

Investigating Economic Effects of 2018 Steel Tariff Imposition In Usa

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Abstract

In 2018, the Trump administration imposed a 25% tariff on steel imports from a number of countries. The administration justified this action by referring to section 232 of the 1962 Trade Expansion Act, which allows for the imposition of tariffs for ‘national security reasons.’ While the domestic American steel industry applauded the action, the tariffs have been extremely controversial and elicited consternation among countries and industries negatively affected. Overall, the tariffs had an initial positive impact on the steel industry, increasing both employment in American steel-producing firms and increasing prices charged for the high-demand commodity. However, this effect was relatively short-lived and was likely not as pronounced as the Trump administration would have preferred. Meanwhile, steel-consuming industries, such as the automobile industry, saw a steep rise in prices, a loss of competitiveness, and a significant drop in employment rates. Given that substantially more labor is employed in the steel-consuming industry as compared to the steel-producing industry, those negatively impacted by the use of tariffs significantly exceeded those who benefitted from them. Beyond the direct impacts on steel-producers and steel-consumers, the 2018 tariffs also had the effect of provoking retaliatory tariffs on a variety of American industries, which created to a phenomenon known as ‘cascading protection’ as ever more domestic industries, which experienced a loss of competitiveness as a result of the tariffs, lobbied the administration for the imposition of further tariffs.

Introduction:

Over the past few years, United States trade policy has undergone several significant shifts. Beginning in 2018, the Trump administration imposed a variety of tariffs across several industries, including a 25% tariff on imports of steel, citing national security reasons as its justification.¹ Though this justification has been disputed, the policy was nonetheless implemented, and has had a several wide-ranging ramifications. This paper investigates the effects of the imposition of tariffs across numerous areas.

Section one includes a literature survey, in which will be discussed the several sources which have informed this analysis. This includes literature from economic institutes and thinktanks such as the Peterson Institute of

¹ Chad P. Bown, “Trump’s Long-awaited Steel and Aluminum Tariffs Are Just the Beginning,” *Peterson Institute for International Economics*, March 26, 2018, <https://www.piie.com/blogs/trade-and-investment-policy-watch/trumps-long-awaited-steel-and-aluminum-tariffs-are-just> (accessed November 2021).

International Economics, the National Bureau of Economic Research, and the Brookings Institution. It also cites news articles on the effects of the Trump administration's steel tariffs from sources such as CNBC, Reuters, and the Wall Street Journal. Finally, this paper has also been heavily informed by analyses conducted by economists Mary Amiti, Stephen Redding, and David Weinstein, whose research on the effects of tariffs has been published in the Journal of Economic Perspectives.

Section two explains the rationale behind the Trump administration's 2018 tariffs on imported steel. This includes a definition of tariffs and 'beggar thy neighbor' policy, as well as an explanation of conventional economic thinking regarding the effects of tariffs. This section will then explain the manner in which the 2018 tariffs were implemented, specifically drawing attention to the volume of the steel trade impacted by the tariffs. It will also explain the aims behind the administration's imposition of tariffs as well as the trading partners most affected by the policy. As will be seen, some US trading partners sought out and received exemption from the tariffs, some countries agreed to place quotas on their exports of steel to the United States, while others were faced with having to pay the higher tariff rate. In response to the Trump administration's tariff policy, several US trading partners have themselves resorted to retaliatory, or compensatory, tariffs on American products, which must also be considered when investigating the effects of the steel tariffs in subsequent sections.

Moving forward, section three will focus on the impacts of the steel tariffs on the domestic American steel industry. This comprises effects on prices for American steel as well as effects on the employment level in the steel industry. Indeed, while some authors have credited the Trump administration with salvaging American steel, debate remains over the long-term impacts of the tariffs on domestic employment in this sector. As a case study, this analysis refers to the effects of the tariffs on a steel mill operating in Granite City, Illinois.

Subsequently, section four investigates the wide-ranging effects of the tariffs on steel-consuming industries. This section will examine how the tariffs affected prices and employment in these sectors, specifically looking at the US automotive industry as an example. This section will then examine other effects of the steel tariffs, such as the difficulty some firms have had in attaining tariff relief, the effects of retaliatory tariffs on American steel-consuming companies such as Harley-Davidson, and the effects of 'cascading protection' whereby negatively-affected industries began demanding further tariffs to protect their respective industries.

Finally, section five will summarize the key findings from this paper, and will consider whether the Trump administration's 2018 tariffs on the steel industry can be considered 'successful,' both in terms of the administration's original goals for the tariffs and from an economic point of view.

While this paper is focused specifically on the effects of the steel tariffs, it nonetheless bears mentioning that these tariffs were imposed during an escalating trade war initiated by the Trump administration, which made many other commodities subject to tariffs, such as aluminum, solar panels, washing machines, and a variety of imports from China. Furthermore, the COVID-19 pandemic wrought significant damage across the global economy. Therefore, it is difficult to precisely determine the extent to which impacts on steel and steel-consuming industries were a direct outcome of the steel tariffs, as these larger events likely played a major role as well.

Section 1: Literature Survey

This paper relies on a diverse array of sources to inform its analysis. These include studies from academic journals, thinktanks, legal documents, White House pronouncements, information from federal authorities such as the SEC and the Federal Reserve, as well as a host of relevant news articles.

Section two, in which the general economic theory of tariffs is provided, relies on sources from Investopedia, Trends Research and Advisory, the Peterson Institute for International Economics, and Adam Smith to provide definitions and explain the economic concepts and rationale behind tariffs. In discussing the 2018 tariffs specifically, this paper relies on government documents such as the 1962 trade expansion act, reports compiled by the Federal Reserve, and President Trump's 2018 announcement of the imposition of tariffs.

In section three, studies conducted by the Trade Partnership and the National Bureau of Economic Research are used to inform discussion of the effects of the 2018 tariffs on the domestic steel-producing industry. Additionally, articles from the Chicago Tribune, the Wall Street Journal, and the Peterson Institute for

International economics are used to provide case study information on Granite City, Illinois as well as information pertaining to the broader employment effects of the steel tariffs.

In section four, data compilations from the Federal Reserve, statista, and econofact are used as sources which illustrate the larger effects of the steel tariffs on steel-consuming industries. Furthermore, the SEC, the Peterson Institute for International Economics, and CNBC provide specific information on the effects of the steel tariffs on Harley-Davidson motorcycles. Information on the effects of retaliatory tariffs is gleaned from studies published in the Journal of Economic Perspectives, SSRN (formerly the Social Science Research Network), and the Trade Partnership. Finally, the Brookings Institution provides information relating to the effects of tariffs on government revenues.

Section 2: Theoretical Background of Tariff Effects in a Small Country

In order to understand both the rationale behind and the effects of the imposition of tariffs on imported steel in 2018, it is first necessary to provide a few definitions and to explain the basic economic theory around the effects of tariffs.

Tariffs can be defined as the tax paid when a given good crosses an international boundary with the intention of being sold in a foreign market. An import tariff refers to the tax paid on goods entering a domestic market, while an export tariff refers to the tax paid on goods leaving a domestic market.² The immediate cost of a tariff is borne by the importer of a good, though costs tend to be passed on to consumers in the form of higher prices. Tariffs can be expressed as a) an *ad valorem* tariff, which is a percentage of the price of a good, b) a *specific tariff*, which is a precise monetary amount paid per unit of import, or c) a *compound tariff*, which combines both a percentage of the price of a good with an additional monetary amount added on top.³

In order to understand the effects of tariffs, it is crucial to first define both consumer and producer surplus. Consumer surplus is defined as the measure of satisfaction of the consumer for having a price lower than that which they would be willing to pay for a given good.⁴ Typically, a higher price (caused by tariffs) therefore reduces total consumer surplus. On the other hand, producer surplus is defined as the measure of satisfaction of producers for having a market price higher than the minimum price they would be willing to charge.⁵ Thus, by raising the price of a good, tariffs have the effect of increasing the producer surplus.

Figure 1 illustrates the effects of tariffs on an imported good, plotted on a simple supply and demand curve.⁶ As can be seen, tariffs have the effect of artificially inflating the price of an imported good (the area between ‘world price’ and ‘world price + tariff’). By making it more expensive to import a good, tariffs benefit domestic industries involved in the production of that good – thus increasing producer surplus – as they face decreased competition and are able to increase their prices.

² Brent Radcliffe, “The Basics of Tariffs and Trade Barriers,” *Investopedia*, April 27, 2021, <https://www.investopedia.com/articles/economics/08/tariff-trade-barrier-basics.asp> (accessed November, 2021).

³ *Ibid.*

⁴ Chris Murphy, “Consumer Surplus,” *Investopedia*, April 27, 2021, https://www.investopedia.com/terms/c/consumer_surplus.asp (accessed November, 2021).

⁵ Charles Potters, “Producer Surplus,” *Investopedia*, October 31, 2021, https://www.investopedia.com/terms/p/producer_surplus.asp#:~:text=Producer%20surplus%20is%20the%20difference,the%20good%20in%20the%20market (accessed November, 2021).

⁶ Mahmood Mohammed Sharif, “Economic impact of US tariffs on steel and aluminum import,” *Trends Research*, March 4, 2020, <https://trendsresearch.org/insight/economic-impact-of-us-tariffs-on-steel-and-aluminum-import/> (accessed November, 2021).

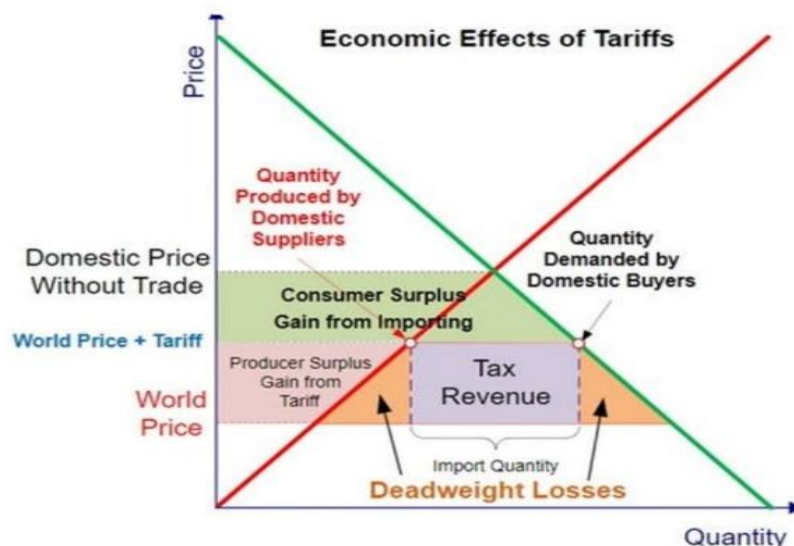


Figure 1: The economic effects of tariffs

The government also theoretically stands to benefit from tariff policy, as it gains from increased tax revenues. However, consumers (both individuals and businesses) are faced with higher prices as a result of tariff policies, and thus consumer surplus decreases. Therefore, domestic producers stand to gain the most from tariffs, while consumers stand to lose.⁷

Rationale Behind Tariffs

A government might impose tariffs for a number of reasons. First and foremost, tariffs are often resorted to as a means of protecting industry (either long-established or infant industry) from foreign competition. In making foreign imports of a good more expensive, so the theory goes, consumers will increase their consumption of identical or substitute domestic goods, thereby strengthening domestic industry by retaining or increasing employment and profits in that industry. Secondly, a tariff policy might also be employed in the context of a trade war or as retaliation for another country's imposition of tariffs. Finally, tariffs are sometimes justified on the grounds of safeguarding national security, under the notion that a country must domestically produce a given amount of a good deemed critical for national security.⁸

Overall, tariffs are part of what is called a 'Beggar-Thy-Neighbor' policy. This is a policy whereby one government attempts to address its economic woes by attempting to negatively impact the economies of other countries. This can be done either through the imposition of tariffs and import quotas or through the deliberate devaluation of a country's currency as a means of making imports more expensive and making exports cheaper.⁹ Although even Adam Smith argued that tariffs may be necessary in very specific cases related to national security, there is nonetheless broad consensus among economists that 'Beggar-Thy-Neighbor' policies tend to be counter-productive as tools of economic policy.¹⁰

⁷ Ibid.

⁸ Ibid.

⁹ Steven R. Weisman, "Whence Cometh Beggar-Thy-Neighbor," *Peterson Institute for International Economics*, February 10, 2009, <https://www.piie.com/blogs/realtime-economic-issues-watch/whence-cometh-beggar-thy-neighbor> (accessed November, 2021).

¹⁰ Adam Smith, "An Inquiry into the Nature and Causes of the Wealth of Nations," *ibiblio.org*, 2007, p. 465, https://www.ibiblio.org/ml/libri/s/SmithA_WealthNations_p.pdf, (accessed November, 2021).

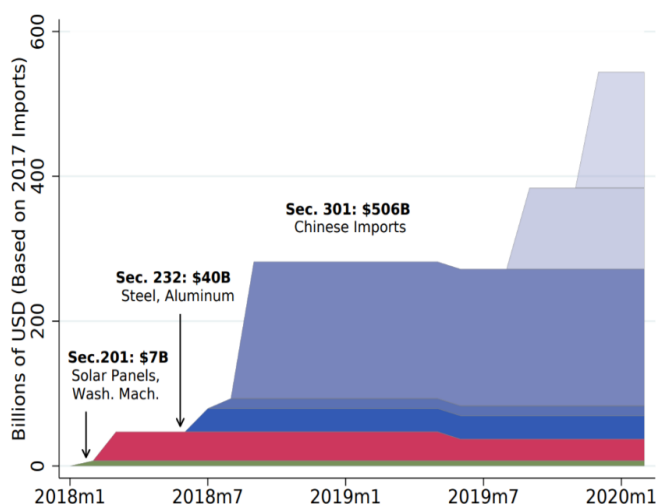


Figure 2: Escalation of tariffs 2018-2020

2018 Tariffs on Steel Imports

In 2017, the Trump administration announced an investigation into imports of steel into the United States. It justified this investigation by referring to section 232 of the Trade Expansion Act of 1962, which permits the imposition of tariffs on a good if that good is deemed essential for national security, therefore supporting the conclusion that substantial quantity of the good must be produced domestically.¹¹ By early 2018, the investigation concluded in the administration's favor, which then proceeded to announce a 25% *ad valorem* tariff on imported steel. The administration's stated aim was to boost domestic steel production to 80% capacity in order to safeguard national security.¹²

The national security rationale for the tariffs has been called into question, as the majority of steel imports into the United States emanate from close US allies. Indeed, though the tariffs were ostensibly aimed at decreasing steel imports from China, only 6% of the \$46 billion of steel imports affected by the tariffs came from China.¹³ Figure 2 below depicts a timeline of the Trump administration's tariffs, as well as an approximation of the volume of trade affected by the tariffs.¹⁴

In the immediate aftermath of the announcement, a variety of countries managed to secure a delay in the imposition of tariffs to allow time to arrive to an alternate agreement regarding their respective steel exports to the United States. For example, South Korea managed to gain permanent exemption from the steel tariff by agreeing to a quota of 2.68 million tons of steel to the United States; a drop of 21.2% from 2017 numbers. Argentina and Brazil also agreed to similar quotas, while Australia negotiated complete exemption from both quotas and tariffs.¹⁵ The US administration sought to negotiate quota agreements with countries subject to tariffs as a means of deterring transshipments of steel via countries not affected by the tariffs. However, this effort proved unsuccessful and the remaining steel exporters – the European Union (EU), Canada, India, Russia, China,

¹¹ US Congress. *United States Code: Trade Expansion Act of 1962*, 19 U.S.C. Pub. L. 87–794, 76 Stat. 872, p.877, <https://www.govinfo.gov/content/pkg/STATUTE-76/pdf/STATUTE-76-Pg872.pdf> (accessed November, 2021).

¹² U.S. President, Proclamation, "Proclamation Adjusting Imports of Steel Into the United States, Proclamation 9705 of March 8, 2018," *Federal Register* 83, No. 51 (March 15, 2018): 11625, <https://www.govinfo.gov/content/pkg/FR-2018-03-15/pdf/2018-05478.pdf> (accessed November, 2021).

¹³ Chad P. Bown, "Trump's Steel and Aluminum Tariffs: How WTO Retaliation Typically Works," *Peterson Institute for International Economics*, March 5, 2018, <https://www.piie.com/blogs/trade-and-investment-policy-watch/trumps-steel-and-aluminum-tariffs-how-wto-retaliation> (accessed November, 2021).

¹⁴ Aaron Flaaen, Justin Pierce, "Disentangling the Effects of the 2018-2019 Tariffs on a Globally Connected U.S. Manufacturing Sector," *Federal Reserve Board*, December 23, 2019, <https://www.federalreserve.gov/econres/feds/files/2019086pap.pdf> (accessed November, 2021).

¹⁵ Jeffrey J. Schott, "Korea Steel Deal Means More US Steel Barriers Lie Ahead," *Peterson Institute for International Economics*, March 28, 2018, <https://www.piie.com/blogs/trade-and-investment-policy-watch/korea-steel-deal-means-more-us-steel-barriers-lie-ahead> (accessed November, 2021).

Japan, Turkey, and Mexico – were hit by the Trump administration’s 25% tariff in May, 2018. These countries, which accounted for 70% of US steel imports in 2017, proceeded to impose retaliatory tariffs on a variety of goods from the United States, the effects of which will be discussed in section four.¹⁶

Section 3: Effects of Tariffs on American Steel Industry

The 2018 announcement of the imposition of tariffs on steel was met with approval from the steel industry in the United States, which has long advocated for protectionist tariffs, particularly given strong competition from Europe, Japan and South Korea. A narrow focus on the effects of the tariffs on the domestic steel-producing industry in the United States finds that American steel producers did see some benefit from the tariffs. However, it is difficult to ascertain precise figures on both the long-term effects of the tariffs on employment in the steel-producing industry as well as on steel production.

Case Study: US Steel in Granite City, Illinois

Though most macroeconomic analyses of the 2018 tariffs have found a net negative impact, there are nonetheless instances in which the Trump administration’s tariffs have been welcomed. One example is Granite City, Illinois. In 2015, the United States Steel Corporation laid off 2,000 workers and idled its steel mill in Granite City.¹⁷ However, upon announcing the 25% steel tariff in 2018, US Steel announced that it was restarting two blast furnaces and proceeded to hire 500 workers (many of whom had been made redundant in 2015), anticipating an annual capacity of 1.5 million tons of raw steel production.¹⁸ Thus, it is little surprise that the company has remained a steadfast supporter of the tariffs. In a statement, the company said “*By reducing imports, the tariff strengthened the domestic steel industry and our country’s manufacturing base.*”¹⁹ However, the broader long-term effects of the tariffs on the US steel-producing industry paint a more nuanced picture.

Price and Employment Effects

Chad P. Bown, calculated that an increase in steel prices charged by domestic steel producers would likely increase employment in the steel industry by 8,700 jobs and that steel firms on average would yield \$270,000 of additional pre-tax profits per job created; a grand total of increased pre-tax profits in the steel industry of approximately \$2.4 billion (8,700 x 270,000). As a result of the tariff policy, Bown estimated that US steel prices would rise 8.9% in 2018 as compared with 2017.²⁰ However, employment levels in the steel-producing industry are likely to be less pronounced, as technological improvements over recent decades have significantly increased per worker output. For example, in 2008, annual steel output per worker amounted to 540 tons, but by 2017 that figure had increased to 598 tons.²¹ This suggests that, while the tariffs may have increased employment in the steel sector, technological change likely prevented a return to steel sector employment levels seen in previous decades.

Various analyses have been conducted on the effects of the steel tariffs on prices and employment. For example, the Wall Street Journal found that within four months of the start of steel tariffs, sheet-steel prices surged to a 10-

¹⁶ Joseph Francois, Laura Baughman, Daniel Anthony, “Policy Brief Round 3: ‘Trade Discussion’ or ‘Trade War’? The Estimated Impacts of Tariffs on Steel and Aluminum,” *Trade Partnership Worldwide LLC*, June 5, 2018, <https://tradepartnership.com/wp-content/uploads/2018/06/232RetaliationPolicyBriefJune5.pdf> (accessed November, 2021).

¹⁷ Samantha Bomkamp, “Trump’s tariffs revive Granite City jobs, and optimism,” *Chicago Tribune*, July 6 2018, <https://www.chicagotribune.com/business/ct-biz-granite-city-us-steel-trump-tariffs-20180708-story.html> (accessed November, 2021).

¹⁸ Nick Carey, “Trump metals tariffs make Granite City great again, but at what cost?” *Reuters*, May 25, 2018, <https://www.reuters.com/article/us-usa-trump-tariffs-steel/trump-metals-tariffs-make-granite-city-great-again-but-at-what-cost-idUSKCN1IQ1YL> (accessed November, 2021).

¹⁹ Bob Tita, William Mauldin, “Tariffs Didn’t Fuel Revival for American Steel,” *The Wall Street Journal*, October 28, 2020, <https://www.wsj.com/articles/tariffs-didnt-fuel-revival-for-american-steel-11603877400> (accessed November, 2021).

²⁰ Gary Clyde Hufbauer, Euijin Jung, “Steel Profits Gain, but Steel Users Pay, under Trump’s Protectionism,” *Peterson Institute for International Economics*, December 20, 2018, <https://www.piie.com/blogs/trade-investment-policy-watch/steel-profits-gain-steel-users-pay-under-trumps-protectionism> (accessed November, 2021).

²¹ Ibid.

year high of \$920 per metric ton.²² The same report estimated that approximately 6,000 jobs were added to the steel industry in the United States after the initiation of the tariff policy. Furthermore, the tariffs appear to have increased the operating capacity of US steel mills to 80% in 2019.²³ These numbers are roughly in line with the estimates of Mr. Bown.

However, those gains quickly dissipated by the end of 2019, as steel demand and prices saw a decline. For example, by April, 2020, American steel mills were operating at 56% capacity, while the sheet-steel price per ton had declined to \$485, nearly half of the 2018 high, leading steel companies to idle plants across the United States.²⁴ It is worth noting that non-tariff factors, such as the wide-ranging economic effects of the COVID-19 pandemic, have also significantly impacted the steel industry, and thus it is difficult to precisely separate the effects of the steel tariffs from wider macroeconomic processes.

Figure 3 depicts 2018 prices of domestically-produced hot rolled steel. After the imposition of tariffs, prices for hot rolled steel saw an increase to a high of \$915 per ton.²⁵ However, by the first quarter of 2019, that figure had declined to \$754 per ton.²⁶ This suggests that gains in the steel industry were short-lived.

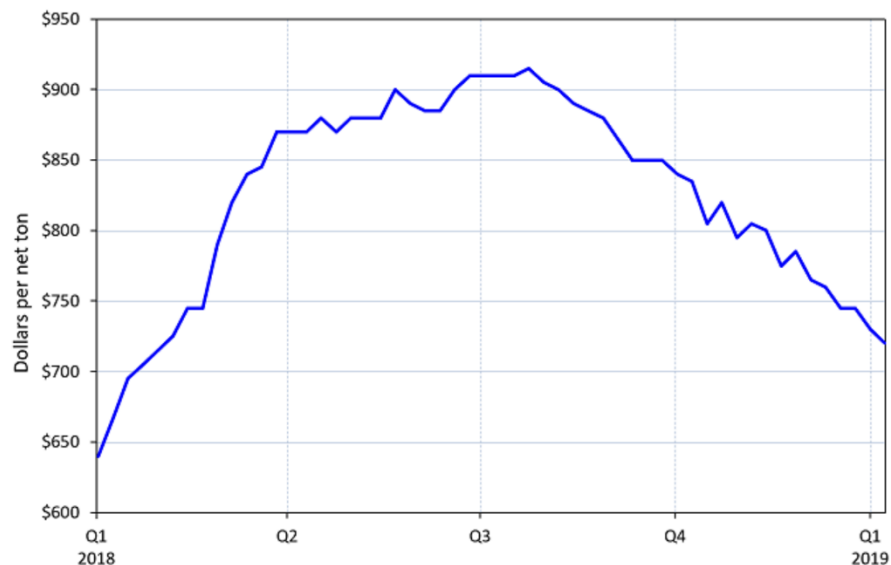


Figure 3: Prices of domestically-produced hot rolled steel

Moreover, according to the Bureau of Labor Statistics, employment in blast furnaces and steel furnaces modestly increased after the imposition of steel tariffs, as shown in figure 4.²⁷ While in 2017, approximately 80,600 workers were employed in these jobs, that figure increased to approximately 83,000 by 2019.²⁸

Therefore, though different analyses have produced various figures, it is fair to say that employment in the steel industry saw a modest increase, while prices initially surged significantly before experiencing a substantial

²² Bob Tita, William Mauldin, "Tariffs Didn't Fuel Revival for American Steel," *The Wall Street Journal*, October 28, 2020, <https://www.wsj.com/articles/tariffs-didnt-fuel-revival-for-american-steel-11603877400> (accessed November, 2021).

²³ Bob Tita, "Steelmakers' Worst Slump in a Decade Seen Getting Worse," *The Wall Street Journal*, April 19, 2020, <https://www.wsj.com/articles/steelmakers-suffer-worst-slump-in-a-decade-11587297601> (accessed November, 2021).

²⁴ Ibid.

²⁵ John Packard, Jim Triplett, "2018 steel year in review," *The Fabricator*, January 16, 2019, <https://www.thefabricator.com/thefabricator/blog/metalsmaterials/2018-steel-year-in-review> (accessed November, 2021).

²⁶ Ibid.

²⁷ Statista, "Employment in U.S. iron and steel industry from 2013 to 2019, by category," 2021, <https://www.statista.com/statistics/813419/employment-in-the-us-steel-industry/> (accessed November, 2021).

²⁸ Ibid.

decline. This suggests that producer surplus in the domestic steel-producing industry experienced short-term gains.

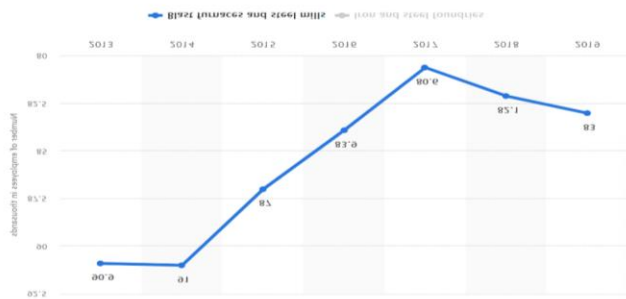


Figure 4: Yearly employment (in 1,000s) in blast furnaces and steel mills

Effects on Domestic Steel Production

Regarding overall domestic steel production, economists Mary Amiti, Stephen J. Redding, and David E. Weinstein estimated that the tariffs would increase US annual domestic steel output by 2% between the third quarter of 2017 and the first quarter of 2019.²⁹ This number is far lower than what might be expected after the implementation of a 25% steel tariff, something which the economists attribute to foreign steel producers lowering their prices in response to the Trump administration’s tariffs, and thus retaining more of their domestic American market share than might have been anticipated.³⁰

According to the US Geological Survey, and as depicted in figure 5, domestic American steel production increased from 86.6 million metric tons in 2018 to 87.8 million metric tons in 2019, or approximately 1.4%.³¹ These gains were still below a 2008 high of 91.9 million metric tons, and in 2020 steel production experienced a significant slump, some of which is likely attributable to the economic effects of the COVID-19 pandemic. Nonetheless, in the long-run, it is anticipated that the steel tariffs will not significantly benefit US steel producers and that the gains for US steel production may prove short-lived.

Year	Steel (in million metric tons)
2020*	72
2019	87.8
2018	86.6
2017	81.6
2016	78.5
2015	78.8
2014	88.2
2013	86.9
2012	88.7
2011	86.4
2010	80.5
2009	59.4
2008	91.9

Figure 3: Yearly domestic steel output

²⁹ Mary Amiti, Stephen J. Redding, David E. Weinstein, “Who’s Paying for the US Tariffs? A Longer-Term Perspective,” *National Bureau of Economic Research*, January 2020, https://www.nber.org/system/files/working_papers/w26610/w26610.pdf (accessed November, 2021).

³⁰ Ibid/

³¹ Statista, “Steel production figures in the U.S. from 2006 to 2020,” 2021, <https://www.statista.com/statistics/209343/steel-production-in-the-us/> (accessed November 2021).

Section 4: Effects of Tariffs on Steel-Consuming Industries

Prices and Employment

As a result of the rise in steel prices caused by the 2018 tariffs, steel-consuming industries found themselves faced with significantly higher input costs, which has had serious effects on employment levels in steel-consuming industries.³² In the United States, there are over 12 million jobs associated with the use of steel in their production, and 2 million of these jobs are considered ‘steel intensive’ (meaning that steel accounts for over 5% of the industry’s total input).³³ These industries include automobile manufacture, household appliances, agricultural machinery, machinery used for mining, oil extraction, and construction, as well as batteries and military vehicles.³⁴

In the previously-cited analysis by Chad P. Bown of the Peterson Institute of International Economics, it was found that an average increase of steel prices by 8.9% would lead to an overall increase in costs in the steel-using industry by \$5.6 billion.³⁵ Put differently, if steel producers found themselves earning an average of \$270,000 per job in the steel-producing industry as a result of the tariffs, steel-consuming firms were estimated to pay an additional \$650,000 per job.³⁶ Amity, Redding, and Weinstein’s analysis found that the costs of the tariffs were almost entirely borne by American firms and consumers, while not significantly making US steel firms more competitive in the long run due to the fact that foreign steel exporters significantly lowered their prices in response to the tariffs.³⁷

Additionally, while domestic steel-consuming industries were heavily affected by the tariffs, it is also important to note that the services sector has also been heavily affected by the tariffs. This is because the service industry is significantly impacted by fluctuations in other sectors, as higher prices tend to reduce consumer spending, which then leads to lower employment in the service industry.³⁸

Manufacturing Sector Impacts

A study released by the Federal Reserve Board of Governors found that increased input costs associated with the steel tariffs generated a decline in manufacturing jobs by 0.6%, or 75,000 jobs. The report included figures on the overall manufacturing sector in the United States from January, 2017 through to August, 2019. Illustrated in figure 6, this report found that the 2018 tariffs on a variety of goods was the likely culprit of a general slump industrial production (IP on the graph) in the United States.³⁹ Meanwhile, employment levels in manufacturing also stalled after the imposition of tariffs. Though figure 6 depicts general manufacturing industry figures, and not the steel-consuming industry alone, it is nonetheless likely that declines in steel-consuming industry production and employment constitute a component of this general decline.

³² Aaron Flaaen, Justin Pierce, “Disentangling the Effects of the 2018-2019 Tariffs on a Globally Connected U.S. Manufacturing Sector,” *Federal Reserve Board*, December 23, 2019, <https://www.federalreserve.gov/econres/feds/files/2019086pap.pdf> (accessed November, 2021).

³³ Kadee Russ, Lydia Cox, “Steel Tariffs and U.S. Jobs Revisited,” *Econofact*, February 6, 2020 <https://econofact.org/steel-tariffs-and-u-s-jobs-revisited> (accessed November, 2021).

³⁴ Ibid.

³⁵ Gary Clyde Hufbauer, Euijin Jung, “Steel Profits Gain, but Steel Users Pay, under Trump’s Protectionism,” *Peterson Institute for International Economics*, December 20, 2018, <https://www.piie.com/blogs/trade-investment-policy-watch/steel-profits-gain-steel-users-pay-under-trumps-protectionism> (accessed November, 2021).

³⁶ Ibid.

³⁷ Mary Amity, Stephen J. Redding, David E. Weinstein, “The Impact of the 2018 Tariffs on Prices and Welfare,” *Journal of Economic Perspectives*, Fall, 2019 <https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.33.4.187> (accessed November, 2021).

³⁸ Joseph Francois, Laura Baughman, Daniel Anthony, “Policy Brief Round 3: ‘Trade Discussion’ or ‘Trade War’? The Estimated Impacts of Tariffs on Steel and Aluminum,” *Trade Partnership Worldwide LLC*, June 5, 2018, <https://tradepartnership.com/wp-content/uploads/2018/06/232RetaliationPolicyBriefJune5.pdf> (accessed November, 2021).

³⁹ Aaron Flaaen, Justin Pierce, “Disentangling the Effects of the 2018-2019 Tariffs on a Globally Connected U.S. Manufacturing Sector,” *Federal Reserve Board*, December 23, 2019, <https://www.federalreserve.gov/econres/feds/files/2019086pap.pdf> (accessed November, 2021).

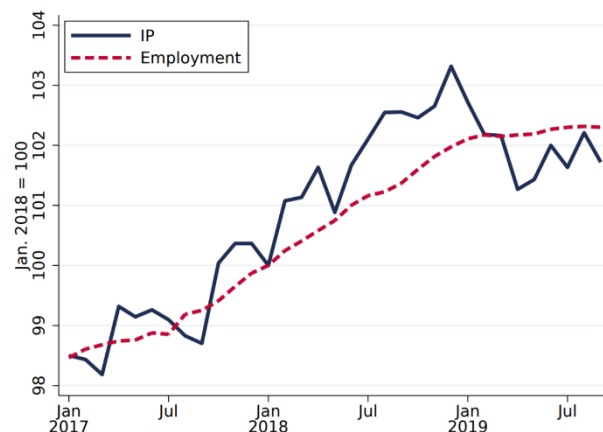


Figure 4: Measure of US Manufacturing Activity (Jan 2017 - Aug 2019)

Case Study: American Keg Co.

To take one example, the increase in steel prices negatively affected American Keg Company, a US-based keg-manufacturing company, as production costs increased and the company was forced to increase prices on its product. In order to cope with the increase in the price of steel (which reached a 10-year high immediately after the imposition of tariffs), American Keg Co. cut its workforce by one third and production was cut by 36%, from 275 to 175 kegs per day.⁴⁰ Furthermore, CEO Paul Czachor warned that the steel tariffs made his company significantly less competitive than kegs imported from Germany, Mexico, or China.⁴¹ This is because the Trump administration's tariffs only applied to raw steel and not to finished products with steel content. Therefore, imported steel kegs saw no price rise, while Czachor's American Keg Co. was forced to increase prices.

Overall, the company found itself paying higher prices for steel inputs, increasing the costs of its products in order to meet these higher prices, and facing decreased competitiveness in relation to foreign competitors. This experience has been replicated in firms throughout the steel-consuming industry.

Retaliatory Tariffs

According to the rules of the World Trade Organization (WTO), a country is permitted to retaliate (or seek 'compensation') against tariffs enacted against it by issuing countermeasures set at the value of that country's lost trade.⁴² The countries hit hardest by the 2018 steel tariffs were Canada, the EU, South Korea, and Mexico, all of which disputed the 'national security' justification for the imposition of tariffs.⁴³

In retaliation for the Trump administration's tariffs, affected countries filed cases against the United States in the WTO.⁴⁴ Though retaliation may technically not occur until the WTO rules in the plaintiff's favor, countries affected by the Trump administration's tariffs nonetheless pursued retaliation immediately by issuing tariffs on a variety of US industries. In the analysis by Amity, Redding, and Weinstein, it was found that these retaliatory tariffs cost US exporters approximately \$2.4 billion per month.⁴⁵

⁴⁰ Kate Rogers, "One US company feeling the heat from Trump's tariffs is hoping for more relief – from more tariffs," *CNBC*, August 22, 2018 <https://www.cnn.com/2018/08/22/one-us-company-feeling-the-heat-from-trumps-tariffs-is-hoping-for-relief-from-more-tariffs.html> (accessed November, 2021).

⁴¹ Chad P. Bown, "Trump's steel and aluminum tariffs are cascading out of control," *Peterson Institute for International Economics*, February 4, 2020, <https://www.piie.com/blogs/trade-and-investment-policy-watch/trumps-steel-and-aluminum-tariffs-are-cascading-out-of-control> (accessed November, 2021).

⁴² Joseph Francois, Laura Baughman, Daniel Anthony, "Policy Brief Round 3: 'Trade Discussion' or 'Trade War'? The Estimated Impacts of Tariffs on Steel and Aluminum," *Trade Partnership Worldwide LLC*, June 5, 2018, <https://tradepartnership.com/wp-content/uploads/2018/06/232RetaliationPolicyBriefJune5.pdf> (accessed November, 2021).

⁴³ *Ibid.*

⁴⁴ Mary Amity, Stephen J. Redding, David E. Weinstein, "The Impact of the 2018 Tariffs on Prices and Welfare," *Journal of Economic Perspectives*, Fall, 2019 <https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.33.4.187> (accessed November, 2021).

⁴⁵ *Ibid.*

The EU retaliated by raising tariffs on a variety of goods. These tariffs impacted \$995 million of steel imports from the United States, as well as a number of specific items. Figure 7 illustrates the retaliatory tariffs imposed by the EU.⁴⁶

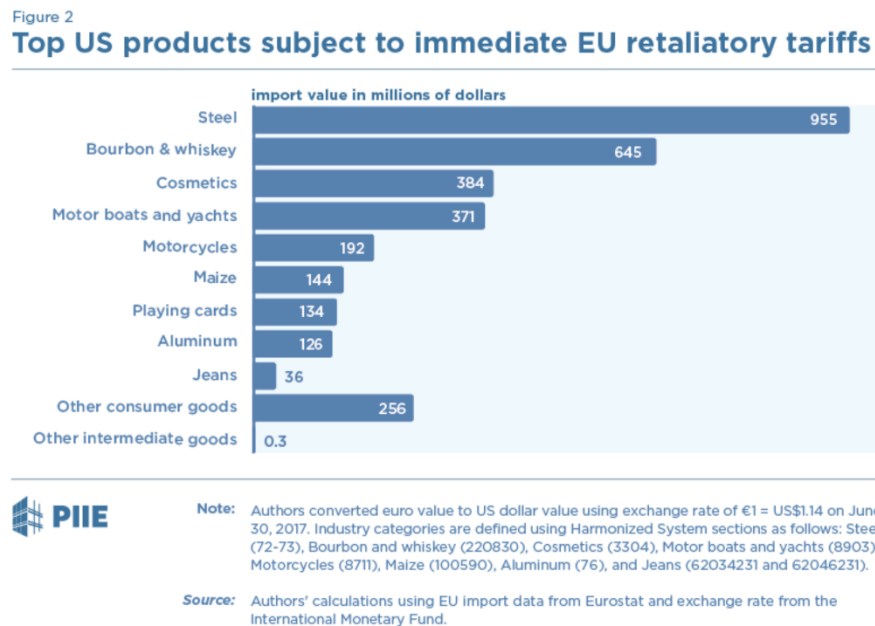


Figure 5: US Products Subject to EU Retaliation

Case Study: Harley Davidson

Among the goods which experienced a rise in EU tariffs were Harley-Davidson motorcycles, which saw a tariff increase from 6% to 31% in retaliation for the Trump administration's steel tariffs. According to the company's analysis, this tariff would increase the cost of a Harley-Davidson motorcycle exported to the EU by approximately \$2,200.⁴⁷ In addition to the retaliatory tariffs, the EU signed a free trade agreement with Japan in 2018, covering a wide range of products. According to the agreement, tariffs on motorcycles from Japan – such as those produced by Honda, Yamaha, and Kawasaki – would gradually decrease from 6% to 0% over the course of four years.⁴⁸

As a result, Harley-Davidson anticipated a significant loss in competitiveness in the EU motorcycle market, the company's second largest market after the United States. Therefore, in 2018, Harley-Davidson announced intentions to shift production of motorcycles overseas so as to circumvent the 31% tariff on motorcycles exported from the United States and intended for sale in the EU.⁴⁹ Such a move would likely lead to domestic employment losses in the United States as an indirect result of the 2018 imposition of retaliatory tariffs.

Cascading Protection

⁴⁶ Chad P. Bown, "Harley Is a Tariff Trend Setter – But Not in a Good Way," *Peterson Institute for International Economics*, June 29, 2018, <https://www.piie.com/blogs/trade-investment-policy-watch/harley-tariff-trend-setter-not-good-way> (accessed November, 2021).

⁴⁷ U.S. Securities and Exchange Commission, *Form 8-K Current Report*, June 25, 2018, <https://www.sec.gov/Archives/edgar/data/793952/000079395218000038/a8-kitem701tariffdisclosur.htm> (accessed November, 2021).

⁴⁸ Chad P. Bown, "Harley Is a Tariff Trend Setter – But Not in a Good Way," *Peterson Institute for International Economics*, June 29, 2018, <https://www.piie.com/blogs/trade-investment-policy-watch/harley-tariff-trend-setter-not-good-way> (accessed November, 2021).

⁴⁹ *Ibid.*

Another downstream economic impact of the 2018 steel tariffs has been a phenomenon that economists refer to as ‘cascading protection,’ whereby domestic industries negatively impacted by the imposition of tariffs in one sector begin demanding that the government protect their industries through the imposition of further tariffs.⁵⁰ As has been seen, domestic steel-consuming industries experienced a rise in input prices as a result of the 2018 steel tariffs. This price rise was largely passed on to consumers through an increase in prices in order to generate sufficient revenue to afford the higher steel input costs. As a result, consumption of products with high steel content which were not subjected to tariffs – such as steel nails as well as steel and aluminum bumpers – saw a shift to foreign suppliers capable of offering lower prices than their American counterparts. As a result, in January, 2020, The Trump administration extended its national security tariffs to cover steel nails and steel and aluminum automobile bumpers. As illustrated in figure 8, the new round of ‘cascading protection’ affected a total of nearly \$450 million in imports.⁵¹

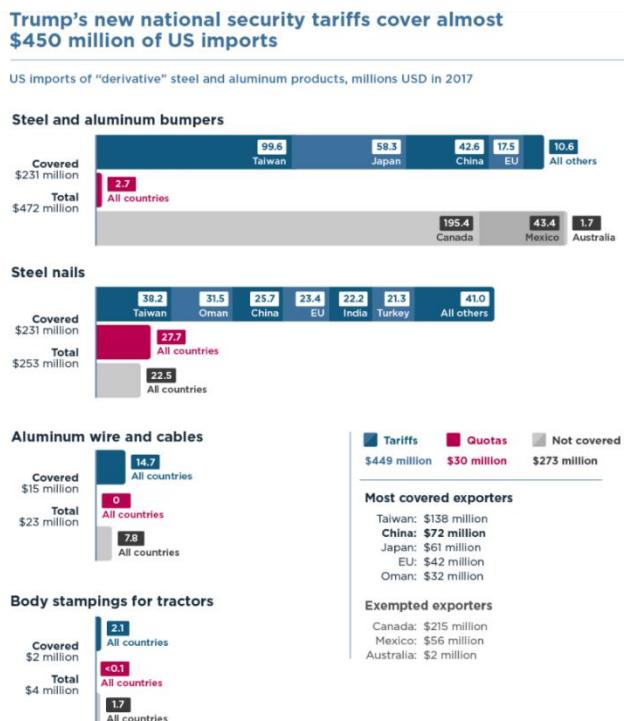


Figure 6: Cascading Protection

Bureaucratic Hurdles

Another impact of the 2018 tariffs has been an increase in bureaucracy. Faced with the prospect of increased import costs for US steel-consuming industries, numerous US firms sought exemption from the tariffs. Therefore, the Trump administration established a process for filing an ‘exclusion request’ with the Department of Commerce and the Bureau of Industry and Security.⁵² This process stipulated that firms may only obtain the desired exemption if proof can be provided that there is not a sufficient quantity of domestically-produced alternatives for the good required.

In the aftermath of the introduction of tariffs, the Department of Commerce was faced with over 100,000 exclusion requests.⁵³ This has put pressure both on firms to expend resources in an attempt to obtain exclusion requests, as well as on the government to vet and approve or deny such requests.

⁵⁰ Chad P. Bown, “Trump’s steel and aluminum tariffs are cascading out of control,” *Peterson Institute for International Economics*, February 4, 2020, <https://www.piie.com/blogs/trade-and-investment-policy-watch/trumps-steel-and-aluminum-tariffs-are-cascading-out-of-control> (accessed November, 2021).

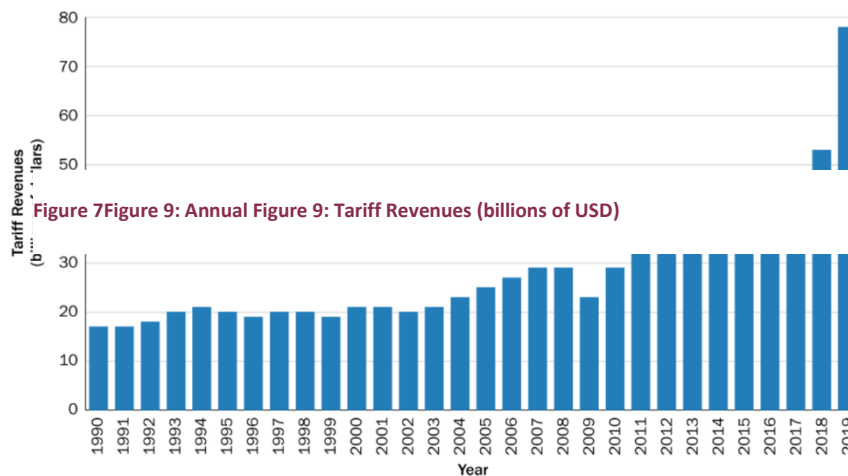
⁵¹ Ibid.

⁵² Yeo Joon Yoon Wongi Kim, “Trump Tariff and Firm Relief: Winners and Losers from Steel Tariff Exclusion Request,” *SSRN*, October 1, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3700752 (accessed November, 2021).

⁵³ Chad P. Bown, “How Biden and Europe settled Trump’s steel and aluminum tariffs,” *Tradetalks*, November 7, 2021 <https://www.tradetalkspodcast.com/podcast/159-how-biden-and-europe-settled-trumps-steel-and-aluminum-tariffs/>

Increased Government Revenue

Finally, the imposition of tariffs in 2018 has had the expected impact of increasing government revenues. Figure 9 illustrates that 2018 and 2019 saw significant increases in such revenues.⁵⁴ These revenues come from the imposition of tariffs on steel as well as on a host of other industries throughout 2018 and 2019. Figure 9 shows the increase in overall tariff revenues first to \$53bn (2018) and then to \$78bn (2019)



Section 5: Summary and Conclusion

While the 2018 steel tariffs were only a component of the general tariff and trade war policies pursued by the Trump administration, a number of lessons can be gleaned from an investigation into their effects from both an economic and policy standpoint.

From a strictly economic standpoint, it has been found that the imposition of tariffs on imported steel had a net negative effect for the US economy. While the tariffs did succeed in initially increasing profits and prices charged in the steel-producing industry, this increase was both less than might be expected and relatively short-lived. Meanwhile, the increase in prices borne by steel-consuming industries, which are far greater in both quantity of firms and number of workers employed, contributed to a fall in profits, an increase in layoffs, and a decrease in manufacturing output.

From a policy standpoint, the tariffs can also be largely said to have been a failure. While it is true that domestic steel-producing capacity was boosted to 80% in 2019, thus satisfying an initial stated aim of the Trump administration, it is questionable whether this was a price worth paying. This is especially the case given that the majority of US steel imports emanated from US allies before the imposition of the tariffs, thus casting doubt upon the section 232 ‘national security’ justification used by the administration.

Furthermore, the 2018 tariffs elicited retaliatory tariffs, which hurt several steel-consuming US industries, making them less competitive in both foreign and domestic markets. They also led to a variety of other tariffs being imposed in order to protect industries negatively affected by the initial steel tariffs.

In conclusion, the 2018 steel tariffs were largely unsuccessful from both economic and policy perspectives. This validates the wide consensus among economists that tariffs inflict more harm than good and are an irrational policy choice to pursue.

(accessed November, 2021).

⁵⁴ Geoffrey Gertz, “Did Trump’s tariffs benefit American workers and national security?” *Brookings*, September 10, 2020, <https://www.brookings.edu/policy2020/votervital/did-trumps-tariffs-benefit-american-workers-and-national-security/> (accessed November, 2021).

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