

The Economic Impact of Steel and Aluminum Tariffs

Introduction

A trade war has been brewing between the U.S. and many other countries under the Trump Administration. What started as tariffs on 18 products in January 2018, such as solar panels and washing machines, has grown to encompass more than 10,000 products.¹ To provide a focused analysis on the economic impacts of some of these new tariffs, FTI Consulting has researched and analyzed how two of the most contentious tariffs – 25% on steel and 10% on aluminum – could affect economic sectors and national economies.

The U.S. has imposed additional duties on steel and aluminum imported into the U.S. from most countries.² President Trump enacted the import duties by proclamation at the conclusion of an investigation under Section 232 of the Trade Expansion Act of 1962, which allows for the imposition of tariffs on goods imported “in such quantities or under such circumstances as to threaten to impair the national security.”³ These tariffs stand at 25% for steel and 10% for aluminum. The U.S. has exempted Argentina and Australia from the additional import duties for

both steel and aluminum, and exempted Brazil and South Korea from only the steel tariff, starting June 1, 2018.⁴ The tariffs have spurred retaliatory action from several trading partners, notably Canada, Mexico, China, and the European Union (“EU”),⁵ none of which have exemptions.

The aim of the tariffs is to protect domestic steel and aluminum by raising the price of imported materials, thereby making U.S. products more competitive. While the U.S. steel and aluminum industries, their suppliers, and their employees would likely benefit, U.S. industries that use steel and aluminum as inputs would face higher costs, which would lead to higher end-use prices to consumers and lower demand.

The automotive industry is often a bellwether to gauge the economic impact of higher input costs because it is the second largest consumer of steel and aluminum behind the construction industry. Recently, General Motors Co., Ford Motor Co. and Fiat Chrysler Automobiles lowered their profit outlooks for 2018 saying that increased steel and aluminum prices due to tariffs will adversely impact their bottom lines.⁶

¹ <https://www.nytimes.com/interactive/2018/07/11/business/trade-war.html>

² <https://www.strtrade.com/news-publications-steel-aluminum-232-tariffs-exemption-050218.html>

³ <https://www.bis.doc.gov/index.php/other-areas/office-of-technology-evaluation-ote/section-232-investigations>

⁴ <https://www.cbp.gov/trade/programs-administration/entry-summary/232-tariffs-aluminum-and-steel>

⁵ This includes the 28 current members of the EU, <https://www.igi-global.com/dictionary/eu-28/58384>

⁶ <https://www.wsj.com/articles/bjg-auto-makers-trim-forecasts-1532561679>

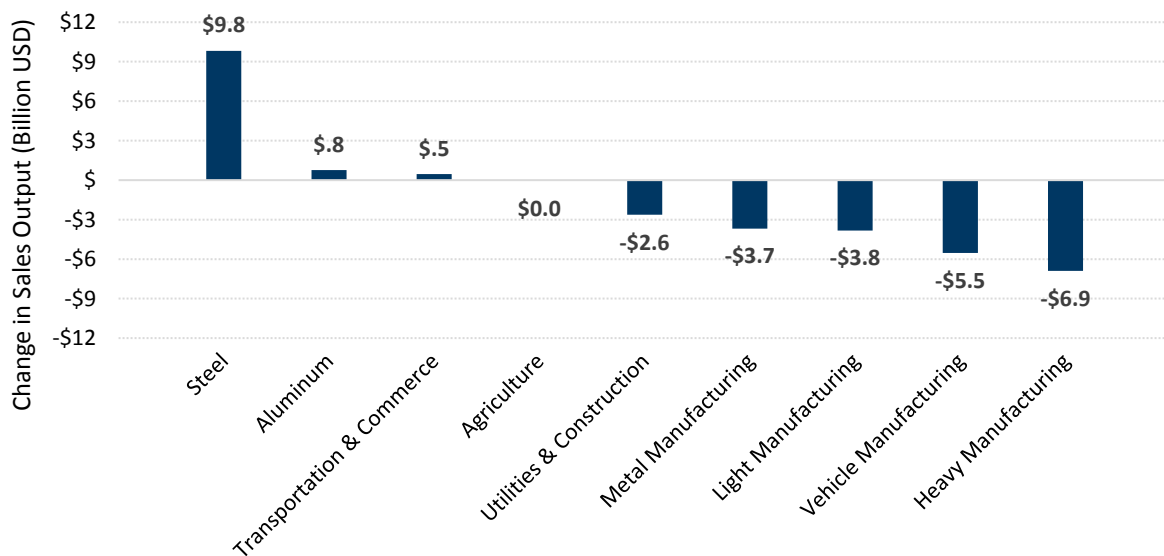
QUANTIFYING THE ECONOMIC IMPACT OF STEEL AND ALUMINUM TARIFFS

To provide a tangible, quantitative view on how steel and aluminum tariffs will impact the U.S. and other countries in the long term, FTI Consulting utilized the Global Trade Analysis Project (“GTAP”) model, a dynamic international trade and finance model.⁷ The GTAP model can analyze international trade across 57 different industries and 140 countries around the world. We looked at two different tariff scenarios – one without (“Scenario 1”) and one with (“Scenario 2”) economic retaliation from the U.S.’s trade partners facing the tariff.

Under our first scenario, Scenario 1, we implemented the steel and aluminum tariffs. The GTAP sectors “Ferrous Metals” and “Non-Ferrous Metals” were shocked by the tariffs. Because ferrous metals are a broader category than steel, and non-ferrous is broader than aluminum, we reviewed the specific Harmonized Tariff Schedule⁸ codes impacted by the tariffs and found the average value of imported goods now subject to the tariff as a fraction of the overall ferrous metals import value to be 69%. Therefore, we applied the 25% steel tariff to 69% of the ferrous metals import value in GTAP. Similarly, we found aluminum imports impacted by the tariffs over the last five years constituted an average 38% of all non-ferrous metal imports. As such, we applied the 10% tariff on aluminum to 38% of the overall non-ferrous metals imports.

Figure 1 below shows the impact on sales output by sector for U.S. industries because of the tariffs, based on their 2017 sector outputs.

Figure 1: Change in sales output for U.S. industries under Scenario 1



The total decrease in U.S. sales output because of the tariffs across all industries is \$11.6 billion.

The tariffs would result in an expansion of the U.S. steel and aluminum sectors, increasing their outputs by about \$9.8 billion and \$0.8 billion, respectively. As expected, industries which use steel and aluminum as production inputs would experience decreased output.

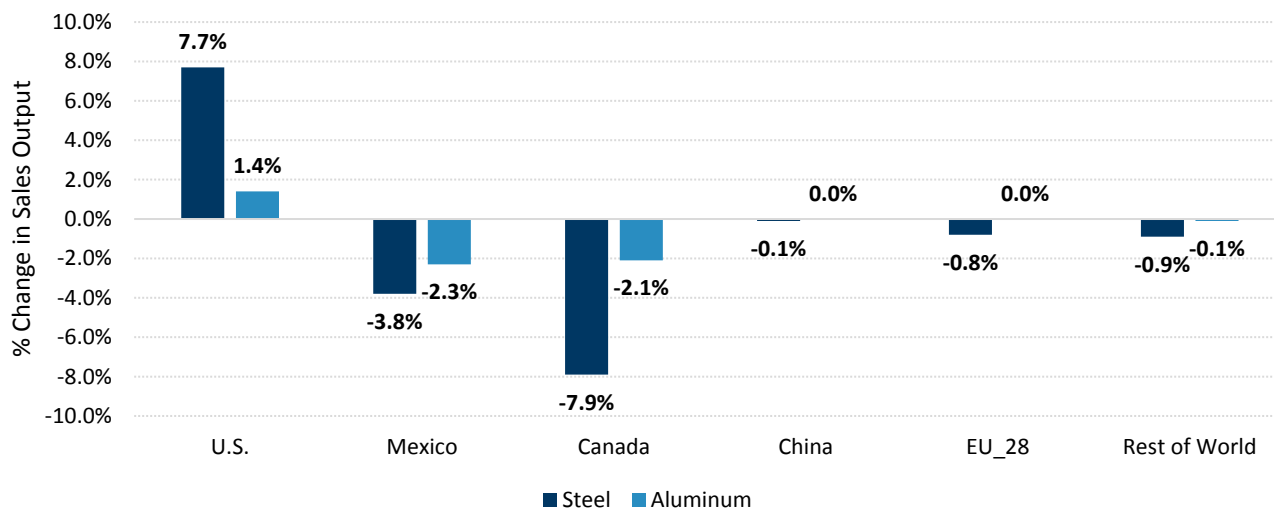
Because of the tariffs, these U.S. sectors would pay higher prices for steel and aluminum, leaving them less viable on domestic and international markets. The heavy manufacturing and vehicle manufacturing sectors would experience the largest reduction in sales output because of the tariffs, with sales output falling by about \$6.9 billion and \$5.5 billion, respectively. The total decrease in output within manufacturing and construction is larger than the increase for steel and aluminum.

⁷ More information on GTAP can be found here: <https://www.gtap.agecon.purdue.edu/about/project.asp>

⁸ <https://www.usitc.gov/tata/hts/index.htm>

The GTAP results provided in Figure 2 below show, as expected, steel and aluminum output in other countries would contract, with Mexico and Canada experiencing the largest declines in percentage terms. The U.S. would be the only region with a significant increase in steel and aluminum output.

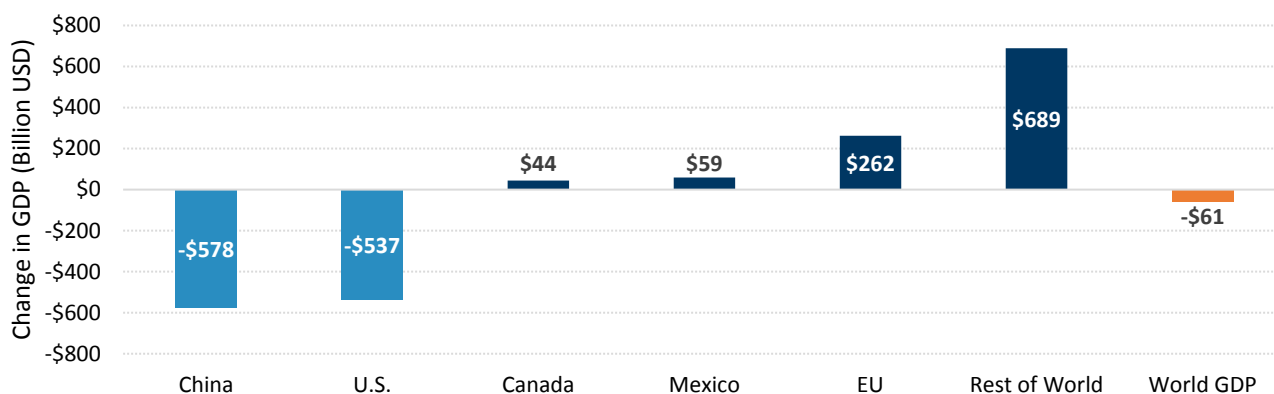
Figure 2: Change in sales output for steel and aluminum by region under Scenario 1



In the second scenario, Scenario 2, we supplemented Scenario 1 by including announced retaliatory tariffs by China and other countries on U.S. goods spurred by the U.S. imposition of steel and aluminum tariffs, such as those on soybeans, other agricultural goods, and motor vehicles by China,⁹ We also incorporated a second round of retaliatory tariffs, implemented by the U.S. on Chinese imports.¹⁰ We assume that it would take 10 years or by 2028 for the world’s economies to fully adjust to the trade tariffs.

Under Scenario 2, China would experience the largest decline in 2028 GDP followed by the U.S. Figure 3 below illustrates this adverse impact, as well as the effect on GDP for Mexico, Canada, and the EU and the Rest of the World in response to the steel, aluminum, and retaliatory tariffs.¹¹

Figure 3: Change in estimated 2028 GDP by country under Scenario 2 relative to no tariffs



⁹ <https://www.cnbc.com/2018/06/15/china-announces-retaliatory-tariffs-on-34-billion-worth-of-us-goods-including-agriculture-products.html>

¹⁰ <http://thehill.com/policy/finance/400791-trump-to-hit-china-with-16b-in-tariffs-on-aug-23>

¹¹ Rest of World includes other major economies, such as Japan, India, Brazil, South Korea, Russia, and Australia.

As shown in Figure 3 on the previous page, Scenario 2, which incorporates the existing steel and aluminum tariffs as well as retaliatory tariffs from both China and the U.S., causes both the U.S. and China's forecast GDP to decline. In contrast, forecast GDP would increase minimally in Mexico and Canada and increase more substantially in the EU. In addition, the Rest of the World would experience an increase in total GDP of \$689 billion; however, the decline in Chinese and U.S. GDP would offset these increases, as the net impact on world GDP would be, albeit almost negligible, a reduction of \$61 billion in global GDP. Thus, Scenario 2 results in winners and losers, with some being intuitive and others being less so:

- U.S. steel and aluminum industries would clearly benefit while U.S. annual GDP growth would decline by 0.26 percentage points through 2028 as compared to a case with no tariffs.
- China, embroiled in the largest cycle of retaliatory tariffs with the U.S., would see its annual GDP growth contract by 0.19 percentage points through 2028 as compared to a case with no tariffs.
- A reordering of world trade patterns occurs as Mexico, Canada, the EU, and the rest of the world would benefit both from reduced international steel and aluminum steel prices due to lower U.S. demand and from substituting trade between the U.S. and China with their own.

CONCLUSION

The analysis and results presented here—which considers the generalized macroeconomic effect of tariffs on metals and specific retaliatory actions—is not exhaustive. Future iterations of this analysis could consider, for example, additional retaliatory tariffs, focusing on other industries or examining the GDP results for other countries under different scenarios (such as the impact to Brazil, India, Thailand, and Pakistan from U.S. policy regarding sugar import quotas or tariffs). With trade and tariff policy-related news changing daily, continued analysis designed to better understand the impacts must be both detailed and dynamic.

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