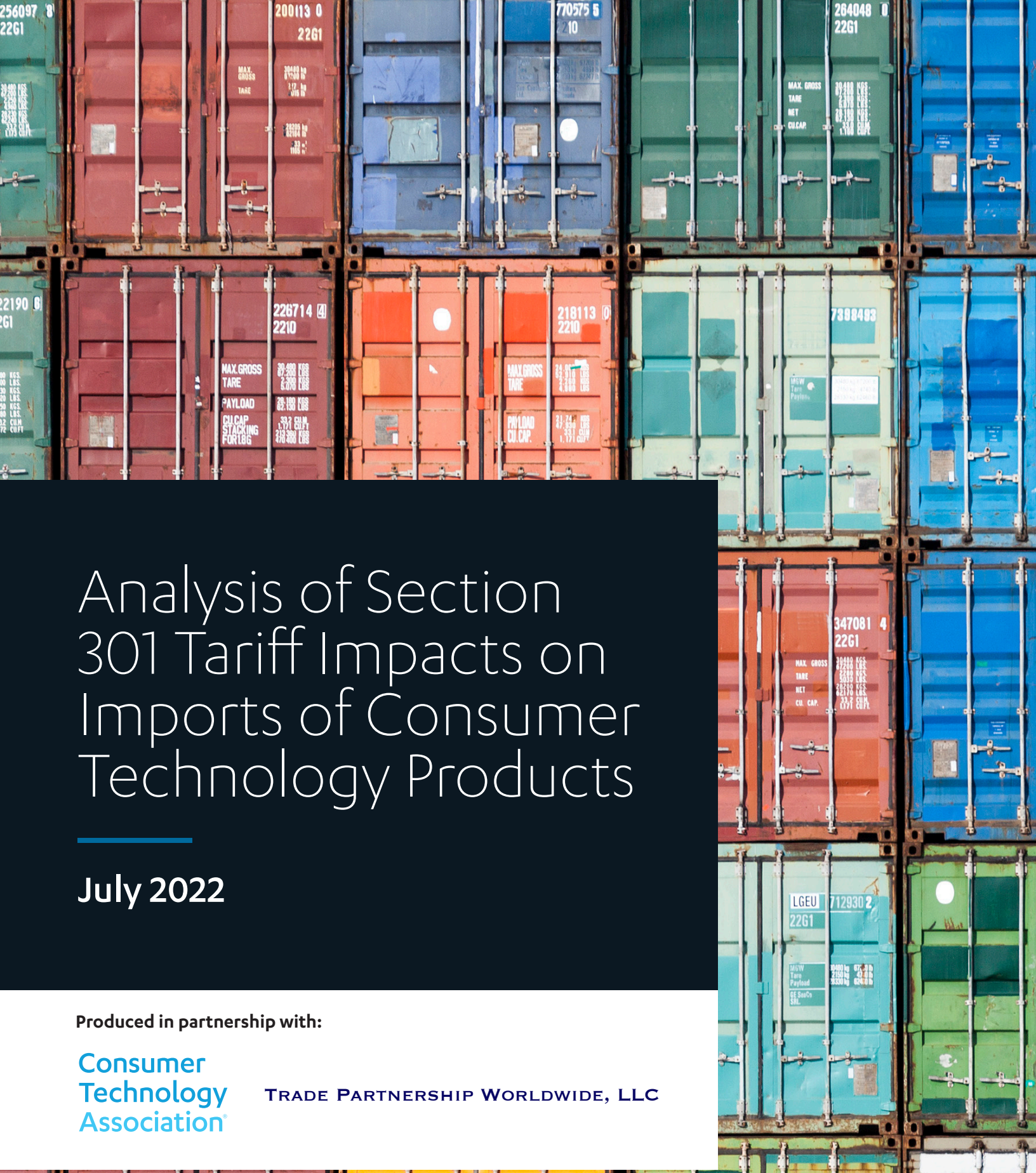


Analysis of Section 301 Tariff Impacts on Imports of Consumer Technology Products

July 2022

Produced in partnership with:

Consumer Technology Association®

TRADE PARTNERSHIP WORLDWIDE, LLC

Foreword

Over the past four years, the United States has waged a trade war with China. In 2018, the Trump administration imposed Section 301 tariffs in response to China's unfair trade practices, which include forced technology transfer and intellectual property theft. They were also intended to compel U.S. companies to move supply chains out of China. These tariffs are taxes paid by American businesses and consumers.

Americans deserve to know whether the Section 301 tariffs were effective, as well as how they affected our economy more broadly. With that goal in mind, the Consumer Technology Association (CTA) commissioned Trade Partnership Worldwide LLC to develop this report on the impact of the tariffs on the U.S. and global consumer technology industry.

The report shows that consumers and the consumer technology industry paid over $32 billion in tariffs through 2021. That sum has surely grown even larger over the past six months, likely reaching close to $40 billion. As the U.S. economy slowly recovers from several years of shutdowns and snarled supply chains, this means that companies are allocating scarce resources toward tariff payments. Instead, they could be investing in the research and development, equipment, job creation or workforce upskilling that helps bring new and innovative products to market.

Many technology companies, which include global technology companies as well as small businesses and startups, say they can no longer absorb the costs of tariffs without increasing prices for products. This trend is exacerbated by continued global supply chain challenges and higher shipping rates imposed by foreign ocean carriers. For American consumers, this means the technology they love and have come to rely on is less accessible and less affordable. Amid rising prices across all sectors of our economy, removing tariffs is an important step to help fight inflation.

As the report makes clear, the tariffs also failed to substantially shift supply chains. In the United States, Section 301 tariffs did not spur job creation or significant new investments in manufacturing. In fact, employment in the consumer technology industry stagnated and, in some cases, declined throughout the "trade war" period. Further, China remains a manufacturing base and source of finished technology products and inputs for the United States. In fact, imports of Section 301-affected tech products have risen or leveled off since mid-2020, suggesting that Section 301 tariffs are no longer motivating companies to leave China.

Meanwhile, certain U.S. trading partners are benefiting from the U.S.-China trade war. This report shows that production is shifting to markets with fewer barriers to trade: Vietnam, Taiwan, Malaysia, and Thailand. However, the United States does not currently have free trade agreements with these markets, making it harder for U.S. companies to compete in global markets.

Tariffs have not been an effective approach to addressing our economic disputes with China. They hurt U.S. businesses and consumers.

We call on U.S. policymakers to:

- Eliminate tariffs on consumer technology products to mitigate inflation, lower costs and unlock the innovative power of the U.S. economy.
- Eliminate tariffs on inputs to revitalize U.S. jobs and U.S. manufacturing of technology products.
- Immediately create new and expand existing trade agreements, including with Vietnam, Taiwan, Malaysia and Thailand, to make manufacturing investments in the U.S. more attractive.

CTA is proud to contribute to the ongoing national discussion on the China Section 301 tariffs, and I hope you find the data and insights contained in this report as compelling as I do.

Sincerely,

Gary Shapiro
President and CEO
Consumer Technology Association

Key findings

Consumer technology companies continue to import from China despite Section 301 tariffs – and imports of affected products (and related tariff costs) have been rising since mid-2020.

Import trends sharply diverged between tech products affected by Section 301 tariffs, which fell by 39% between 2017 and 2021, and those left off the list, which rose by 35%. Yet imports of Section 301-affected tech products have risen since mid-2020, suggesting that Section 301 tariffs stopped motivating companies to "leave China" nearly two years ago and imports are unlikely to fall further due to tariffs. For some of the most-tariffed products, such as digital cameras, certain cooking appliances, and vacuums, U.S. imports were higher in 2021 than in 2017 despite Section 301 tariffs up to 25%. Rising imports plus the lapse of nearly all Section 301 exclusions means Section 301 tariff costs are at their highest levels yet.

Consumer technology products faced over $32 billion in extra Section 301 tariffs between July 2018 and December 2021.

The consumer tech sector was at particular risk of Section 301 tariffs given its above-average dependence on imports from China. Overall, Section 301 tariffs affected about 55% of U.S. tech imports from China. The Trump administration may not have had a choice in excluding certain products: 84% of U.S. imports of tech products that never became subject to Section 301 tariffs came from China, meaning there were no viable alternative sources for the bulk of the tech imports. Still, the average tariff on consumer tech products from China rose from 0.4% in 2017 to 6.2% in 2021, including average Section 301 tariffs around 16% on affected products. Average tariffs on unaffected products remained around 0.2% over the entire period.

Section 301 tariffs on consumer technology products from China have not led to more U.S. manufacturing shipments or U.S. jobs.

Section 301 tariffs did not lead to noticeable growth in U.S. production or employment for tech sectors. Computers and electronics had the highest value of imports affected by Section 301 tariffs, and yet U.S. manufacturing shipments followed their basic pre-tariff trend – and their worst performance was in the year after tariffs were first imposed. Similarly, U.S. manufacturing shipments of tech-specific electrical equipment stagnated after Section 301 tariffs were imposed, but started growing again mid-2020 along with growing imports from China. Communications equipment products faced some of the most tariffs, yet U.S. employment was essentially flat both before and after tariffs were imposed, while other key tech sectors (computers, printed circuit assemblies, unrecorded media) similarly saw job growth that matched – or underperformed – the pre-Section 301 trends.

Section 301 tariffs on consumer technology products primarily increased imports from other Asian markets such as Vietnam and Taiwan.

The clear beneficiaries of Section 301 tariffs were exporters in other countries, whose shipments to the United States have surged – especially recently. Between 2017 to 2021, higher U.S. imports of affected tech products from other countries more than offset declines from China. As a result, China's share of U.S. imports of affected tech products nearly halved from 32% to 17%. Vietnam and Taiwan saw near-immediate growth in exports to the United States of affected products and likely would be considered the "biggest" winners, while South Korea and Thailand saw more delayed growth. Export growth between markets differed greatly as well, with Mexico, the EU, Taiwan, and South Korea mostly expanding sales of established products, while Vietnam, Thailand, and Malaysia saw surging exports of new types of products. The United States does not have free trade agreements with Vietnam, Taiwan, Thailand, and Malaysia.

SECTION 1:

U.S. consumer technology import trends from China

The threat of Section 301 tariffs on U.S. imports from China held particular risks for the consumer technology industry given its reliance on China for final assembly of many tech products. While much of the value (e.g., design, software, components) of tech products comes from other countries, including the United States, the final assembly location and cost of the completed product were generally the key factors in whether imports might become subject to punitive tariffs – and how much.

From this standpoint, consumer tech companies started off at a distinct disadvantage. About 45% of U.S. consumer tech imports[1] came from China in 2017, about twice the U.S. total and three times higher than non-tech imports. Sectors with high shares of imports from China (e.g., furniture and fixtures) had much lower import values. It would be hard to draft a Section 301 product list that did not prominently feature tech products.

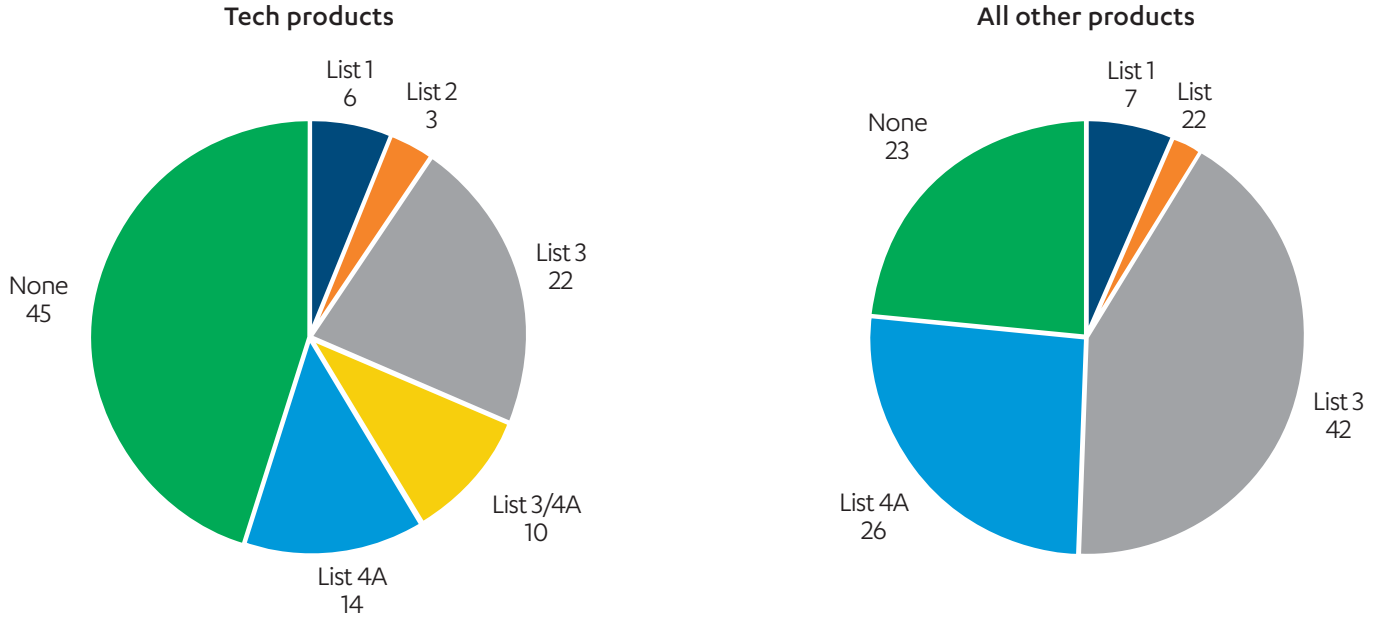
Table 1: Sector Comparison of Imports from China Prior to Section 301 Tariffs

Sector	Imports from China, 2017 ($M)	Imports from World, 2017 ($M)	China's Share of U.S. Imports, 2017 (%)
Tech Total	**230,771**	**515,816**	**45**
Computer & Electronic Products	183,732	398,793	46
Electrical Equipment	27,381	64,065	43
Machinery, Except Electrical	12,604	39,221	32
Miscellaneous Manufactures	4505	4681	96
Chemicals	2548	9056	28
Non-Tech Total	**272,880**	**1,806,949**	**15**
Miscellaneous Manufactures	36,784	116,670	32
Apparel & Accessories	29,209	84,081	35
Furniture & Fixtures	23,570	41,889	56
Machinery, Except Electrical	22,589	129,319	17
Fabricated Metal Products	22,512	68,799	33
Leather & Allied Products	20,095	37,724	53
Transportation Equipment	18,832	385,176	5
Rubber Products	17,060	52,293	33
Electrical Equipment	16,447	46,815	35
Chemicals	15,652	212,103	7
Textile Mill Products	11,654	21,570	54
Nonmetallic Mineral Products	7852	23,011	34
Primary Metals	4362	91,709	5
Wood Products	3970	20,122	20
Food & Kindred Products	3773	59,905	6
Paper	3266	19,772	17
Printed Matter & Related Products	2816	5554	51
Textiles & Fabrics	2244	8104	28
Fish & Other Marine Products	2157	16,080	13
Agricultural Products	600	36,100	2
Petroleum & Coal Products	405	63,840	1
Forestry Products	233	2716	9
Minerals & Ores	174	5078	3
Waste And Scrap	138	6227	2
Beverages & Tobacco Products	64	23,494	0
Livestock & Livestock Products	37	6177	1
Oil & Gas	1	118,232	0
Total	**503,652**	**2,322,765**	**22**

[1] Trade Partnership Worldwide worked with staff from the Consumer Technology Association to create a custom list of "consumer tech" products for this analysis. The list is based on North American Industry Classification System (NAICS) sectors. It includes all of NAICS Sector 334 (Computer & Electronic Products) and parts of several others. More information is available in the About the Data Appendix.

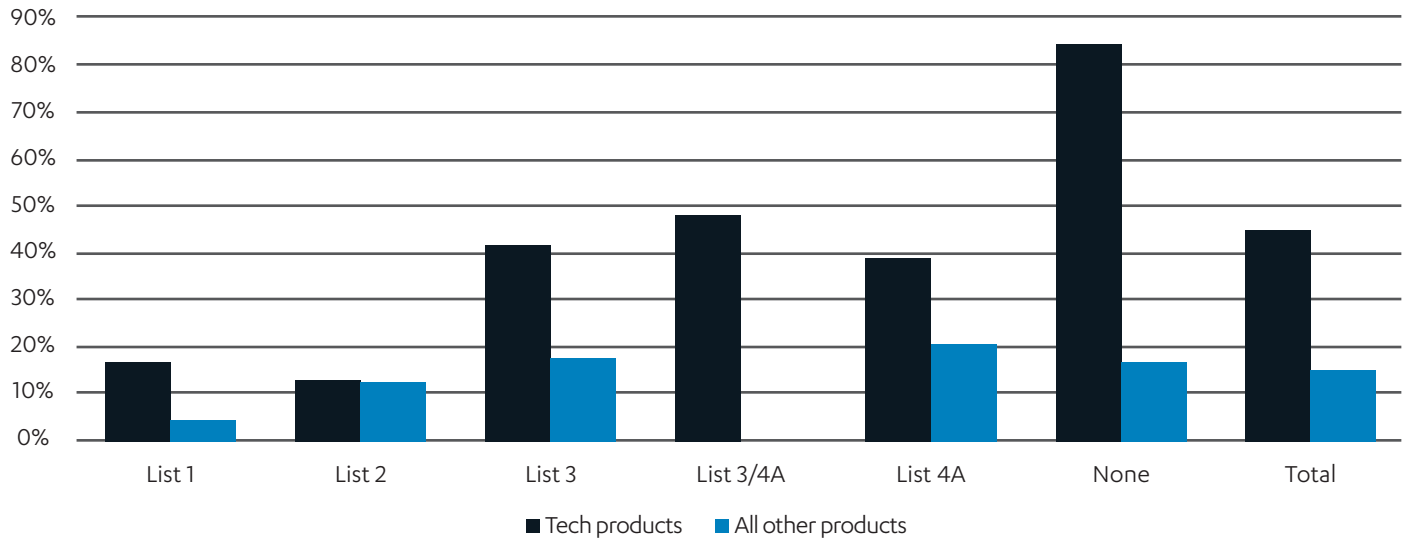
The tech industry's reliance on China cut both ways. A much larger share of tech products never became subject to Section 301 tariffs (45%) than non-tech products (23%). Similarly, between 30-40% of tech imports from China ended up on Lists 1-3, which are currently subject to 25 % punitive tariffs, compared to more than half of non-tech products. (One tech product code was split – with some products added to List 3 and the rest to List 4A – but since there is no data for 2017 it is not possible to determine the share of historical imports that ended up on each list.)

U.S. Imports from China, by Section 301 List, 2017 (%)



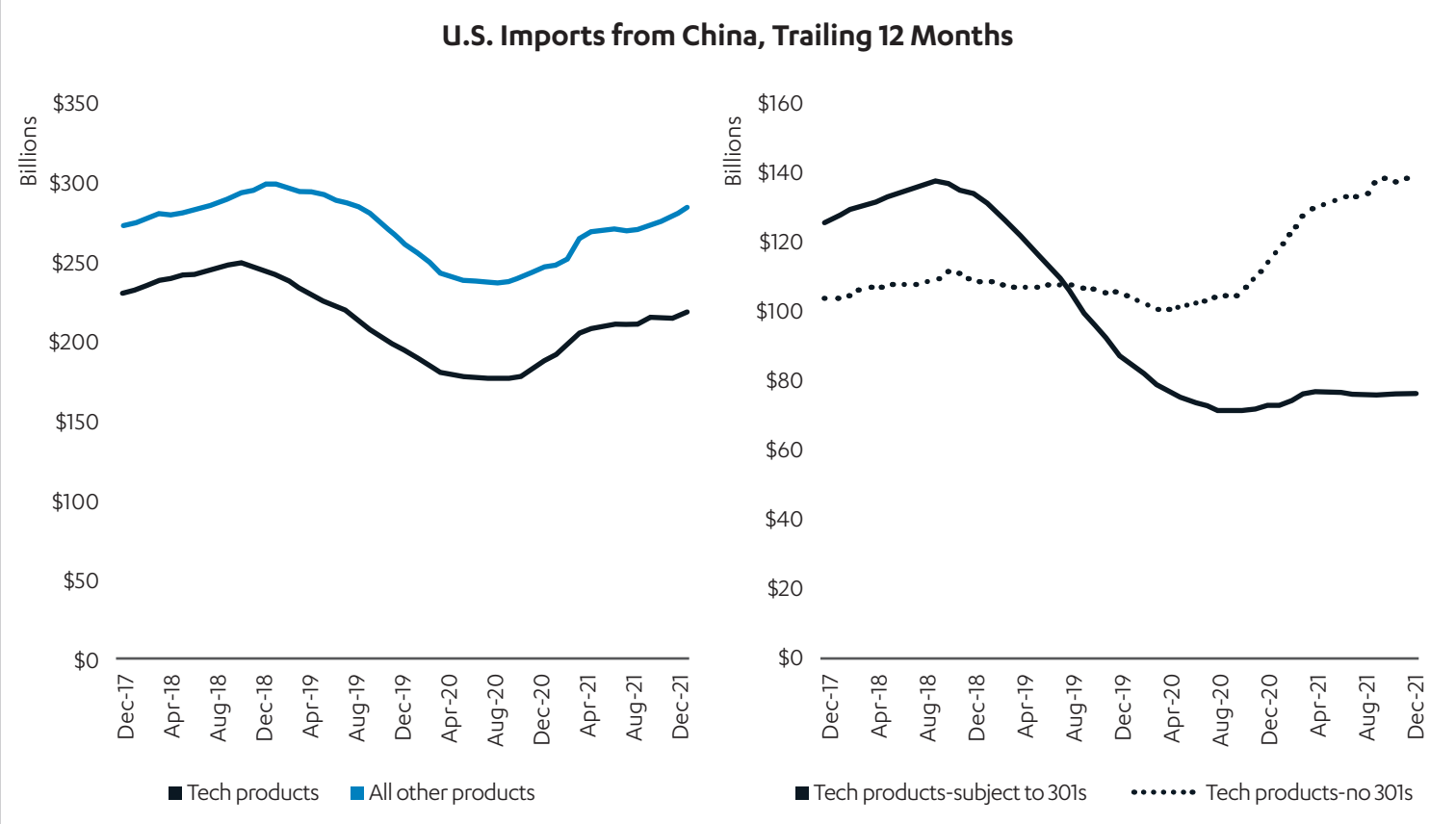
The Trump administration made clear that one goal in selecting products for inclusion on Section 301 lists was the ability to find alternative sources. However, that gets harder with each new round of tariffs, as shown below for both tech and non-tech products. Generally, the later tariffs were imposed, the more important China was as a supplier. The tech products that never become subject to Section 301 tariffs jump out: China was the source of over 80% of U.S. imports. Had "List 4B" tariffs been imposed, there would be few if any alternatives for the vast majority of tech products.

China's Share of U.S. Imports by Section 301 List, 2017



The Section 301 tariffs on China were implemented in phases. List 1 tariffs of 25%; List 2 tariffs of 25%, and List 3 tariffs on 10% took effect in short order between July 6 and September 24, 2018. The List 3 tariffs initially were supposed to increase to 25% on January 1, 2019, but the increase was delayed until May 2019. The tariff changes were not done: List 4A tariffs of 15% were imposed on September 1, 2019, with more 15% tariffs on List 4B – including nearly all remaining tech products – scheduled to take effect on December 15, 2019. Instead, the United States and China announced a "Phase One" deal in December 2019 that postponed List 4B tariffs indefinitely and would reduce List 4A tariffs from 15% to 7.5%. The reduction took effect in February 2020. Uncertainty was the only certainty.

Imports of tech and non-tech products from China largely followed the same trends following the imposition of Section 301 tariffs, as shown in the left graph below. Rising imports turned negative in late 2018, fell through 2020, and then began increasing again. While the overall trend is similar, it is noteworthy that compared to other products, tech imports started falling sooner, fell further, fell longer, and have not recovered quite as much.



Within the tech products, there are clear differences between imports subject to Section 301 tariffs and those that avoided them altogether, as shown in the right graph above. Between September 2018 and mid-2020, U.S. imports of Section 301-affected tech products fell by almost 50%, from a peak of around $140 billion to a low of around $70 billion. Imports of Section 301-affected tech products have risen slightly since, suggesting that Section 301 tariffs stopped motivating companies to "leave China" nearly two years ago and they are unlikely to fall further.

Tech companies' dependence on China has decreased. Between 2017 and 2021, imports of tech products affected by Section 301 fell by 39% while those not affected grew by 35%. China's share of U.S. imports of affected tech products roughly halved from 32% in 2017 to 17% in 2021. There was no such shift in non-affected products: China accounted for 84% of U.S. imports in both 2017 and 2021. (Strong import growth from China was matched by import growth from other countries.) The divergence in trends has led to a massive shift in the composition of tech imports from China. In 2021, almost two-thirds of tech imports from China did not face Section 301 tariffs.

Section 301 tariffs have imposed significant costs on consumer tech products. Between July 2018 and December 2021, tech products imported from China faced an estimated $32 billion in extra Section 301 tariffs. Imports of computer and electronic products faced about $16 billion in extra tariffs. The very high tariffs paid are a function of the total value of imports, as few sectors saw a larger share of their 2017 imports from China excluded from all Section 301 tariffs or average tariffs as low as computers and electronics.

The Section 301 tariffs on China were a shock to the tech industry for another reason: tariffs on such products had been largely eliminated over time due to the Information Technology Agreement (ITA) and similar agreements. In 2017, the average tariff on tech imports from China was just 0.4%. Average U.S. tariffs on China for non-tech imports were about 10 times higher. By 2021, the average tariff on tech imports from China was 6.2% and average U.S. tariffs on China for non-tech imports were only 2.5 times higher.

Table 2: Sector Comparison of Section 301 Tariffs Paid on Imports from China

Sector	Estimated Section 301 Tariffs ($M)	Average Tariff on China, 2017 (%)	Average Tariff on China, 2021 (%)	Share Hit by Section 301 Tariffs, 2017 (%)
Tech Total	**31,986**	**0.4**	**6.2**	**55**
Computer & Electronic Products	16,122	0.2	3.6	50
Electrical Equipment	10,852	1.9	14.8	74
Machinery, Except Electrical	4746	0.7	19.4	99
Chemicals	266	0.0	8.3	100
Miscellaneous Manufactures	0	0.0	0.0	0
Non-Tech Total	**81,060**	**4.6**	**15.3**	**77**
Machinery, Except Electrical	10,434	0.9	18.1	93
Fabricated Metal Products	10,399	3.1	19.2	86
Furniture & Fixtures	10,209	0.3	21.2	95
Transportation Equipment	9998	2.4	25.1	100
Electrical Equipment	7316	3.9	22.5	86
Rubber Products	5705	3.9	14.3	77
Chemicals	4522	3.0	12.7	62
Apparel & Accessories	4298	15.6	22.3	93
Leather & Allied Products	3090	11.6	18.2	68
Miscellaneous Manufactures	2548	1.7	3.7	37
Nonmetallic Mineral Products	2391	4.9	18.2	80
Textile Mill Products	2058	7.6	12.7	65
Food & Kindred Products	1658	3.8	22.9	100
Paper	1496	0.5	17.9	96
Wood Products	1431	3.0	20.9	90
Primary Metals	1139	2.4	19.1	92
Textiles & Fabrics	965	6.7	23.3	97
Fish & Other Marine Products	532	0.1	14.9	84
Printed & Related Products	438	0.0	5.4	65
Agricultural Products	229	0.9	18.3	95
Forestry Products	55	0.5	7.9	99
Petroleum & Coal Products	47	0.3	8.0	100
Waste & Scrap	42	0.2	11.0	76
Minerals & Ores	25	0.3	6.4	39
Beverages & Tobacco Products	17	0.6	16.7	72
Livestock & Livestock Products	1	0.0	7.8	100
Oil & Gas	0	0.0	15.5	100
Total	**113,045**	**2.7**	**11.3**	**67**

While many tech imports from China are subject to Section 301, the top products account for a large share of estimated tariffs paid. In total, over 1600 different tech products at the 10-digit level of the Harmonized Tariff Schedule of the United States (HTSUS) were imported from China between 2017 and 2021 that were on Section 301 Lists 1, 2, 3, or 4A. However, the top 15 products in Table 3 below accounted for about one-third of all estimated Section 301 tariffs paid. As noted previously, most of these products do not face any tariffs on a most-favored nation (MFN) basis.

Table 3: Estimated Section 301 Tariffs Paid on Select Tech Imports from China

Product (10-digit HTSUS)	Estimated Section 301 Tariffs ($M)	MFN Tariff Rate	Section 301 List	Section 301 Tariff Rate (%)
Connected devices (e.g., wireless earbuds, headsets)	1799	0.0%	4A	7.5
Routers and network switching devices	996	0.0%	3	25
Insulated electrical cables/wires, miscellaneous	778	2.6%	3	25
Vacuums, including robot vacuums	727	0.0%	3	25
Cooking appliances and plate warmers	680	0.0%	3	25
Computer parts and accessories (e.g., mousepads, stylus)	678	0.0%	3	25
Desktop computers	673	0.0%	3	25
Computer components (e.g., docking stations, GPUs, PCBs)	584	0.0%	3	25
Electronic integrated circuits	533	0.0%	2	25
Insulated electrical cables/wires for telecom use	521	0.0%	3	25
Misc. electrical machines with individual functions	446	2.6%	2	25
Computer accessories (e.g., mice)	407	0.0%	3	25
Television cameras	404	0.0%	3	25
Digital cameras	404	0.0%	4A	7.5
Phone chargers	397	0.0%	3	25

The two tech products that have faced the most Section 301 tariffs – connected devices (HTS 8517620090) and routers and other network switching products (HTS 8517620020) – entered under the same HTSUS code until they were split in 2018 so that routers could be added to List 3. The decision to postpone tariffs on the more consumer-centric products (e.g., wireless earbuds, headsets, etc.) for nearly a year – and to charge a lower rate – did not prevent them from being the most-tariffed tech products. While the new codes prevent analysis of import trends for the individual products, imports of the two products combined fell from $22 billion in 2017 to $10 billion in 2021.

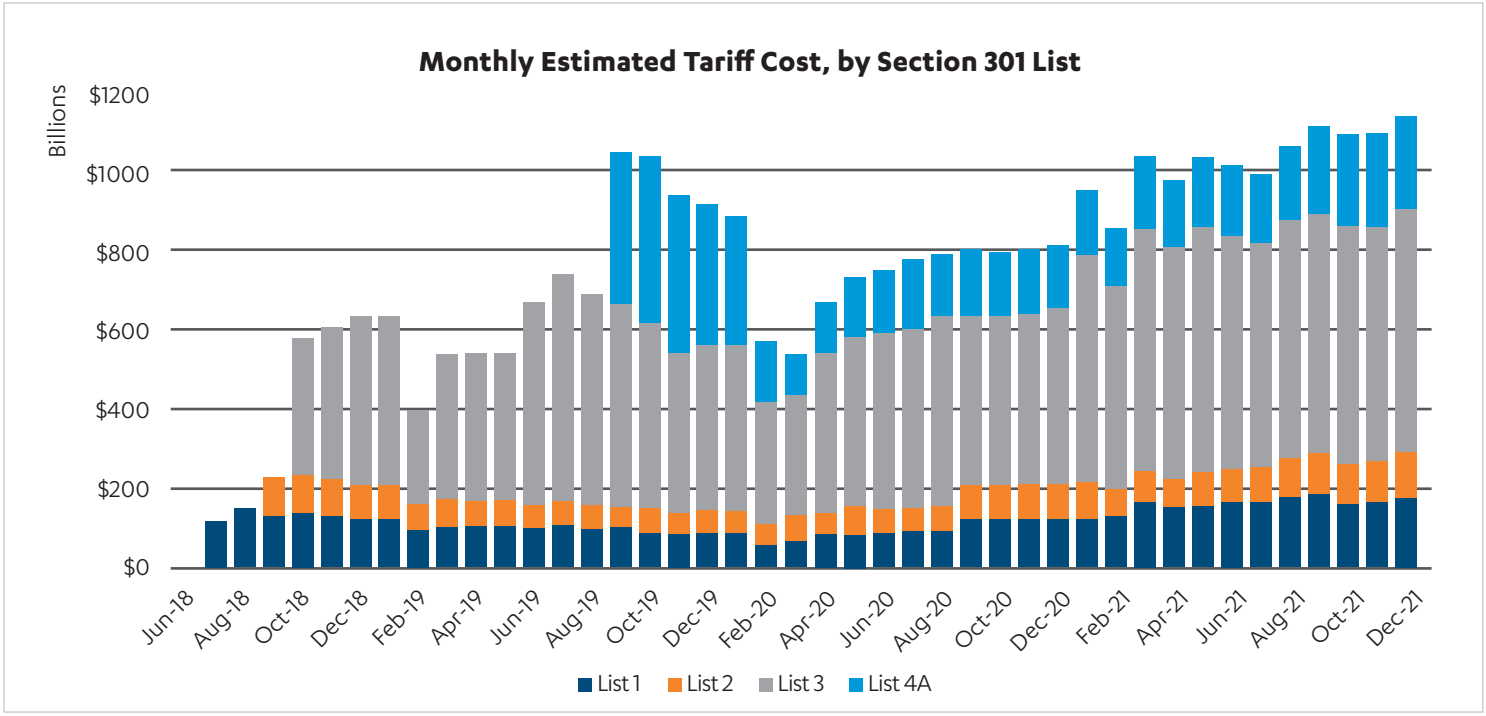
Most of the tech products that have faced the highest Section 301 tariffs are on List 3 and have been subject to 25% tariffs for three years. Only two of the products – insulated electrical cables/wires and miscellaneous electrical machines "with individual functions" such as sound machines – would face any tariffs going forward if Section 301 tariffs were rescinded.

Despite the Section 301 tariffs, U.S. imports of some of these products increased between 2017 and 2021. For example, imports of:

- Digital cameras increased from $1.7 billion in 2017 to $2.5 billion in 2021;
- Cooking appliances increased from $1.05 billion in 2017 to $1.2 billion in 2021, and
- Vacuums, including robot vacuums, increased from $1.7 billion in 2017 to $1.8 billion in 2017.

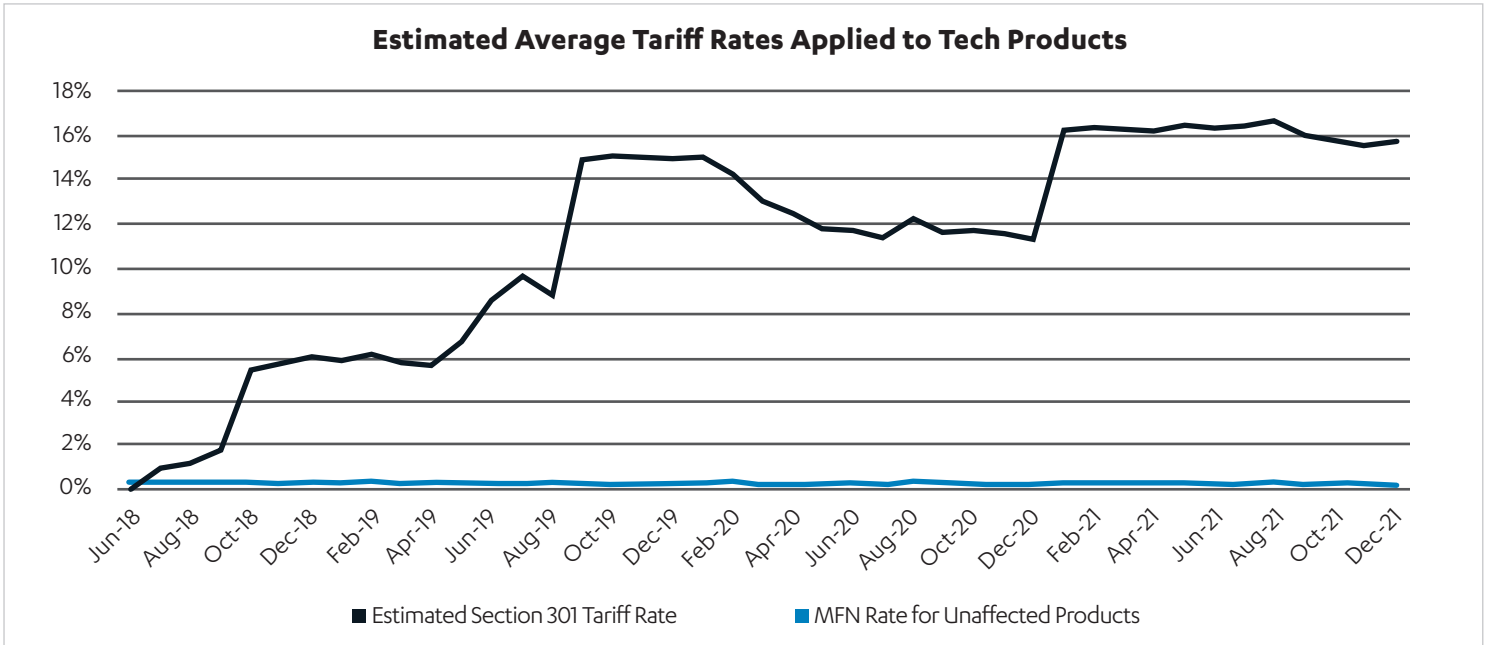
Some of the products raise questions about Section 301 tariff selection. For example, desktop computers are among the most-tariffed tech imports from China, but laptops are wholly excluded from Section 301 tariffs. Docking stations that might be used with the duty-free laptops, however, face the same 25% tariffs as desktops. There is little rhyme or reason to help companies – or consumers – trying to figure out why some products face Section 301 tariffs and others do not.

In theory, the imposition of Section 301 tariffs should cause imports to fall and, eventually, for tariff costs to fall too. Importers initially must pay tariffs on already-ordered products, but Section 301 tariffs should decline if companies find alternative sources or reduce purchases of tariffed products. That has not happened, as shown in the graph below.



The monthly tariffs paid due to Section 301 tariffs on tech products generally rose between February 2020 and December 2021. The last month of analysis was also the most expensive with an estimated $1.14 billion in extra tariffs paid. It slightly exceeded September 2019 even though tariffs on List 4A products were twice as high then (15%) as they are now (7.5%). A jump from December 2020 to January 2021, when nearly all Section 301 exclusions expired, is particularly noticeable in the monthly chart.

The expiration of most Section 301 tariff exclusions is also quite clear in the graph below showing the average calculated duty on U.S. imports of tech products from China by month. All the other sharp changes (e.g., September to October 2018, August to September 2019, the post-February 2020 decline) correspond to new tariffs taking effect or changes in the list-wide rate. January 2021 is different. There was no "official" rate change but one of the biggest actual changes.



Analyzing the difference between estimated Section 301 tariffs paid and the expected tariffs that would have been collected at the published rates allows for estimates of the value of exclusions granted by sector. Such estimates are imperfect but help illustrate the importance of tariffs exclusions for various sectors (see the About the Data section at the end for information on known data limitations and steps used in this analysis to mitigate discrepancies).

Section 301 exclusions appear to have had a large impact on tech importers. Exclusions eliminated an estimated $6.5 billion in tariffs on tech imports from China through December 2021, or 17% of the $38.5 billion in expected tariffs based on the published rates. Tech products accounted for about $1 in $3 of all waived U.S. tariffs, and a higher share of tech imports appear to have benefited from exclusions than non-tech products. Or at least they did: most Section 301 tariffs expired at the end of 2020, so exclusion savings are mostly stagnant while tariff costs continue to rise.

Table 2: Sector Comparison of Section 301 Tariffs Paid on Imports from China

Sector	Estimated Section 301 Tariffs ($M)	Expected Section 301 Tariffs ($M)	Estimated Tariffs Waived ($M)	Share of Expected Tariffs Waived (%)
Tech Total	**31,986**	**38,488**	**6503**	**16.9**
Computer & Electronic Products	16,122	19,504	3382	17.3
Electrical Equipment	10,852	12,700	1849	14.6
Machinery, Except Electrical	4746	6001	1255	20.9
Chemicals	266	283	17	5.9
Miscellaneous Manufactures	0	-	-	0.0
Non-Tech Total	**81,060**	**94,140**	**13,081**	**13.9**
Machinery, Except Electrical	10,434	13,330	2896	21.7
Fabricated Metal Products	10,399	11,699	1300	11.1
Furniture & Fixtures	10,209	11,712	1503	12.8
Transportation Equipment	9998	11,650	1652	14.2
Electrical Equipment	7316	8386	1070	12.8
Rubber Products	5705	7299	1593	21.8
Chemicals	4522	5038	516	10.2
Apparel & Accessories	4298	4734	436	9.2
Leather & Allied Products	3090	3318	228	6.9
Miscellaneous Manufactures	2548	3115	567	18.2
Nonmetallic Mineral Products	2391	2631	241	9.2
Textile Mill Products	2058	2560	502	19.6
Food & Kindred Products	1658	1691	33	1.9
Paper	1496	1666	171	10.2
Wood Products	1431	1502	71	4.7
Primary Metals	1139	1148	9	0.8
Textiles & Fabrics	965	1151	186	16.1
Fish & Other Marine Products	532	615	84	13.6
Printed & Related Products	438	450	12	2.7
Agricultural Products	229	240	11	4.6
Forestry Products	55	55	0	0.0
Petroleum & Coal Products	47	47	0	0.0
Waste & Scrap	42	42	0	0.0
Minerals & Ores	25	25	0	0.0
Beverages & Tobacco Products	17	17	0	0.0
Livestock & Livestock Products	1	1	0	0.0
Oil & Gas	0	0	0	0.0
Total	**113,045**	**132,629**	**19,583**	**14.8**

SECTION 2:

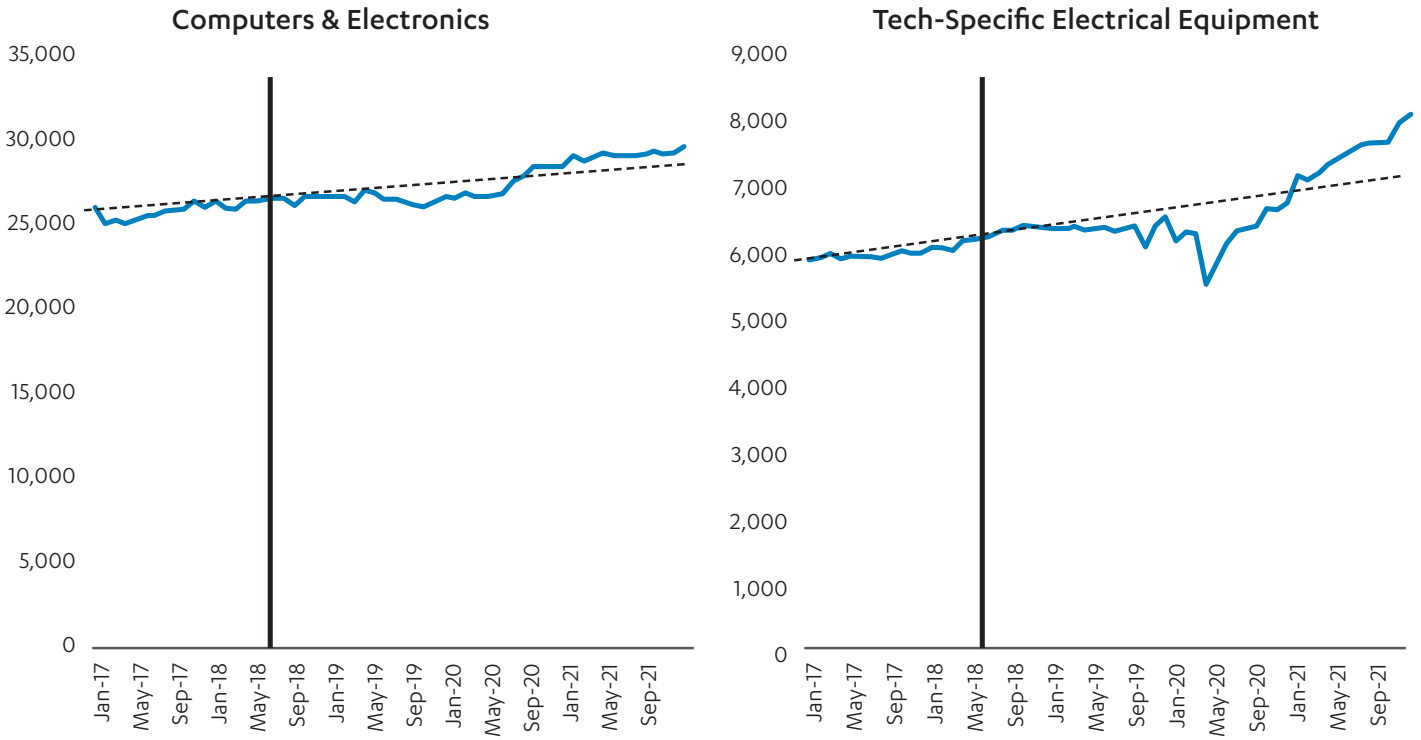
U.S. consumer technology shipment and employment trends

Section 301 tariffs were meant to address intellectual property rights (IPR) violations and forced technology transfer practices in China, yet proponents of the tariffs clearly hoped that higher tariffs on imports from China would lead to increased U.S. production and jobs related to the affected products. The Section 301 tariffs had no such effect: U.S. manufacturing was in recession for most of 2019 as both production and jobs stagnated or fell.

Section 301 tariffs did not lead to significant production or job growth in the most-affected tech sectors. Computers and electronics had the largest value of imports affected by Section 301 tariffs by a large margin: $90 billion in 2017 imports were included on Section Lists 1, 2, 3, or 4A. That was twice as high as total imports – tech or otherwise, Section 301 affected or not – of any other sector. The United States collected an estimated $16 billion in Section 301 tariffs on computers and electronics from July 2018 to December 2021.

And yet there is no noticeable increase in shipments of U.S.-manufactured computers and electronics following the imposition of the tariffs, as shown in the left graph below. In fact, growth stagnated after tariffs were imposed compared to the pre-tariff trend (dotted line in graph) before rising again slightly starting in mid-2020. Even with increases in 2021, shipments are around the same level that would have been predicted based on pre-tariff trends.

U.S. Shipments of Select Products, Seasonally Adjusted ($M)



Electrical equipment designated as "tech" products (e.g., appliances, cables and wires, batteries) was the second-largest category of tech imports affected by Section 301 tariffs. About $20 billion of such U.S. imports in 2017 ultimately were included on Section Lists 1, 2, 3, or 4A. Similar to computers and electronics, shipments were growing and actually fell below the pre-tariff trendline shortly after tariffs were imposed. Only after the initial Covid-shock did U.S. shipments start growing faster.

Recent growth should not be misinterpreted to suggest that continued Section 301 tariffs on tech-specific electrical equipment are "working" because they are leading to more U.S. production. Imports from China of these products increased by 33% between 2017 and 2021. It is simply the case that strong U.S. demand has led to higher U.S. shipments and imports.

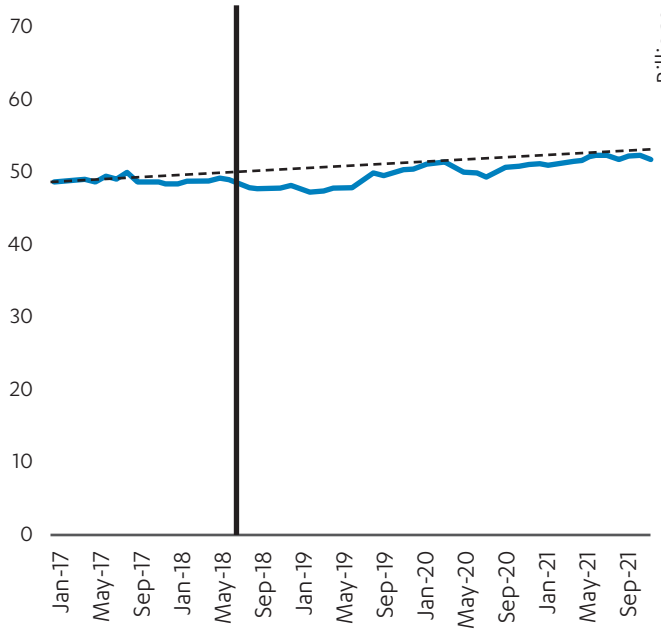
Section 301 tariffs did not lead to a noticeable increase in American tech manufacturing jobs. In numerous sectors affected by Section 301 tariffs, tech manufacturing jobs are flat or below 2017 levels. In some sectors, job trends worsened after tariffs were imposed.

One sector proved high tariffs lead to decreased imports and more American jobs, Communications Equipment (NAICS 334220) would seem to be it. The sector includes connected devices and routers, which have faced the most Section 301 tariffs among tech products.

For products in the sector subject to Section 301 tariffs, U.S. imports from China declined by $17 billion, or 58%, between 2017 and 2021. Imports of products excluded from Section 301 tariffs (e.g., cell phones) grew by $4 billion, but not nearly enough to offset the other declines, as shown in the right graph below. Tariffs faced went from virtually zero to a peak of over $1.7 billion in the 12 months ending in August 2020 (the period that captured the highest average rates on List 4A products). The $1.2 billion in tariffs collected on imports from China in 2021 was over 50 times higher than the $24 million collected in 2017.

And yet, as shown in the left graph below, there are no significant changes to U.S. communications equipment manufacturing employment at any point between 2017 and 2021. Both before and after Section 301 tariffs were imposed, U.S. manufacturing employment was essentially flat. At no point after tariffs were imposed did U.S. jobs rise above the pre-tariff trendline. The furthest below the trendline they fell was in the first year after the Section 301 tariffs took effect.

U.S. Employment, Seasonally Adjusted (Thousands)



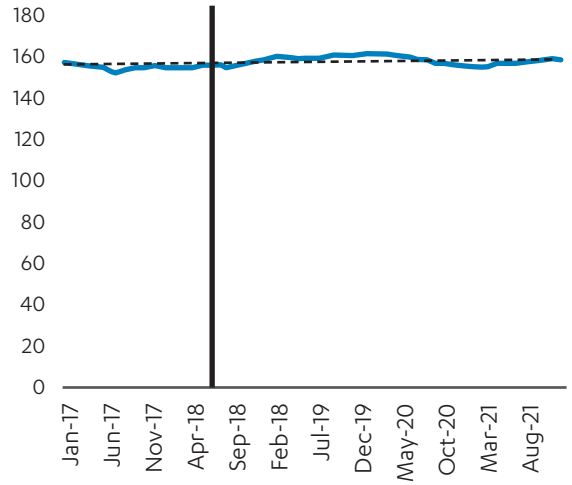
U.S. Imports and Tariffs on China, Trailing 12 Months

Communications Equipment (NAICS 334220)

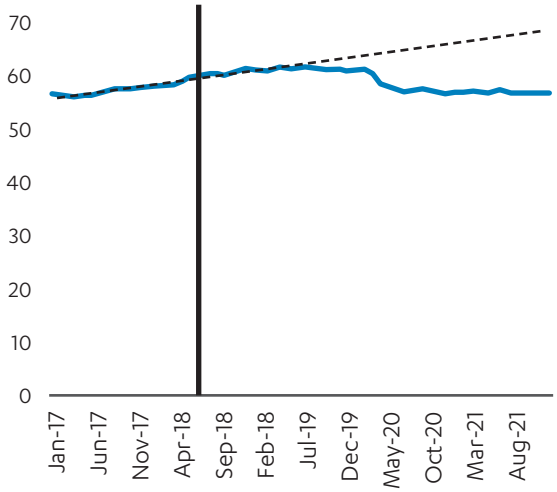
The communications equipment example is particularly relevant in the current inflationary environment the United States faces. Imports from China declined. Neither imports from the rest of the world nor a wave of new U.S. production filled the gap. Costs for the imports that did come from China were increased through tariffs. Reducing supply while raising costs is not the way to bring costs down for consumers.

U.S. Employment in Select Sectors, Seasonally Adjusted (Thousands)

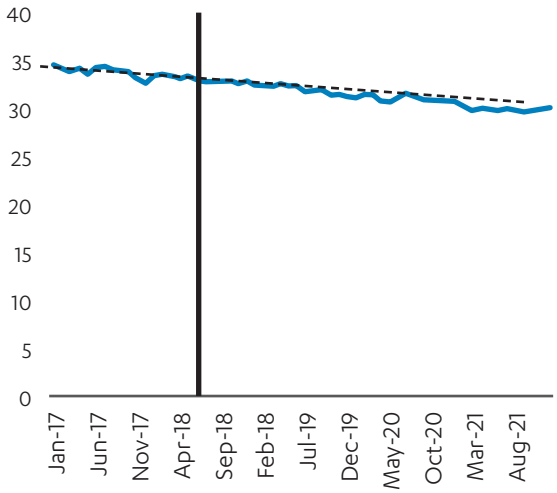
Computers (NAICS 334100)



Printed Circuit Assemblies (NAICS 334418)



Unrecorded Media (NAICS 334600)



Perhaps even more surprising, communications equipment is one of the tech manufacturing sectors with the biggest employment increases between 2017 and 2021.

Computers and peripherals include top-tariffed products such as desktop computers, docking stations, and mice. Imports from China faced over $16 billion in extra Section 301 tariffs from July 2018 to December 2021 – or about $1 out of every $7 in Section 301 tariffs collected over that period.

Yet the U.S. manufacturing jobs trend for computers is similarly flat with no visible change associated with the imposition of Section 301 tariffs. U.S. manufacturing jobs associated with these products actually peaked in February 2020. Since then, jobs have been lower despite strong U.S. demand and even higher tariff rates caused by the expiration of most Section 301 exclusions at the end of 2020.

Printed circuit assemblies include computer components and accessories such as graphic processing units, motherboards, and USB modems. The United States imposed an estimated $1.1 billion in extra Section 301 tariffs from July 2018 to December 2021. These products faced tariffs averaging just 0.04% when imported from China in 2017.

U.S. manufacturing jobs have performed much worse since Section 301 tariffs were imposed. The sector was adding jobs, growing from about 56,000 U.S. jobs in early 2017 to around 60,000 jobs when tariffs were imposed in mid-2018. Yet job growth peaked around April 2019 – the last month before the List 3 tariffs that hit key imports in the section increased to 25% – and have been trending downward since. In December 2021, there were about 5% fewer U.S. jobs in the printed circuit assembly sector than when tariffs were imposed on key imports from China.

Unrecorded media includes solid-state drives (SSDs), a newer computer storage technology similar to a hard drive. SSDs tend to be faster, but have less storage capacity, than traditional hard drives. Imports from China faced over $100 million in extra Section 301 tariffs from July 2018 to December 2021 – small in comparison to tariffs faced on other tech products but high enough to virtually eliminate China as a supplier. In 2017, China accounted for 42% of U.S. unrecorded media imports. In 2021, it accounted for less than 3%.

Once again, the imposition of tariffs had no positive effect on U.S. manufacturing job trends. There jobs were trending down slightly before tariffs were imposed, and have continued trending down. Section 301 tariffs effectively moved trade out of China, but without any apparent benefit to U.S. consumers or jobs.

SECTION 3:

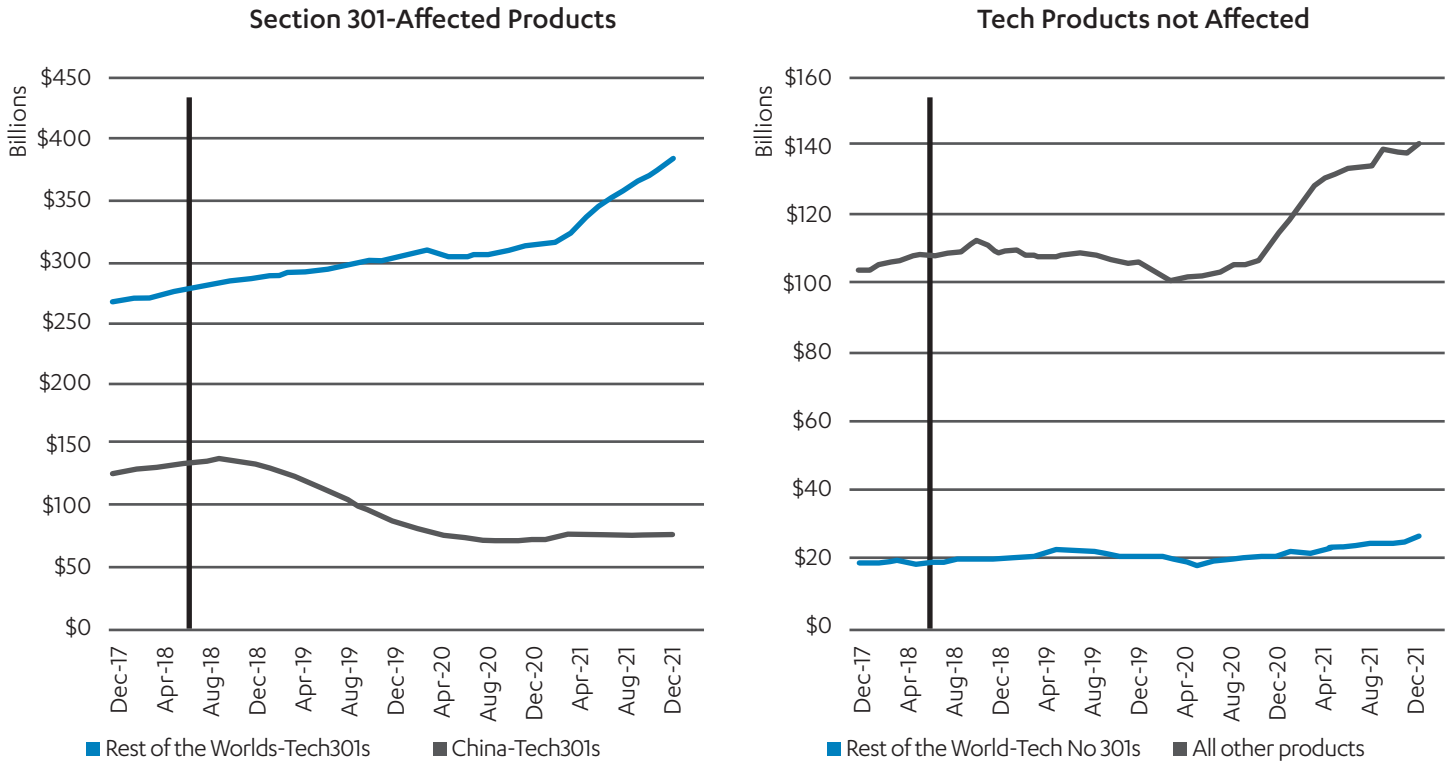
U.S. consumer technology import trends from other markets

The clear beneficiaries of Section 301 tariffs were exporters in other countries. While U.S. companies faced billions of dollars in new tariffs on China, but did not increase U.S. manufacturing or jobs, tech imports for affected products from other countries surged – especially recently.

Supply chain shifts take time and so change was not immediate. While imports of tech products affected by Section 301 peaked shortly after tariffs were imposed, imports from other countries continued to grow at a similar rate, as shown in the left graph below. U.S. imports from other countries saw a slight dip at the beginning of the Covid-19 pandemic, but quickly returned to "normal" growth throughout 2020 before really starting to accelerate in 2021. Imports of affected products from China continued to decline through October 2020, but have recovered some since then. This suggests that tariffs no longer motivate companies to move imports from China, but simply focus growth elsewhere.

Yet the cumulative results show a very different sourcing pattern today than before the Section 301 tariffs took effect. From 2017 to 2021, U.S. imports of affected tech products declined by $50 billion (-39%). The decline in tech imports of affected products was more than offset by an increase of $117 billion (+44%) in imports from other countries. As a result of those shifts, China's share of U.S. imports of affected tech products nearly halved from 32% to 17%.

Tech Imports Trends, China vs Rest of World, Trailing 12 Months



Supply chains have not shifted away from China for unaffected tech products. As shown in the right graph above, U.S. imports of unaffected tech products from China grew by $36 billion (+35%) between 2017 and 2021. Imports from other countries grew by $7 billion (+39%) – so a slightly faster rate – but not enough to close the gap significantly. While there was some slight movement in between, China's share of U.S. imports of unaffected tech products was 84% in both 2017 and 2021.

The biggest "winners" tended to be other Asian countries that were able to replace Chinese exports of affected products to the United States. Among the key suppliers, Taiwan saw the biggest increase by dollar value (+$23 billion) between 2017 and 2021, while Vietnam saw the biggest increase in percentage terms (+241%). The table below shows some of the key differences between the suppliers that have grown in importance for U.S. tech imports.

Mexico is often cited as a winner of the U.S.-China trade war due to companies' perceived desire to "nearshore" production even if the United States is not a viable option. Mexico replaced China as the top source market for affected tech products with $96 billion in U.S. imports in 2021, yet this was due primarily to its existing trade. U.S. imports from Mexico grew just 22% from 2017 to 2021, about half the rate of imports from all non-China sources. The EU similarly benefited from its existing size: imports increased by over $8 billion, but this was just 22% growth. For Mexico and the EU, there was no apparent change in U.S. tech import trends after Section 301 tariffs were imposed, and 2021 imports are about what would be expected from pre-tariff trends (with a Covid-related dip and then recovery).

Conversely, Taiwan and Vietnam saw near-immediate growth in exports to the United States after Section 301 tariffs were imposed. Imports from Vietnam were trending down slightly in 2017, but quickly reversed. To give a sense of the rapid China-to-Vietnam shift: in 2017, the U.S. imported $16.50 in affected tech products from China for every $1 from Vietnam; by 2021 it had fallen to less than $3 from China for every $1 from Vietnam. Imports from Taiwan were rising slightly before Section 301 tariffs were imposed. Imports from Taiwan in 2017 were about twice as high as Vietnam, which is why the growth rate is not as large despite an even greater import increase by value.

South Korea and Thailand also appear to be winners from the Section 301 tariffs, though U.S. tech import increases did not begin in earnest until late 2019 or early 2020. This may be a function of how the Section 301 lists were created, as products on List 4A – which did not become subject to tariffs until September 2019 – account for a larger share of increased imports from South Korea and Thailand than the other Asian suppliers.

Malaysia does not fit into a neat category with any of the other growth countries. Semiconductors, which became subject to 25% Section 301 tariffs in August 2018, are the import story for Malaysia. Yet imports from Malaysia did not start rising until early 2021, a very delayed impact compared to other countries. The limited impact for years – and then a sudden surge – suggest that semiconductor supply issues are driving import trends for Malaysia, not the China tariffs.

Table 5: Key Growth Suppliers and Products for Tech Products Affected by Section 301 Tariffs on China

Supplier Market	Import Change, 2017-2021 ($M)	Import Change, 2017-2021 (%)	Key Import Growth Products
Taiwan	23,038	147	Computer accessories, computers and servers, connected devices (e.g., wireless headphones, smart watches, modems), semiconductors
Vietnam	18,461	241	Connected devices, computer accessories, solar cells, power adapters
Mexico	17,633	22	Computers and servers, TVs, air conditioner parts, solid-state drives ("SSDs")
South Korea	14,091	95	Computer accessories, SSDs, refrigerators, batteries
Malaysia	10,842	38	Semiconductors, ink cartridges, misc. computer accessories (e.g., remote controls), SSDs
Thailand	8367	56	External hard drives, computer terminals, solar cells
European Union	8174	22	Connected devices, power adapters, electro-medical devices
Non-China Total	**116,522**	**44**	

Imports of Section 301-affected tech products from Vietnam grew faster than any of the other major suppliers. In 2021, U.S. imports from Vietnam were $26.1 billion, a 241% increase from the $7.7 billion in imports in 2017. Vietnam's growth is even more impressive considering that U.S. imports of these products were trending down throughout 2017.

Perhaps surprisingly, import growth from Vietnam was largest for products not affected by Section 301 tariffs (and therefore not reflected in the top graph).

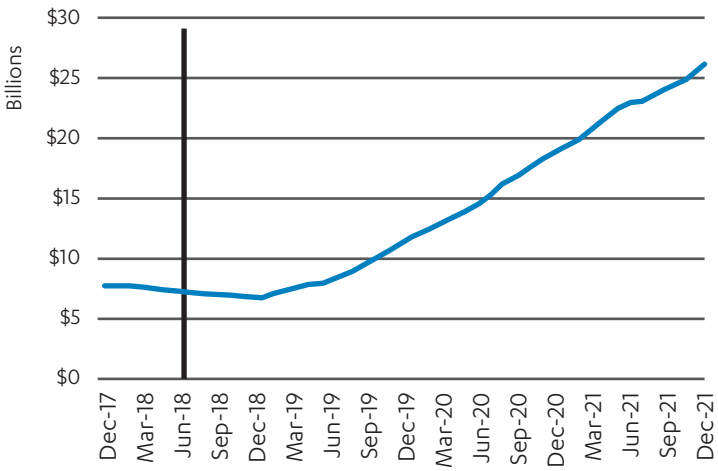
Among the affected products, some already large categories grew much bigger. For example:

- Connected devices (e.g., wireless headphones, smart watches, modems), split between List 3 and List 4A, grew from $884 million in 2017 to $7.2 billion in 2021 (+$6.3 billion, +717%);
- Computer accessories, primarily on List 3, grew from $97 million to $2.8 billion (+$2.7 billion, +2748%);
- Solar cells, primarily on List 2, grew from $775 million to $2.0 billion (+$1.3 billion, +163%), and
- Power adapters on List 3 grew from $150 million to $1.1 billion (+$913 million, +608%).

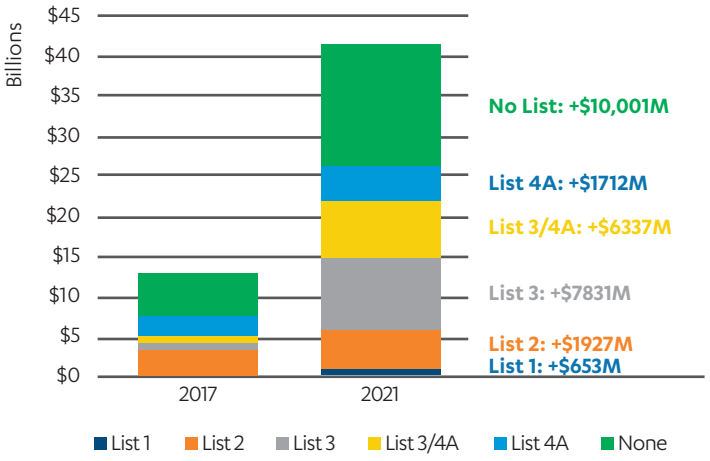
Other imports surged from virtually zero:

- Loudspeakers on List 4A grew from just $2 million in 2017 to $685 million in 2021;
- Computer control/adapter units on List 3 grew from $3 million to $432 million;
- Computer accessories (e.g., keyboards, mice, trackpads) on List 3 grew from $11 million to $655 million, and
- Insulated cables on List 3 grew from $29 million to $613 million.

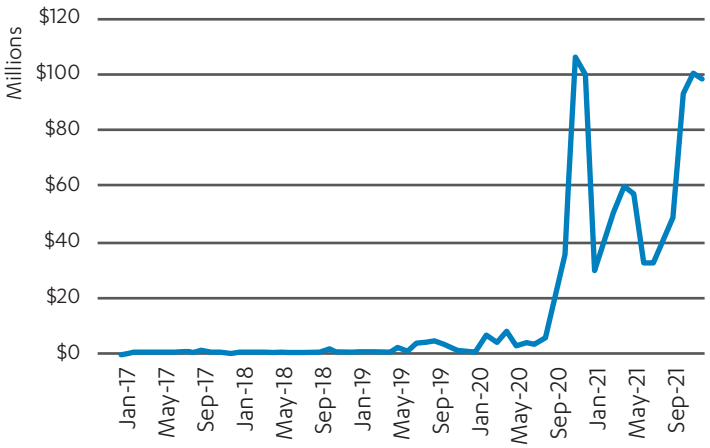
Imports of Section 301-Affected Tech Products from Vietnam, Trailing 12 Months



Imports of Tech Products from Vietnam, by Section 301 List



Monthly Imports of Loudspeakers from Vietnam



Imports of Section 301-affected tech products from Taiwan grew more by value than any of the other major suppliers. In 2021, U.S. imports from Taiwan were $38.8 billion, a 147% increase from the $15.7 billion in imports in 2017. Imports from Taiwan were growing slightly before Section 301 tariffs were imposed on China, but accelerated noticeably in late 2018. They have been rising steadily – for the most part – ever since.

For Taiwan, import growth was largest for products on List 3. Imports from Taiwan of products unaffected by Section 301 tariffs declined slightly.

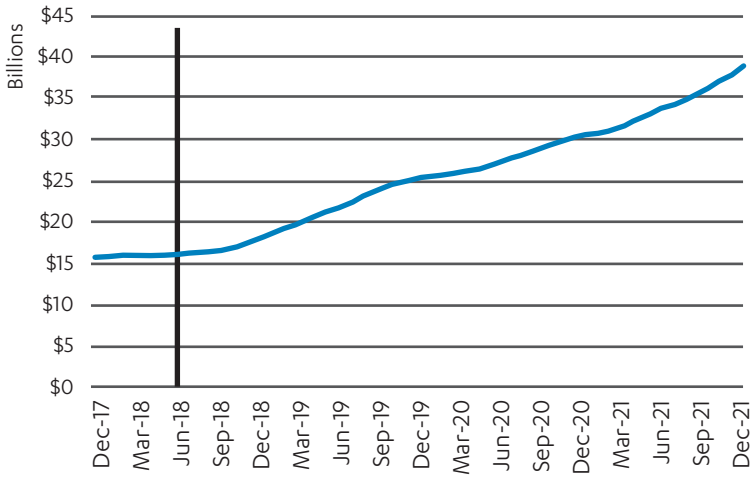
Among affected products, Taiwan's growth story is about expanding exports of products that the U.S. was already buying in reasonably large quantities:

- Computer accessories, primarily on List 3, grew from $1.4 billion to $8.4 billion (+$7.1 billion, +519%)
- Computers and servers on List 3 grew from $450 million to $4.2 billion (+$3.8 billion, +832%)
- Connected devices, split across Lists 3 and List 4A, grew from $1.6 billion to $4.3 billion (+$2.8 billion, +173%), and
- Solid-state drives on List 4A grew from $1.2 billion to $3.4 billion (+$2.2 billion, +183%).

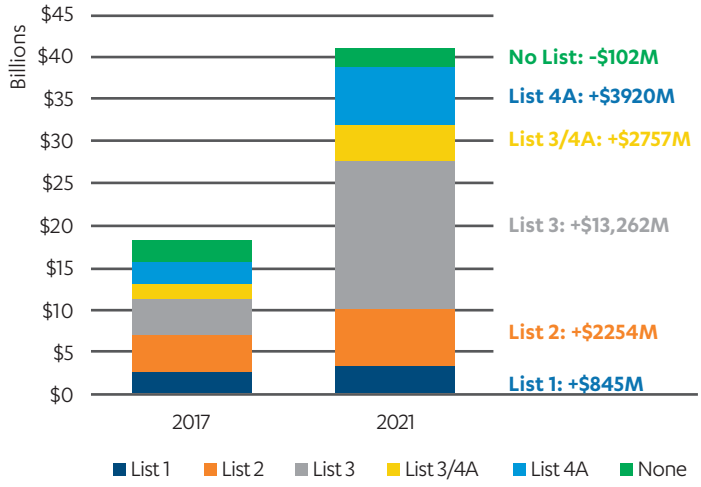
The only clearly "new" import from Taiwan was TVs on List 4A, which grew from $3 million in 2017 to $607 million in 2021.

Taiwan was able to capitalize on products where it already sold to the U.S. market, but did not really see widespread growth into new areas like Vietnam.

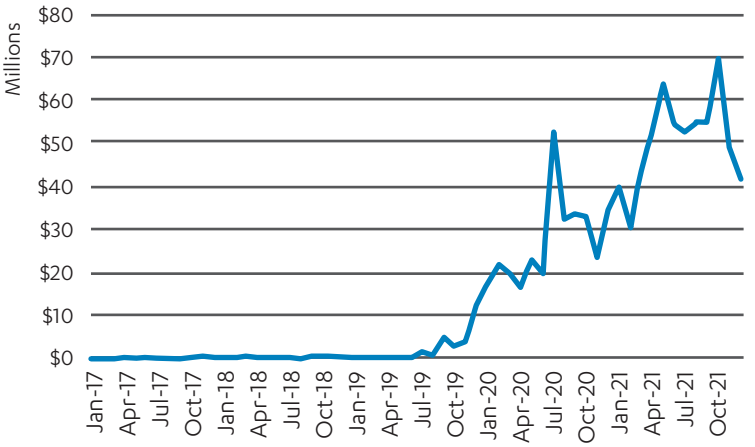
Imports of Section 301-Affected Tech Products from Taiwan, Trailing 12 Months



Imports of Tech Products from Taiwan, by Section 301 List



Monthly Imports of TVs from Taiwan



Imports of Section 301-affected tech products from South Korea nearly doubled from $14.8 billion in 2017 to $28.9 billion in 2021. Imports from South Korea were growing before Section 301 tariffs were imposed on China, but declined for much of 2019. U.S. imports from South Korea reversed again in late 2019 and grew strongly throughout 2020 and 2021.

For South Korea, import growth was largest for products on List 3 and List 4A. Conversely, imports from South Korea of products unaffected by Section 301 tariffs declined by almost two-thirds, offsetting some of South Korea's otherwise strong gains.

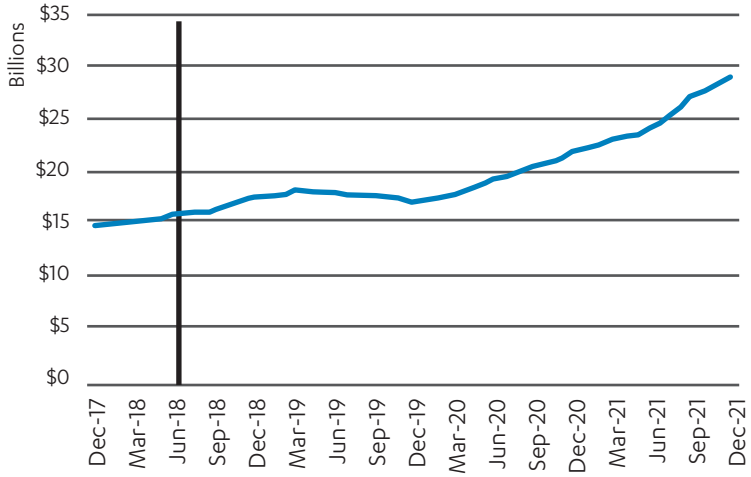
Among affected products, South Korea's growth story is about expanding exports of products that the U.S. was already buying in reasonably large quantities:

- Computer accessories, primarily on List 3, grew from $2.7 billion to $7.7 billion (+$5.0 billion, +187%)
- Solid-state drives on List 4A grew from $974 million to $4.9 billion (+$4.0 billion, +407%)
- Combination refrigerators-freezers on List 3 grew from $1.0 billion to $2.0 billion (+$1.0 billion, +100%), and
- Lithium-ion batters on List 4A grew from $566 million to $1.4 billion (+$2.8 billion, +173%) while battery parts on List 1 grew from $109 million to $786 million (+$678 million, +624%).

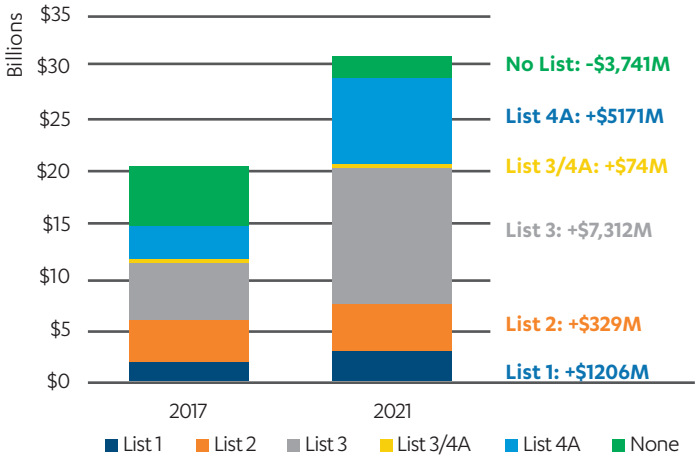
One "new" import from South Korea was smart cards on List 3, which grew from $5 million in 2017 to $151 million in 2021. While inconsistent, even "low" imports in a given month exceeded annual exports from just a few years earlier.

More like Taiwan than Vietnam, South Korea primarily capitalized on products where it already had a foothold in the U.S. market.

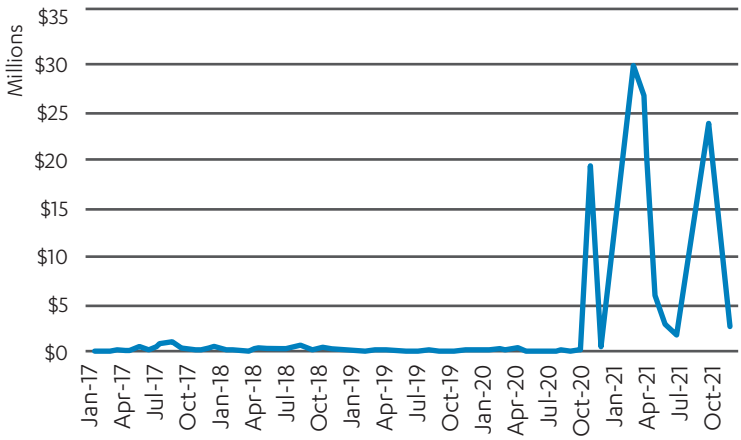
Imports of Section 301-Affected Tech Products from South Korea, Trailing 12 Months



Imports of Tech Products from South Korea, by Section 301 List



Monthly Imports of Smart Cards from South Korea



Imports of Section 301-affected tech products from Thailand were $23.3 billion in 2021, a 56% increase from the $14.9 billion in imports in 2017. Imports from Thailand were flat before Section 301 tariffs were imposed on China and actually declined for much of 2019. Like South Korea, U.S. imports from Thailand reversed in late 2019 and grew strongly throughout 2020 and 2021.

Again similar to South Korea, import growth for Thailand was largest for products on List 3 and List 4A. While List 1 products were the biggest category of imports from Thailand in 2017, and Section 301 tariffs have been in effect the longest, they were among the slowest-growing imports from Thailand between 2017 and 2021.

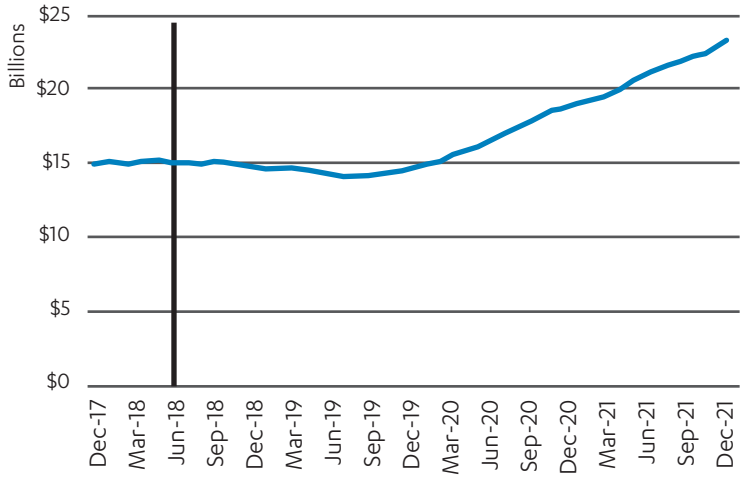
Among the affected products, some already large categories grew much bigger. For example:

- Hard drives, mostly on List 1 but also some on List 3, grew from $4.0 billion in 2017 to $6.5 billion in 2021 (+$2.5 billion, +61%);
- Solar cells, primarily on List 2, grew from $495 million to $1.3 billion (+$763 million, +143%), and
- Power adapters on List 3 grew from $254 million to $731 million (+$476 million, +187%).

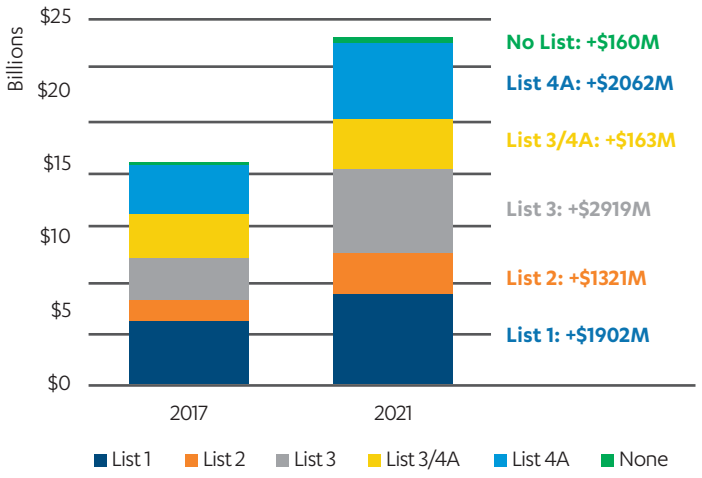
Other imports surged from virtually zero:

- Computer terminals on List 4A grew from just $130,000 in 2017 to $1.1 billion in 2021;
- Electric coffeemakers on List 4A grew from $8,000 to $135 million, and
- Upright freezers on List 3 grew from $2,400 to $90 million.

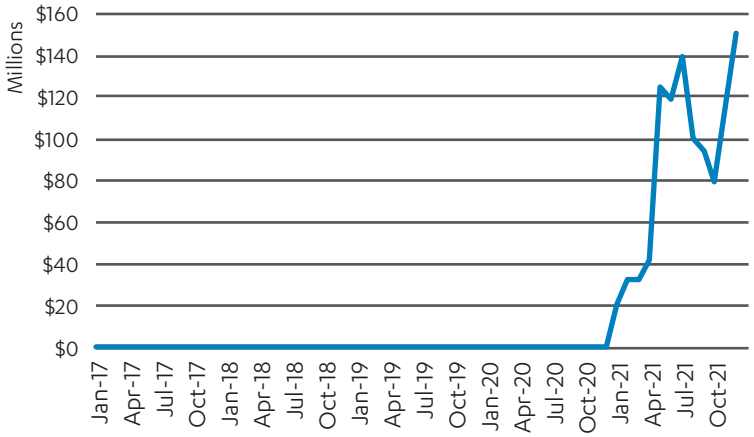
Imports of Section 301-Affected Tech Products from Thailand, Trailing 12 Months



Imports of Tech Products from Thailand, by Section 301 List



Monthly Imports of Computer Terminal from Thailand



Imports of Section 301-affected tech products from Mexico were $96.1 billion in 2021, a 22% increase from the $78.4 billion in imports in 2017. Mexico surpassed China as the largest supplier of these products. Imports were growing before Section 301 tariffs were imposed on China, and have continued to grow but not at a noticeably faster pace.

For Mexico, import growth was largest for products on List 3 and List 4A. Conversely, imports from Mexico of connected devices that were split between Lists 3 and 4A declined by over $2 billion.

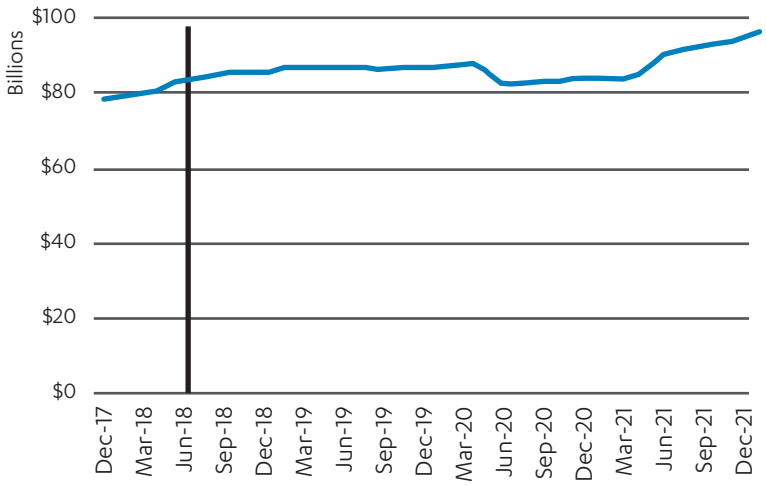
Among affected products, Mexico's growth story is about expanding exports of products that the U.S. was already buying in very large quantities:

- Desktop computers on List 3 grew from $17.6 billion in 2017 to $25.2 billion in 2021 (+$7.7 billion, +44%);
- TVs on List 3 grew from $8.4 billion to $12.3 billion (+$3.9 billion, +46%);
- Air conditioner parts on List 4A grew from $1.3 billion to $2.3 billion (+$995 million, +76%), and
- Computer accessories, primarily on List 3, grew from $283 million to $1.1 billion (+$846 million, +299%).

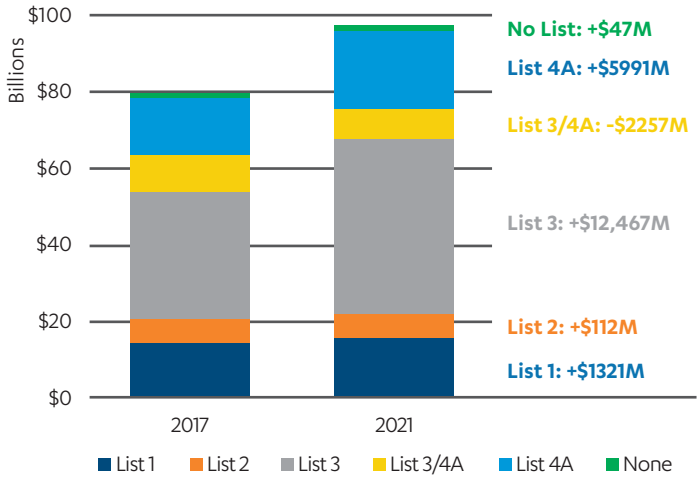
Solid-state drives on List 4A were one of the few products that grew sharply from a low base (for Mexico). U.S. imports grew from $66 million in 2017 to over $1.0 billion in 2021. Point-of-sales terminals on List 4A grew from less than $1 million to $145 million over the same period.

It is unsurprising that Mexico did not expand into many wholly new categories given the large volume of exports to the U.S. before Section 301 tariffs were imposed.

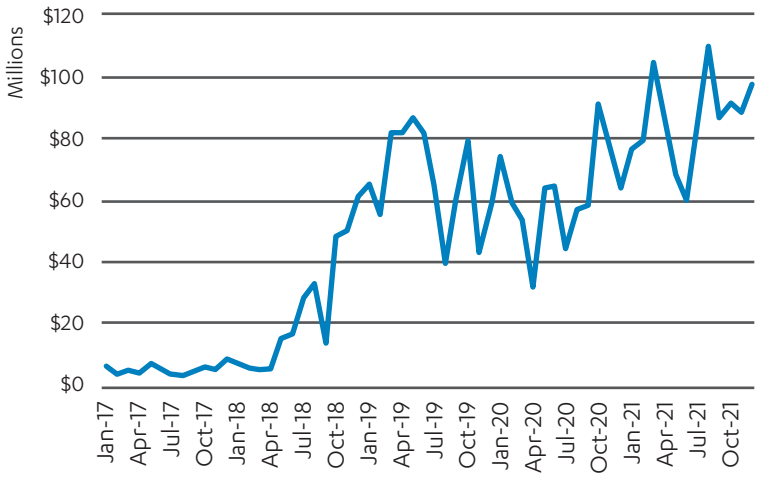
Imports of Section 301-Affected Tech Products from Mexico, Trailing 12 Months



Imports of Tech Products from Mexico, by Section 301 List



Monthly Imports of Solid-State Drives from Mexico



Imports of Section 301-affected tech products from the EU were $46.1 billion in 2021, a 22% increase from the $38.0 billion in imports in 2017. Imports from the EU were growing before Section 301 tariffs were imposed on China and continued on their trend through early 2020. After an apparent Covid dip and subsequent recovery, imports from the EU are back on their pre-Section 301 trend.

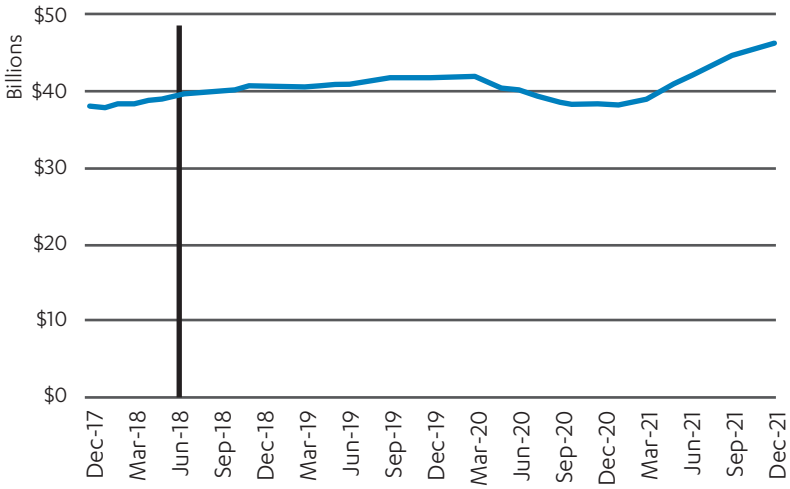
By value, import growth from the EU was largest for products on List 1, but that was due to the high starting value. Imports of connected devices that were split between Lists 3 and 4A grew by 39%, faster than any other group. Even products on no list grew faster than those on List 1, which imports of products on List 2 actually declined.

Among impacted products, the EU's growth story is wholly about expanding exports of products that the U.S. was already buying:

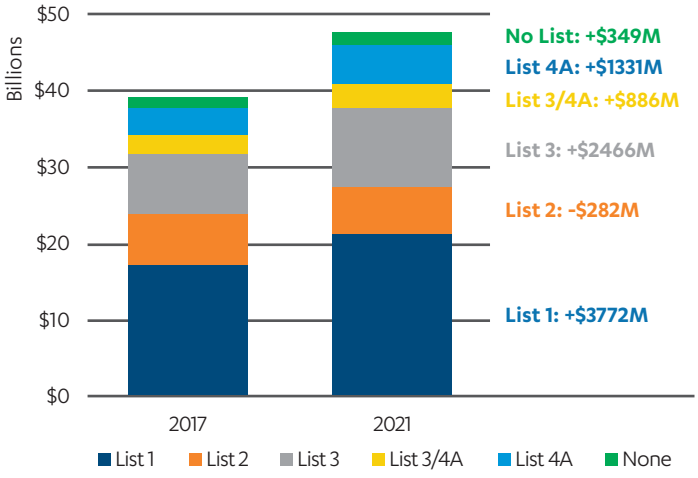
- Connected devices, split across Lists 3 and List 4A, grew from $2.3 billion to $3.2 billion (+$886 million, +39%);
- Power adapters on List 3 grew from $947 million to $1.6 billion (+$693 million, +73%)
- Electro-medical devices on List 1 grew from $1.0 billion to $1.6 billion (+630 million, +62%), and
- Lithium-ion batteries on List 4A grew from $78 million to $463 million (+$385 million, +496%).

There are almost no examples of "new" imports from the EU. Not a single product with imports under $25 million in 2017 had imports exceeding $60 million in 2021, though ultraviolet/infrared equipment and parts on List 1 were close.

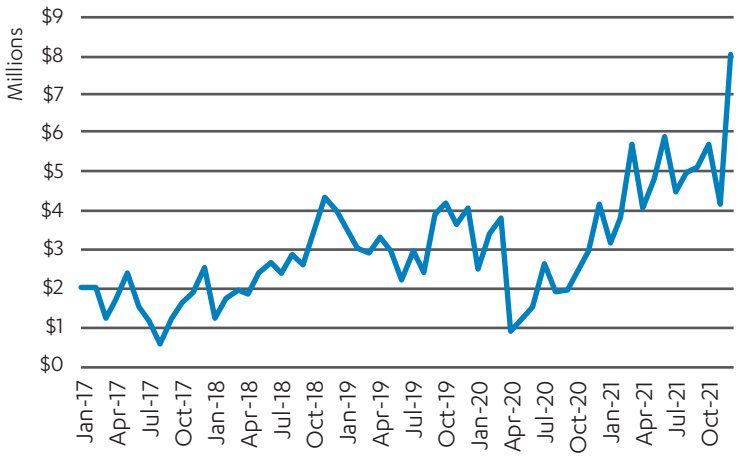
Imports of Section 301-Affected Tech Products from EU, Trailing 12 Months



Imports of Tech Products from Mexico, by Section 301 List



Monthly Imports of Ultraviolet/Infrared Equipment from the EU



Imports of Section 301-affected tech products from Malaysia were $39.3 billion in 2021, a 38% increase from the $28.4 billion in imports in 2017. Imports from Malaysia were growing slightly before Section 301 tariffs were imposed on China but mostly flatlined through early 2021. Only in early 2021 – nearly three years after tariffs were first imposed – did U.S. imports really start to rise.

For Malaysia, List 2 products accounted for over three-quarters of total growth. Connected devices split between Lists 3 and 4A declined by over 40%, and unaffected by Section 301 tariffs declined slightly as well.

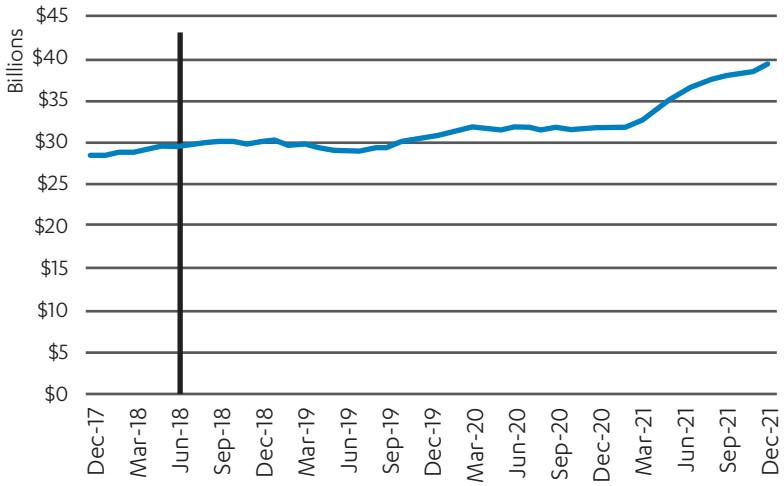
Among the affected products, some already large categories grew much bigger. For example:

- Semiconductors on List 2 grew from $11.0 billion in 2017 to $16.5 billion in 2021 (+$6.5 billion, +50%);
- Ink cartridges on List 4A grew from $773 million to $2.7 billion (+$1.9 billion, +253%), though imports of other ink cartridges on List 1 declined;
- Misc. equipment (e.g., remote controls), primarily on List 2, grew from $146 million to $1.3 billion (+$1.1 billion, +773%), and
- Solid-state drives on List 4A grew from $807 million to $1.6 billion (+$801 million, +99%).

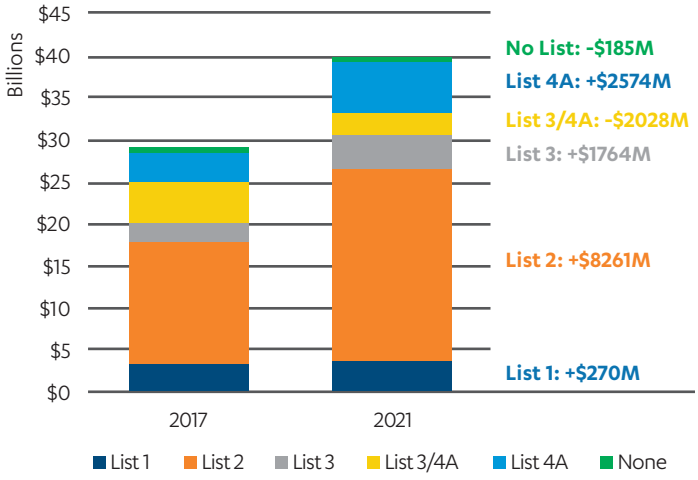
Other imports surged from low values:

- Semiconductor manufacturing machinery on List 2 grew from $11 million in 2017 to $342 million in 2021;
- Mounted loudspeakers on List 4A grew from $11 million to $205 million, and
- Thermostats on List 1 grew from $9 million to $126 million.

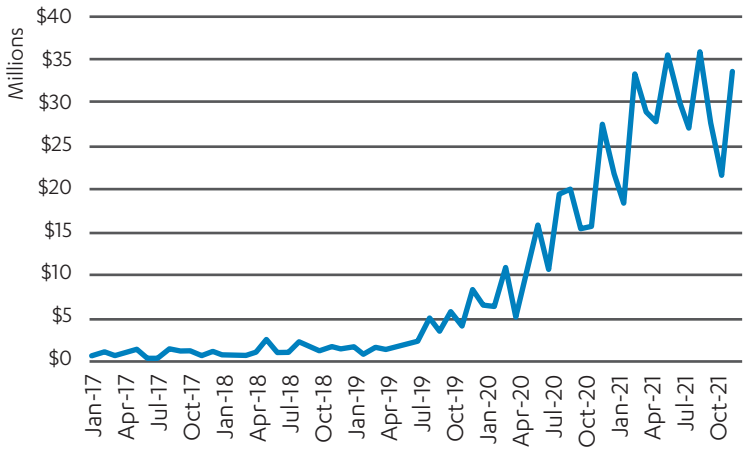
Imports of Section 301-Affected Tech Products from Malaysia, Trailing 12 Months



Imports of Tech Products from Malaysia, by Section 301 List



Monthly Imports of Semiconductor Mfg. Machinery from Malaysia



About the Data

The evolving nature of China Section 301 tariffs – in terms of products covered, implementation dates, and levels – complicates analyses of sourcing shifts. Below is an explanation of the ways the paper attempts to overcome those challenges, including the specific data points used in each situation.

The "consumer technology" sector: This analysis defines the consumer technology sector primarily as the subsectors included in the standard North American Industry Classification System (NAICS) Sector 334, plus select subsectors in NAICS 325, 333, 335, and 339. Specifically, it includes Printing Inks (NAICS 325910), Semiconductor Machinery (NAICS 333242), HVAC and Refrigeration Equipment (NAICS 3334), Household Appliances (NAICS 3352), Other Electrical Equipment and Component (NAICS 3359), and the piece of Dolls, Toys, and Games (NAICS 339930) that covers video game consoles. For products, trade data at the HTS10 level were matched to NAICS sectors using concordance files from the U.S. Census Bureau. In cross-industry comparisons, 3-digit NAICS sectors are divided between those considered "tech" products and those that are not to ensure there is no double-counting.

U.S. shipments data: Sector shipment data are from the U.S. Census Bureau's Manufacturer's Shipments, Inventories, and Orders (M3) Survey. Data are seasonally adjusted and reported in millions of dollars. Data in the report focus on NAICS 334 and the subsectors considered "consumer tech" within NAICS 3359. Shipments data are not available for the specific subsectors under NAICS 325, 333, or 339, and the consumer tech pieces represent too small a share of the overall category for aggregated data to provide useful insights.

U.S. employment data: Sector employment data are from the U.S. Bureau of Labor Statistics' Employment, Hours, and Earnings from the Current Employment Statistics survey. Data are seasonally adjusted. The level of sectoral detail available varies, and the report uses the most-detailed level available.

Trade trends, trailing 12 months: Annual data is not sufficient for assessing tariff impacts since most tariff actions took place throughout the year. However, monthly product-level data are subject to seasonal variation so a change in trade from one month to the next (e.g., from October to November) may reflect normal trade patterns instead of tariff effects. The paper generally uses trailing 12-month data (e.g., the sum of the 12 months) to show whether trade in a given month increased or decreased from the same month in the previous year. Reporting data on a rolling basis better shows inflection points – when the trend lines reverse – a key point when assessing impacts of new tariffs. The exception is "new" growth product graphs for other countries, which are shown for individual months.

Composition of imports affected by Section 301 tariffs: Trends for products hit with 25% tariffs in July 2018 are likely to be very different than trends for products hit with a 15% tariff more than a year later in September 2019. To assess which sectors or subsectors were most (or least) affected by Section 301 tariffs, the paper examines the share of 2017 imports – before any tariffs were announced – that were affected by a given action (e.g., List 1, List 2).

Average tariffs rates, current month: Unlike trade flows, tariffs rates are not affected by seasonal differences and therefore do not require use of the trailing 12-month data. In fact, using current month average tariff data better shows the tariff shocks companies faced, when those are increases (e.g., List 1 imposed or List 3 increased from 10% to 25%) or decreases (e.g., exemptions granted or List 4A reduced from 15% to 7.5%).

Estimated Section 301 costs: Trade Partnership Worldwide developed a "Tariff Tracker" database for Tariffs Hurt the Heartland that is updated with monthly "Imports for Consumption" and "Calculated Duties" data from the U.S. Census Bureau. Data are collected for Harmonized Tariff Schedule (HTS) 10-digit products – the most detailed available – for approximately 30 major suppliers as well as "rest of world." Estimated Section 301 costs are derived by analyzing the difference between the expected tariffs based on average 2017 (i.e., pre-trade war) rates and those reported by Census.

Estimated Section 301 exclusion values: Average tariff rates have increased due to Section 301 measures, but generally not by the full "published" rate (e.g., 25% for List 1). Furthermore, average rates have varied over time as exclusions were granted and allowed to lapse. Estimated Section 301 exclusion values are derived by analyzing the difference between the expected tariffs based on 2017 rates plus expected full Section 301 tariffs and those reported by Census.

However, such estimates are imperfect for several reasons:

1. tariff rate changes can take effect at any time whereas Census data are only available for full months;
2. non-Section 301 tariffs changes, such as duty-free treatment under the Miscellaneous Tariff Bill (MTB) or additional tariffs imposed under Section 232 or Section 201, cannot be separated in the Census data, and
3. there are known cases of Census reporting no calculated duties (e.g., because of mis- or double-classified products) that were in fact subject to Section 301 tariffs.

Furthermore, since most exclusions are for partial tariff lines instead of all products imported under a given code, it generally is not possible to use Census import data to isolate which of the above issues may be affecting a specific product, even at the 10-digit HTS level. These issues apply to all products, so even imperfect estimates can provide useful comparisons across sectors. That said, several steps were taken to avoid overstating the value of exclusions.

The first step to avoid overstating the value of tariff exclusions was to use the lowest possible rate for months with significant tariff rate changes. For example, List 3 tariffs of 10% took effect on September 24, 2018 and increased to 25% on May 10, 2019. However, when estimating the value of Section 301 tariffs that would have been collected with no exclusions, we applied a rate of 10% to the import values for October 2018 through May 2019 and a rate of 25% to the import values for June 2019 through June 2021. As such, estimated tariffs for the last 6 days of September 2018 are wholly excluded, while estimated tariffs for the last 3 weeks of May 2019 are understated.

The second step to avoid overstating the value of tariff exclusions was to analyze the difference in rates only for products known to have received exclusions. For example, automobiles imported under HTS 8703.23.0140 were included on List 1, and reported tariffs from July 2018 through June 2021 were about $400 million less than would be expected based on import values, MFN rates, and Section 301 rates. Our methodology would attribute these differences to the potential value of Section 301 exclusions. Yet HTS 8703.23.0140 did not receive any Section 301 exclusions and was not eligible for other tariff-reducing measures such as MTBs. Census officials were able to confirm that calculated duties had been misreported and corrected as of July 1, 2021, but not historically. Examining only products with known exclusions prevents similar cases from affecting the exclusion value and share analysis. Exclusion data came from Christine McDaniel and Joe Brunk with the Trade and Immigration Project of the Mercatus Center and is available at www.quantgov.org/tariffs#tariff-data.