Grants Duty Exemption on US Soybean Imports: Sources,” *Reuters*, March 6, 2020.

⁴⁹ See the analysis provided in [Bown and Lovely \(2020\)](#).

⁵⁰ Lighthizer comments are from the transcript of an on-the-record briefing for trade journalists. The transcript was not published by USTR but made available to the author and checked with a recording of the session.

Politically, reference to “\$200 billion” (over two years) rather than \$100 billion each year also carried the benefit of being a bigger number to campaign on during the upcoming election season. Indeed, shortly after signing the agreement, President Trump boasted in a speech at Davos that China’s additional purchases resulting from the deal “could be closer to \$300 billion when it finishes.”

But the purchase commitments nevertheless proved controversial from the start.⁵¹ In that same press briefing describing the deal in December 2019, Lighthizer had refused to release details of product-specific targets to reporters, stating “Our judgment is that to make those things public, the subcategories could have a market impact, which is not in anyone’s interest. But we’ll have them and we’ll keep them in the classified document.” But he indicated he was also concerned that excessive attention would be placed on the purchases themselves, saying “If I give you too much, that’s all you’ll write about.”

He was right about one thing. As expected, the purchases were all that anyone wrote about, especially once the monthly trade data revealed that China was not on pace to meet the commitments. In a hearing before the Senate Finance Committee on June 17, 2020, Lighthizer was pressed by Senators Ron Wyden (D-OR) and Maria Cantwell (D-WA) about a monthly report published by the Peterson Institute documenting the state of China’s purchases to date under the Phase One agreement, and he dismissed the data.⁵² He referred to the report as a “thing” published by the Peterson Institute, which “I would suggest has a very, very failed methodology.” It was not clear what he was criticizing about the methodology, which was actually quite transparent. It simply used official, publicly available, monthly Chinese import and US export statistics (see Fig. 8).⁵³ “[I]t’s a complicated thing,” Lighthizer claimed, “and they have a childish methodology,” suggesting that a more sophisticated approach than simply adding up the monthly data was required.

There was nothing unique to that approach. By July, even the US Census was directly providing monthly statistics on US exports covered by the Phase One agreement separate from, and prior to, its normal monthly trade data release.⁵⁴ The Census statistics told the same story: China was never on pace to reach the 2020 purchase commitments set out in the Phase One agreement.

Less than two weeks before the presidential election, the USTR and the Department of Agriculture released the Trump administration’s own, much rosier, assessment of China’s projected purchases of a select few agricultural products.⁵⁵ The administration report relied on projected sales volumes and made assumptions about future prices, none of which were relevant to the legal commitments in the agreement. The October 2020 report also failed to mention manufacturing or energy, products which together made up 78 percent of the value of the purchase commitments. US exports of those products were performing much worse than agriculture.

⁵¹ See, for example, Bown (2020c) and Soumaya Keynes, “The Costs of America’s Lurch towards Managed Trade,” *The Economist*, January 25, 2020.

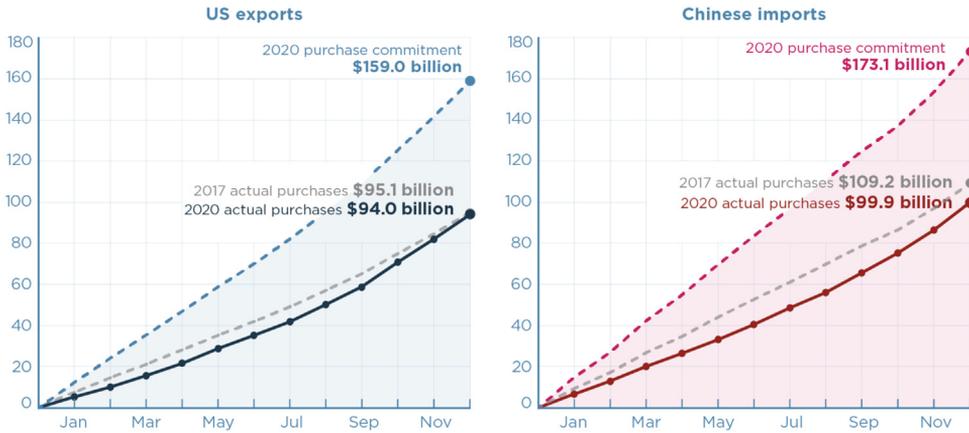
⁵² US Senate Committee on Finance, The President’s 2020 Trade Policy Agenda. The Full Committee Hearing, June 17, 2020 (<https://www.finance.senate.gov/hearings/the-presidents-2020-trade-policy-agenda>). Lighthizer’s response is at 1:13:35. See also the C-Span transcript (<https://www.c-span.org/video/?473090-1/us-trade-representative-2020-trade-policy-agenda>).

⁵³ The monthly report published by the Peterson Institute (Bown, 2021c), reproduced as Fig. 8, also made clear that “prorating the 2020 year-end targets to a monthly basis is for illustrative purposes only. Nothing in the text of the agreement indicates China must meet anything other than the year-end targets.”

⁵⁴ See US Census (2020). The first release, on July 27, 2020, contained the June 2020 US export data. See also Waugh (2020) as well as periodic reports from the Farm Bureau’s Chief Economist John Newton (Newton, 2020).

⁵⁵ See USTR and USDA (2020). Bown (2020d) presents the data that were available about the purchase commitments as of the November presidential election.

a. China's purchases of US goods in 2020 relative to 2017 and the phase one purchase commitments for covered products, billions USD



b. China's purchases of US goods in 2020 relative to 2017 for uncovered products, billions USD

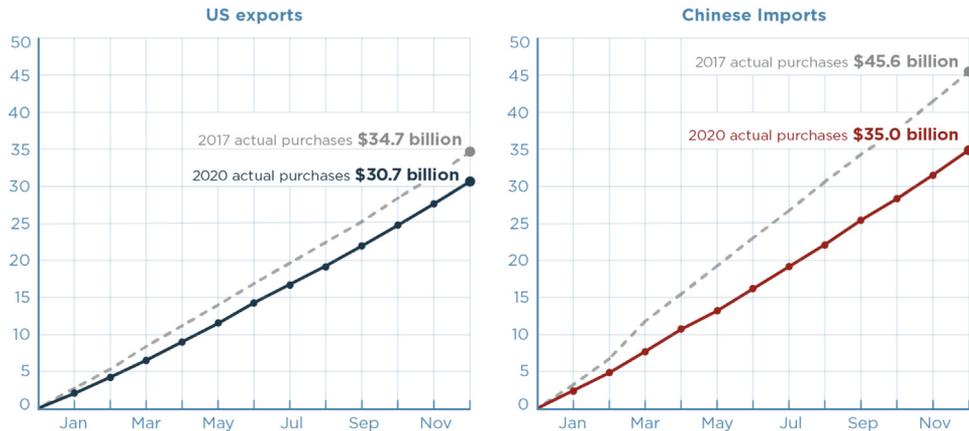


Fig. 8. China's purchases of US goods in 2020 and the Phase One agreement.
 Note: "Uncovered" products refer to China's imports from the United States not addressed in Annex 6.1 of the Phase One agreement. Prorating the 2020 year-end commitment to a monthly basis is for illustrative purposes only; nothing in the agreement indicates that China must meet anything other than the year-end target. Monthly purchase targets are seasonally adjusted based on 2017 data.

Sources: Constructed by the author with US export data from US Census, Chinese import data from International Trade Centre (Trademap) for 2017 and from Chinese customs for 2020, and product categories set out in Annex 6.1 of the Phase One agreement.

7.2. China's purchases after one year of the Phase One agreement

Before examining China's purchases relative to the legal agreement's commitments for 2020, it is important to put the numbers into broader context.⁵⁶ With the pandemic, US GDP contracted

⁵⁶ This section draws from Bown (2021a). See the appendix for the precise methodological approach of mapping the legal agreement to trade flows. All of the data are in current dollars, per the terms of the legal agreement. For specific

by 3.5 percent. China's economy grew by 2.3 percent in 2020, a much lower rate than the pre-pandemic forecasts of roughly 6 percent.

The pandemic also affected trade flows. It took until June for China's imports to reach pre-pandemic levels; the rest of the world's trade took until near the end of 2020 to recover (CPB, 2021). Nevertheless, China's imports from the United States of the products covered by the purchase commitments were higher in 2020 than in 2019. China's import growth of those same products from the rest of the world was only flat during that period.

Evaluating compliance with the legal terms of the Phase One agreement required comparing 2020 with 2017, however, not 2019. Because the trade war tariffs decimated bilateral trade in 2018 and 2019, the agreement's legal provisions committed China to purchase an additional \$200 billion of US goods and services split over 2020 and 2021 on top of 2017 levels. China committed to purchase no less than an additional \$63.9 billion of covered goods from the United States by the end of 2020 relative to 2017. The legal terms of the agreement implied that either Chinese import or US export data could be used. Given that 2017 baseline levels were different depending on the series used, the 2020 targets were different as well (see Fig. 8). In 2020, China would need to purchase \$159.0 billion of US exports, or \$173.1 billion when measured as Chinese imports.

China's purchases in 2020 did not get close under either metric. For covered products, its imports from the United States were 42 percent lower than Phase One agreement commitment. Relying on US export data, China's purchases were 41 percent lower. China's purchases of covered products in 2020 did not even reach 2017 levels.

Exports of products not covered by the legal agreement performed even worse (see again Fig. 8). Oddly, the purchase commitments in the Phase One agreement had not covered 27 percent of US goods exports to China (29 percent of China's goods imports from the United States) in 2017. China had little incentive to buy these products from the United States in 2020, as the purchase commitments would not be credited.

Why the Trump administration chose not to also cover those products with purchase commitments remained a mystery. Perhaps it viewed them as unimportant—indeed, 9 of the top 20 uncovered products by value included words like *waste* or *scrap* or *not elsewhere specified* or *indicated* in their descriptions. But for an administration focused on reducing the bilateral trade deficit, any export increase in covered products would simply be offset one-for-one by declines in uncovered exports.

7.2.1. Manufacturing

Manufactured products were the biggest economic part of the Phase One agreement, making up 70 percent of goods covered by the purchase commitments. In nominal terms, US manufacturing sales to China had nearly doubled between 2009 and 2017 (Fig. 9). The trade war helped put an end to that. US exports to China flattened in 2018 before falling by 11 percent in 2019. During the first year of the Phase One agreement, they continued to suffer, declining another 5 percent. Overall, they fell 43 percent short of the legal commitment in 2020, remaining more than 14 percent below pre-trade war levels.

The US auto sector provided a cautionary tale of how even temporary trade war tariffs could have potentially long-lived effects. By 2017, China had become the second-largest export market

products, Phase One targets are only estimates, apportioned as the share of that product in total US goods exports to China in 2017 covered by the purchase commitments. As the quotation from Lighthizer indicates, neither the United States nor China made targets publicly available at a more disaggregated level than manufacturing, agriculture, energy, or services.

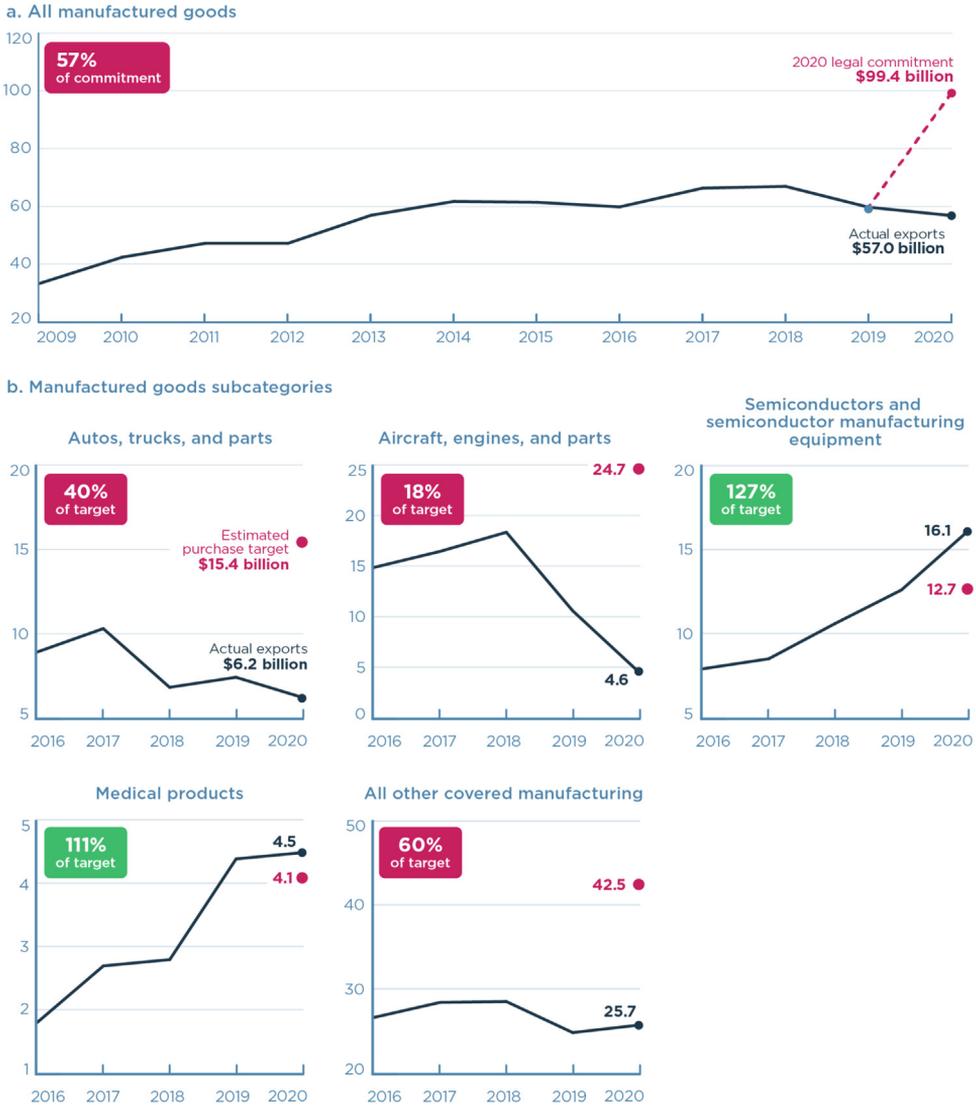


Fig. 9. US manufacturing exports to China covered by the Phase One agreement, billions USD.
 Note: Product categories covered by the “2020 legal commitment” are set out in Annex 6.1 of the Phase One agreement. “Estimated purchase targets” constructed by apportioning based on the share of that product in total US exports to China in 2017 of goods covered by the purchase commitments. The US-China trade war began in July 2018; the Phase One agreement was signed in January 2020.
 Source: Constructed by the author with data from US Census.

for American vehicles. As a result of the events of July 2018—the US tariff on parts, China’s imposition of a 25 percent retaliatory tariff on US autos and its simultaneous lowering its auto tariff on imports from the rest of the world—US auto exports to China fell by more than a third (see Fig. 9). Tesla reported that it was accelerating construction of a new plant in Shanghai in late 2018, indicating that Trump’s tariffs on auto parts and China’s retaliation on cars, as well

as the resulting uncertainty, had made it uncompetitive for the electric vehicle maker to export to China from the United States. For similar reasons, BMW shifted production of some models destined for China out of South Carolina. By the end of 2020, US exports had still not recovered to pre-trade war levels.⁵⁷

Aircraft also underperformed in 2020, but for different reasons. China did not retaliate against aircraft during the trade war, and China has historically been a large export market for Boeing. Following two crashes of Boeing's 737 MAX airplane, the model was grounded between March 2019 and December 2020, and Boeing shut down production between January and May 2020. US aircraft sales to China declined from more than \$18 billion in 2018 to less than \$11 billion in 2019. In April 2020, China cancelled purchase orders for undelivered planes. US exports in 2020 ended up at only \$4.6 billion, less than a fifth of the estimated target.⁵⁸

Other sectors performed better than expected in 2020. Semiconductors and semiconductor manufacturing equipment exports, for example, outperformed their targets, but likely also for reasons unrelated to the purchase commitments. In 2019 and 2020, the United States announced that it would begin imposing export limits on semiconductors and semiconductor manufacturing equipment for national security reasons. Major Chinese buyers such as Huawei and SMIC reportedly stockpiled in 2020, anticipating that US export control policy would soon cut them off.⁵⁹

US sales of medical products to China also performed well in 2020. But the likely explanation was increased Chinese demand caused by the pandemic, not the purchase commitments.

7.2.2. Agriculture

China had been an important market for US agricultural exports long before the trade war. Those exports peaked in 2012–14, a period of high commodity prices, including for corn and wheat. For the product categories ultimately covered by the purchase commitments, 14 percent of US agricultural exports to the world in 2017 went to China.

Like manufacturing exports, US agricultural sales to China were devastated during the trade war. Exports were cut in half in 2018, with 2019 levels remaining nearly 30 percent lower than in 2017 (Fig. 10). But unlike in the manufacturing sector, the Trump administration paid tens of billions of dollars of subsidies to farmers of selected crops in 2018 and 2019. Data from the Department of Agriculture showed that farm income, inclusive of government payments, was 11 percent higher in 2019 than in 2017, achieving its highest level since 2014.

China ramped up farm purchases in 2020; by September, it was back on pace to reattain 2017 levels.⁶⁰ Nevertheless, US agricultural exports ended up both 18 percent short of the 2020 legal commitment and considerably lower than the Trump administration's political aspirations. The purchase commitments were supposed to have been just a start. When announcing the deal, the

⁵⁷ On Tesla, see the company's 2019 Annual Report and Michael Sheetz, "Tesla Says It's Getting Slammed in China Because of Tariffs, Cars Cost 60% More Than Competitors," *CNBC*, October 2, 2018. BMW shifted production of its X3 sport utility vehicle, one of the top models of US manufactured autos exported to China before 2018, from Spartanburg, South Carolina to China. See Oliver Sachgau, "BMW Production Shift to China Pays Off with Jump in X3 Sales. Making the Vehicle Locally Helps Avoid a 15% Chinese Import Tariff," *Bloomberg*, June 13, 2019, and Nathan Bomey, "20 American-Made Cars That Could Benefit from China's Promise to Roll Back Tariffs," *USA Today*, April 10, 2018.

⁵⁸ See *Reuters*, "China's CDB Financial Scraps Purchase of 29 Boeing 737 MAX Jets," April 19, 2020 and Jon Hemmeringer, "Boeing Restarts 737 Max Production," *FlightGlobal*, May 27, 2020.

⁵⁹ For a discussion of these US export controls, see [Bown \(2020e\)](#).

⁶⁰ See the analysis in [Bown \(2020d\)](#).

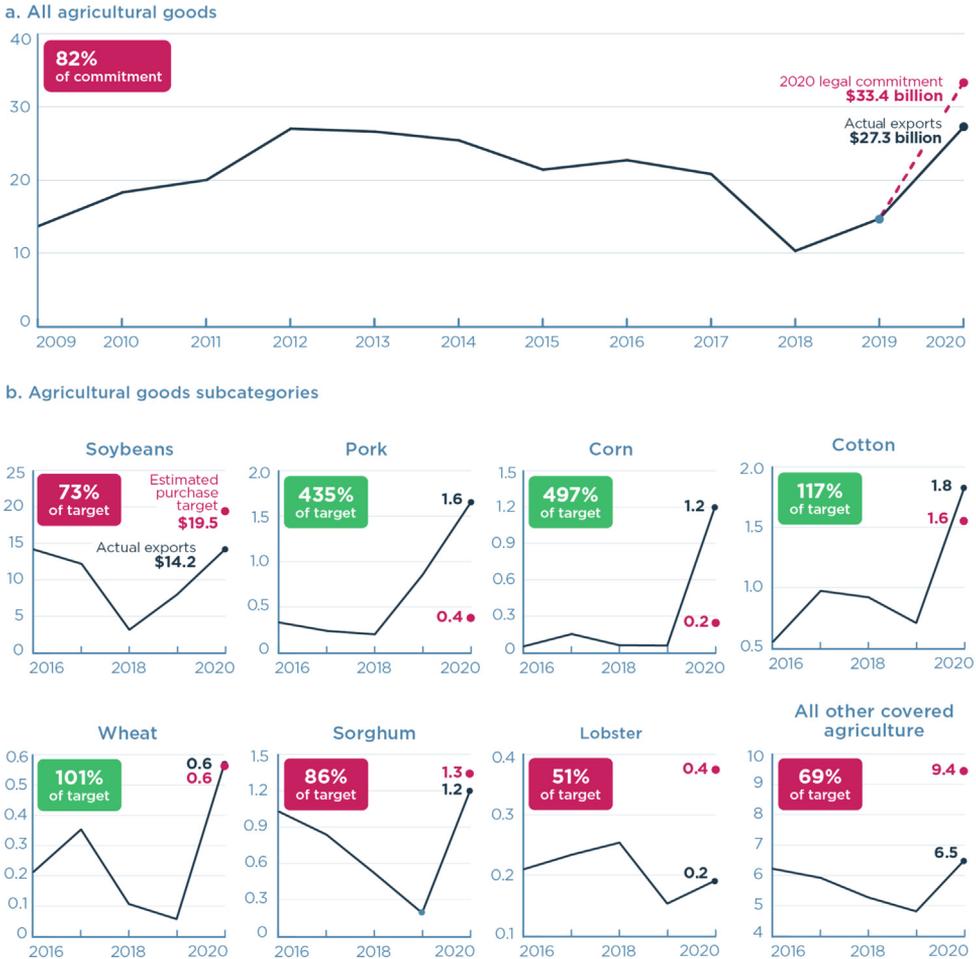


Fig. 10. US agriculture exports to China covered by the Phase One agreement, billions USD.
 Note: Product categories covered by the “2020 legal commitment” are set out in Annex 6.1 of the Phase One agreement. “Estimated purchase targets” constructed by apportioning based on the share of that product in total US exports to China in 2017 of goods covered by the purchase commitments. The US-China trade war began in July 2018; the Phase One agreement was signed in January 2020.
 Source: Constructed by the author with data from US Census.

administration boasted that China would actually “strive” to buy \$5 billion more farm products a year on top of those already hefty legal commitments.⁶¹

Soybeans represented nearly 60 percent of US farm exports to China before the trade war and were one of the first products China hit with 25 percent retaliatory tariffs. US exports fell from \$12 billion in 2017 to \$3 billion a year later, as China shifted purchases toward Brazil and Argentina.

⁶¹ See Reuters, China to Buy Additional \$32 Billion in US Farm Goods over Two Years, Sign Deal in January: USTR, December 13, 2019. The legal agreement’s Annex 6.1, footnote b, stated (emphasis added), “At the request of the United States, China will *strive* to purchase and import \$5 billion per year of the US agricultural products covered by this Chapter, *in addition to* the minimum amounts set forth herein.”

Despite President Trump's repeated assurances beginning late in 2018 that China would soon be "back in the market" for the soybeans American farmers were being forced to stockpile in record amounts, 2019 sales remained more than a third lower than sales in 2017. Part of China's 2019 demand reduction for the animal feed was a devastating outbreak of African swine fever, which cut the world's largest pig herd by 40 percent. US soybean exports picked up again only in 2020, reaching pre-trade war levels (though falling short of the estimated target), as the Chinese pig herd recovered.

China began to import more pig meat from the United States in 2019 to address its local pork shortages, even before the Phase One agreement was signed. The shortage was so bad that China's pork imports from the rest of the world in 2020 were more than five times higher than 2017 levels.⁶²

Other US farm exports, including corn and wheat, also outperformed their targets in 2020. Beijing began complying with a 2019 WTO dispute settlement ruling against its unfulfilled tariff rate quotas; China's imports from the rest of the world in 2020 increased by more than 340 percent over 2017 for corn and 280 percent for wheat.⁶³ US cotton sales to China also improved in 2020, and sorghum recovered.

Many other food products did not recover. American lobster exports, for example, remained 18 percent lower in 2020 than 2017. During the trade war, Beijing both imposed tariffs on US lobster and encouraged Chinese consumers to shift to other suppliers by lowering its applied MFN tariff on lobster from Canada and other countries—the same tack it had taken with autos. (China's lobster imports from the rest of the world increased by nearly 250 percent in 2020 over 2017 levels). Maine's lobster industry suffered but was ineligible for the tens of billions of dollars of USDA trade war subsidies paid out in 2018 or 2019. The administration granted it payments only in the run-up to the 2020 election.⁶⁴

7.2.3. Energy

Energy products made up only 8 percent of the goods covered by the purchase commitments, but the scale of its targets was especially questionable. Bloomberg reported that only after the agreement was signed did the administration get a briefing from the US energy industry informing it that there was insufficient American capacity in the short run to meet the targets.⁶⁵ Furthermore, pinning metrics of the US–China trade relationship on significantly scaled-up fossil fuel exports—the targets included only crude oil, liquified natural gas, coal, and refined products—ignored global concerns over climate change mitigation, concerns the Trump administration did not share.

US exports of energy products were the worst-performing of the three categories, reaching only 40 percent of the 2020 commitment (Fig. 11). Low oil prices in 2020 also hampered reaching the export commitments, which the legal agreement had established in dollar, not volume, terms.

⁶² China also agreed to address technical barriers that had previously slowed pork imports (see Chapter 3 of the legal agreement).

⁶³ See Glauber and Lester (forthcoming).

⁶⁴ Jeff Stein and Rachel Siegel, "White House Directs Agriculture Department to Extend Farmer Bailout Money to Lobster Industry," *Washington Post*, June 24, 2020.

⁶⁵ Jennifer A. Dlouhy, Shawn Donnan, and Nick Wadhams, "Big Oil Warned Trump Team China Trade Deal Was Unrealistic," *Bloomberg*, February 12, 2020.



Fig. 11. US energy exports to China covered by the Phase One agreement, billions USD.
 Note: Product categories covered by the “2020 legal commitment” are set out in Annex 6.1 of the Phase One agreement. “Estimated purchase targets” constructed by apportioning based on the share of that product in total US exports to China in 2017 of goods covered by the purchase commitments. The US-China trade war began in July 2018; the Phase One agreement was signed in January 2020.
 Source: Constructed by the author with data from US Census.

8. Human rights, democracy, the tech war, and more

The tariff escalation of the trade war and the Phase One agreement dominated US–China trade headlines over the course of the Trump administration. But US policy toward China changed in other ways that may also have long-lived trade effects. This section briefly describes three: export controls for national security purposes, import bans over concerns with forced labor, and the reclassification of goods from Hong Kong as a result of Beijing’s crackdown on democracy and human rights.⁶⁶

The Trump administration tightened limits on exports to China of semiconductors and semiconductor manufacturing equipment, purportedly for reasons of national security. In May 2019, the United States placed Huawei on the Entity List, implying that American-origin goods and services could no longer be sold to the giant Chinese telecommunications company without an export license. (The legal presumption was that requests for such licenses would be denied). American suppliers were granted a temporary general license—which was extended five times—before it expired in August 2020. In May 2020, the United States extended its export controls to semiconductor manufacturing equipment sold to manufacturers in third countries (such as TSMC in

⁶⁶ A table in the appendix to the working paper version (Bown, 2021b) includes more information on dates of policy changes and announcements of those changes.

Taiwan and Samsung in South Korea), in order to inhibit their ability to manufacture semiconductors for sale to Huawei as well. In December 2020, the United States added SMIC—a giant Chinese semiconductor manufacturer, reported to have been under threat since September—to the Entity List.⁶⁷ The slow roll-out of the US export controls likely contributed to the acceleration of US exports to China of semiconductors and equipment in 2020 (see again Fig. 9), as Chinese firms stockpiled, fearing that they might be cut off from key US suppliers. However, those exports could fall dramatically if and when the export-restricting policy begins to bind.

The United States added other Chinese companies to the Entity List, for different reasons. Some were allegedly involved with surveillance activities, thereby contributing to the repressive treatment of Uyghurs, the Muslim minority in the region of Xinjiang. Others were added for helping the Chinese government construct islands and thus expand their territorial claims in the South China Sea.

The United States also increasingly banned imports from the Xinjiang region of China, out of concerns over forced labor. Starting in September 2019, [US Customs and Border Protection](#) began to issue a series of “withhold release orders” on imported products from companies it alleged were using forced labor. In January 2021, these orders were extended to imports of cotton and tomato products from the entire Xinjiang region. Given the region’s importance in cotton harvesting and China’s textile and apparel industry and related supply chains, these actions have the potential to affect a large share of US imports from China.⁶⁸

As a result of Beijing’s imposition of national security legislation on Hong Kong, in July 2020, the Trump administration issued an Executive Order indicating that the United States would no longer treat trade with Hong Kong as independent from China. In August, [US Customs and Border Protection](#) announced that imported goods produced in Hong Kong must henceforth be marked to indicate “China” as their origin. In principle, this change could mean that the US Section 301 tariffs on China, or antidumping or countervailing duties, applied to firms in China could also be applied to imports from Hong Kong.⁶⁹

Trade was not the only policy channel through which the US–China economic relations deteriorated over 2017–21, of course. Changes in US and Chinese policy also affected foreign portfolio investment, foreign direct investment, and even the movement of people.

9. Conclusion

The Trump administration made significant changes to US trade policy with China. The Chinese government responded in kind. For both sides, the changes were implemented through a number of different policy instruments, many of which are challenging to measure and not captured by traditional trade policy data series.

So much happened, and in such a short period of time, that researchers will be hard at work for years trying to disentangle the implications. This paper has provided detail and data on what

⁶⁷ For a discussion of US export controls and semiconductors, see [Bown \(2020e\)](#). For the September 2020 reports that SMIC would also soon be added to the Entity List, see Dan Strumpf, “US Sets Export Controls on China’s Top Chip Maker,” *Wall Street Journal*, September 28, 2020.

⁶⁸ See [Lehr \(2020\)](#) and [Lehr and Bechrakis \(2019\)](#). As of the time of writing, Congress was considering legislation that could more broadly ban imports from the Xinjiang region.

⁶⁹ As of the time of writing, US Customs and Border Protection had not issued guidance to clarify that such would be the case.

took place, in order to help scholars analyze these actions, their causes, their effects, and their implications.

Appendix A. Phase One Purchase Commitments

Assessing whether China met the phase one targets for goods trade required information from both US export statistics and Chinese import statistics, given that the agreement's Chapter 6, Article 6.2.6 states: "Official Chinese trade data and official US trade data shall be used to determine whether this Chapter has been implemented." This articles means that two sets of data must be tracked—Chinese imports and US exports. It also means that there are two different annual targets, as the 2017 baseline level of Chinese imports differs from the 2017 baseline level of US exports.

The products covered by the purchase commitments are set out at the 4-, 6-, 8-, or 10-digit level in the agreement's Attachment to Annex 6.1. They are then mapped to the US or Chinese trade statistics for 2017 and 2020.⁷⁰

For US goods exports, the agreement is estimated to cover products that made up \$95.1 billion, or 73 percent, of total US goods exports to China (\$129.8 billion) in 2017. Of the 2017 total exports of covered products, \$20.9 billion worth of exports were in agriculture, \$66.5 billion were in manufacturing, and \$7.6 billion were in energy. Products uncovered by the agreement—and thus with no targets for 2020—made up 27 percent (\$34.7 billion) of total US goods exports to China in 2017.

For Chinese goods imports, the agreement is estimated to cover products that made up \$109.2 billion, or 71 percent, of total Chinese goods imports from the United States (\$154.9 billion) in 2017. Of the 2017 total imports of covered products, \$24.1 billion were in agriculture, \$78.3 billion were in manufacturing, and \$6.8 billion were in energy. Uncovered products made up 29 percent (\$45.6 billion) of total Chinese goods imports from the United States in 2017.

For both the US export data and the Chinese import data, the 2020 phase one targets of additional trade (on top of 2017 baseline) are \$12.5 billion (agriculture), \$32.9 billion (manufactured goods), and \$18.5 billion (energy). These targets are set forth in the agreement's Annex 6.1.

In the figures, each month's purchase commitment target is seasonally adjusted to reflect that month's relative weight for covered products in the 2017 trade data. Prorating the 2020 year-end targets to a monthly basis is strictly for illustrative purposes. Nothing in the text of the agreement indicates China must meet anything other than the year-end targets.

Estimates for 15 separate product categories were made, as in appendix [Table A1](#), because the agreement provides only aggregate targets for the four industries of manufacturing, agriculture, energy, and services. Product-level targets were apportioned based on the share of each product in total US exports to China in 2017 of goods covered by the purchase commitments.

⁷⁰ The analysis presented here deviates from the text of the agreement in one respect: It includes US export product 8800 (in addition to 8802, aircraft) in "covered manufacturing," shifting it out of the "uncovered" category.

Table A1
Product definitions used in figures 3, 9, 10, 11.

Product	US exports as percent of total covered goods exports to China in 2017	China's target as percent of total covered goods target in 2020	Schedule B codes
<i>Total covered manufacturing</i>	70.0	62.5	
Aircraft, engines, parts	17.4	15.5	8800, 8411
Autos, trucks, parts	10.9	9.7	8703, 8704
Semiconductors and semiconductor manufacturing equipment	8.9	8.0	8486, 8541, 8542
Medical products ^a	2.9	2.6	2804400000, 2847000000, 3002130000, 3002140000, 3002150000, 3002190000, 3002200000, 3003100000, 3003200000, 3003900100, 3004101020, 3004101045, 3004105045, 3004105060, 3004200020, 3004200060, 3004490060, 3004600000, 3004901000, 3004909210, 3004909285, 3004909290, 3005100000, 3005900000, 3006700000, 8419200000, 8419390180, 9018113000, 9018118000, 9018120000, 9018194000, 9018195500, 9018197500, 9018310040, 9018310080, 9018310090, 9018320000, 9018390030, 9018903000, 9018907080, 9018908000, 9019200000, 9020008000, 9022120000
All other covered manufacturing	29.9	26.7	
<i>Total covered agriculture</i>	22.0	21.0	
Soybeans	12.9	12.3	1201
Pork	0.2	0.2	0203
Corn	0.2	0.2	1005
Cotton	1.0	1.0	5201
Lobster	0.2	0.2	0306, 1605
Wheat	0.4	0.4	1001
Sorghum	0.9	0.8	1007
All other covered agriculture	6.2	5.9	
<i>Total covered energy</i>	8.0	16.5	
Crude oil	4.6	9.4	2709
Liquified natural gas	0.4	0.9	271111
Coal	0.4	0.9	2701
Refined energy products	2.6	5.3	2710122500, 271112, 271113, 2711190020, 271311, 271312, 290511

Note: Figures are estimated based on the methodology described in the appendix A.

^a Products are defined by the USITC (2020) Covid-19 Related Goods: US Imports and Tariffs, with Harmonized Tariff Schedule codes converted to Schedule B codes.

References

Amiti, M., Redding, S., & Weinstein, D. (2019). The impact of the 2018 trade war on US prices and welfare. *The Journal of Economic Perspectives*, 33(4), 187–210.

- Amiti, M., Redding, S., & Weinstein, D. (2020). Who's paying for the US tariffs? A longer-term perspective. *American Economic Association Papers and Proceedings*, 110, 541–546.
- Baker, S., Bloom, N., & Davis, S. (2019). *The extraordinary rise in trade policy uncertainty*. VoxEU.org. September 17
- Bergsten, C. F., & Gagnon, J. E. (2019). Comments on proposed modification of regulations for countervailing duty proceedings. In *PIIE testimony*. Washington: Peterson Institute for International Economics. June 25.
- Blustein, P. (2019). *Schism: China, America, and the fracturing of the global trading system*. Waterloo, Canada: Center for International Governance Innovation.
- Bown, C. P. (2011). Taking stock of antidumping, safeguards and countervailing duties, 1990–2009. *The World Economy*, 34(12), 1955–1998.
- Bown, C. P. (2018). Trump's steel and aluminum tariffs are counterproductive. Here Are 5 more things you need to know. *PIIE Trade and Investment Policy Watch*, March 7.
- Bown, C. P. (2020a). Trump's trade policy is hampering the US fight against COVID-19. *PIIE Trade and Investment Policy Watch*, March 13.
- Bown, C. P. (2020b). Trump's steel and aluminum tariffs are cascading out of control. *PIIE Trade and Investment Policy Watch*, February 5.
- Bown, C. P. (2020c). Unappreciated hazards of the US–China phase one deal. *PIIE Trade and Investment Policy Watch*, January 21.
- Bown, C. P. (2020d). Trump's phase one trade deal with China and the US election. *PIIE Trade and Investment Policy Watch*, October 27.
- Bown, C. P. (2020e). How the United States marched the semiconductor industry into its trade war with China. *East Asian Economic Review*, 24(4), 349–388.
- Bown, C. P. (2019a). The 2018 US–China trade conflict after 40 years of special protection. *China Economic Journal*, 12(2), 109–136.
- Bown, C. P. (2019b). Trump's fall 2019 China tariff plan: Five things you need to know. *PIIE Trade and Investment Policy Watch*, August 14.
- Bown, C. P. (2021a). The US–China trade war and Phase One agreement. In *PIIE working paper*. Washington: Peterson Institute for International Economics. February.
- Bown, C. P. (2021b). Anatomy of a flop: Why Trump's US–China 'Phase one' trade deal fell short. *PIIE Trade and Investment Policy Watch*, February 8.
- Bown, C. P. (2021c). US–China phase one tracker: China's purchases of US goods (as of December 2020). *PIIE Chart*, February 7.
- Bown, C. P., & Keynes, S. (2020a). Why trump shot the sheriffs: The end of WTO dispute settlement 1.0. *Journal of Policy Modeling*, 42(4), 799–819.
- Bown, C. P., & Keynes, S. (2020b). Ins and outs of the US–China phase-one trade deal. *Trade Talks*, Episode 118, January 18.
- Bown, C. P., & Kolb, M. (2021). Trump's trade war timeline: An up-to-Date guide. *PIIE Trade and Investment Policy Watch*, Accessed January 20, 2021.
- Bown, C. P., & Lovely, M. E. (2020). Trump's phase one deal relies on China's state-owned enterprises. *PIIE Trade and Investment Policy Watch*, March 3.
- Bown, C. P., & Li, H. (Forthcoming). The Trump-China Tariff War and the Product Exclusions Mess. Washington: Peterson Institute for International Economics.
- Brunk, J., McDaniel, C., & Parks, D. (2019). *Steel and aluminum tariffs: Thousands of exclusion requests from US firms*. Fairfax, VA: Mercatus Center, George Mason University.
- Cavallo, A., Gopinath, G., Neiman, B. & Tang, J. (Forthcoming). Tariff Passthrough at the Border and at the Store: Evidence from US Trade Policy, *American Economic Review: Insights*.
- CPB. (2021). *World trade monitor*. CPB Netherlands Bureau for economic policy analysis Accessed February 7, 2021.
- Davis, B., & Wei, L. (2020). *Superpower showdown: How the battle between Trump and xi threatens a new cold war*. New York: Harper Collins.
- Erbahar, A., & Zi, Y. (2017). Cascading trade protection: Evidence from the US. *Journal of International Economics*, 108(C), 274–299.
- Fajgelbaum, P. D., Goldberg, P. K., Kennedy, P. J., & Khandelwal, A. K. (2019). The return to protectionism. *The Quarterly Journal of Economics*, 135(1), 1–55.
- Fetzer, T. & Schwartz, C. (Forthcoming). Tariffs and Politics. Evidence from Trump's Trade Wars, *Economic Journal*.
- Flaaen, A., & Pierce, J. R. (2019). *Disentangling the effects of the 2018–2019 tariffs on a globally connected US manufacturing sector*. FEDS Working Paper 2019-086, Washington: Federal Reserve Board.

- Flaaen, A., Langemeier, K. & Pierce, J. R. (Forthcoming). *Factors Affecting Recent US Tariffs on Imports from China*. FED Notes, Washington: Federal Reserve Board.
- Glauber, J., & Lester, S. (Forthcoming). China–Tariff Rate Quotas for Certain Agricultural Products: Against the Grain: Can the WTO Open Chinese Markets? *World Trade Review*.
- Handley, K., Kamal, F., & Monarch, R. (2020). *Rising import tariffs, falling export growth: When modern supply chains meet old-style protectionism*. NBER Working Paper 26611.
- Hufbauer, G. C. (2016). Could a president trump shackle imports? In *Assessing trade agendas in the US presidential campaign*. PIIE Briefing 16-6, September.
- Hufbauer, G. C., & Lu, Z. (2019). *The USTR tariff exclusion process: Five things to know about these opaque handouts*, PIIE trade and investment policy watch December 19.
- Lardy, N. R. (2014). *Markets over Mao: The rise of private business in China*. Washington: Peterson Institute for International Economics.
- Lardy, N. R. (2019). *The state strikes back: The end of economic reform in China?* Washington: Peterson Institute for International Economics.
- Lehr, A. K. (2020). *Addressing forced labor in the Xinjiang Uyghur Autonomous Region: Toward a shared agenda*. CSIS briefs, July 30. Washington: Center for Strategic and International Studies.
- Lehr, A. K., & Bechrakis, E. M. (2019). *Connecting the dots in Xinjiang: Forced labor, forced assimilation, and western supply chains*. Report of the CSIS human rights initiative, October 16. Washington: Center for Strategic and International Studies.
- Ministry of Finance. (2020). *Announcement of the customs tariff commission of the state council on carrying out the exclusion of market-based purchases of commodities subject to tariffs on the United States and Canada*. Taxation Commission Announcement (2020). No. 2, February 17.
- Newton, J. (2020). *US-china phase I tracker for agriculture products*. Twitter. June 16.
- OIG (Office of Inspector General). (2019). *Management alert: Certain communications by department officials suggest improper influence in the section 232 exclusion request review process*. October 28. Washington: Department of Commerce.
- US Census. (2020). *Preliminary: US exports to China of selected schedule B commodities for monitoring the US–China economic trade agreement* Washington.
- USCBP (US Customs and Border Protection). (2021). *Withhold release orders and findings* Accessed January 20, 2012. Washington.
- USTR (US Trade Representative). (2018a). *Findings of the investigation into China’s acts, policies, and practices related to technology transfer, intellectual property, and innovation under section 301 of the trade act of 1974* March 22. Washington.
- USTR (US Trade Representative). (2018b). *Update concerning China’s acts, policies and practices related to technology transfer, intellectual property, and innovation* November 20. Washington.
- USTR (US Trade Representative), and USDA (US Department of Agriculture). (2020). *Interim report on the economic and trade agreement between the United States of America and the People’s Republic of China: Agriculture trade* October 23. Washington.
- Waugh, M. E. (2019). *The consumption response to trade shocks: Evidence from the US–China trade war*. NBER Working Paper 26353.
- Waugh, M. E. (2020). *US-china trade war tracker* Last accessed February 12, 2021.
- Woodward, B. (2018). *Fear: Trump in the White House*. New York: Simon and Schuster.
- Wu, M. (2016). The ‘China, Inc.’ challenge to global trade governance. *Harvard International Law Journal*, 57(2), 261–224.