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Trade Actions and U.S. Steel Manufacturing

On March 8, 2018, President Trump signed a proclamation imposing a duty of 25% on foreign-made steel beginning on March 23. The President acted under Section 232 of the Trade Expansion Act (19 U.S.C. §1862, as amended), a decades-old law that allows restrictions, such as tariffs or quotas, on imports that have been found to harm the national security of the United States.

Steel Tariff and Quotas

Since March 23, 2018, U.S. Customs and Border Protection has been collecting duties on steel imports from China, India, Japan, Russia, Turkey, and Vietnam, among others. However, several major steel suppliers were initially exempted pending negotiations on alternative measures. South Korea and Brazil, the third- and fifth-largest suppliers of U.S. steel imports by value, as well as Argentina, accepted annual quotas in place of the 25% tariff. Australia, a tiny steel supplier to the United States, is permanently exempted from the tariff without any quota limits. On June 1, 2018, the remaining temporary exemptions expired, extending the tariff to other key sources of steel imports, including Canada, Mexico, Germany, and Italy.

U.S. Steel Manufacturing Basics

In 2017, domestic production of raw steel totaled 82 million metric tons, down from 92 million metric tons in 2008, according to the United States Geological Survey (USGS). U.S. steel production peaked in 1973 at 137 million metric tons, and the United States was the world's top producer.

Steelmaking technology has changed significantly over the intervening years. Large integrated steel mills—once the chief producers of steel in the United States—have been declining in importance. By 2017, about a third of domestically produced raw steel was made in integrated steel mills, which use ovens to turn coal into coke and then combine the coke with iron ore to produce pig iron in blast furnaces. The pig iron is then melted in a basic oxygen furnace to produce steel.

As the integrated steel sector has consolidated, many mills have closed. Last year, three companies operated integrated steel mills at nine U.S. locations, according to USGS, producing about 26 million metric tons of raw steel.

Integrated mills have lost considerable market share to minimills, which use electric arc furnaces to melt raw materials (primarily iron and steel scrap) to produce the majority of steel in the United States. The minimill sector has lower capital and energy costs, and it operates with a largely nonunion workforce. In 2017, 54 companies operated minimills in the United States, producing nearly 56 million metric tons of raw steel.

Domestic steel production also includes slab converters. These manufacturers do not make raw steel, but purchase steel slabs and use them to produce hot-rolled, cold-rolled, and galvanized sheet that can then be turned into finished steel products. Semifinished steel products, such as slabs, accounted for about one-fifth of U.S. steel imports in 2017.

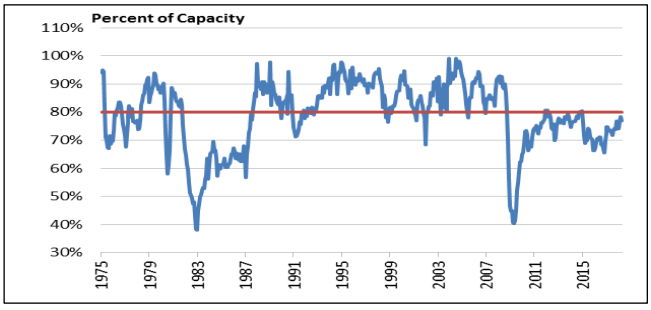
U.S. Demand for Steel Products

Steel is a supplier industry to four main industrial end-use sectors—construction, automotive, energy, and appliances—accounting for more than 80% of combined domestic demand in 2016. The defense industry represented another 3% of demand in 2016, according to the American Iron and Steel Institute (AISI), an industry trade group.

The price of steel produced in the United States tends to be higher than that of comparable steel produced in other countries. Over the past five years, the benchmark hot-rolled coil price—a proxy for the price of steel used in everything from bridges to microwaves—has been higher than prices of steel from China and Europe delivered in the United States.

A report by the Department of Commerce supporting the Section 232 measures argues that for the nation's steel industry to sustain adequate profitability, support continued capital investment, and boost domestic production, steel producers should operate at a capacity utilization rate of 80% or greater. U.S. steel mills have rarely operated above 80% of capacity since 2008, and have often operated below that level since 1981 (**Figure 1**).

Figure 1. Iron and Steel Products Capacity Utilization



Source: Federal Reserve Board.

Steel Industry Jobs and Wages

In 2017, domestic steel producers directly employed 139,900 workers, accounting for 1.1% of the nation's 12.4 million factory jobs. Over the last decade, U.S. steel manufacturers have shed 13,000 jobs, and the U.S. government forecasts steel industry employment will drop to 125,300 jobs by 2026.

Workers in iron and steel mill manufacturing earned an average wage of $78,900 in 2016; the average wage for all manufacturing workers was $64,900. High unionization is a factor that affects industry wages, with close to a quarter of the nation's steel workers covered by union contracts in 2017; for all factory workers, union membership was 10%.

Even a significant increase in domestic production of steel is unlikely to result in a sizable number of additional steel factory jobs. One reason is that many U.S. steel mills are highly automated, reducing the need for a large steelmaking workforce. According to the Bureau of Labor Statistics, labor productivity in steelmaking has nearly tripled since 1987 and has risen 15% over the past decade.

Global Steel Production

In 2017, global production of steel reached a record 1.69 billion metric tons, up roughly 20% from 2010. China produces close to 50% of the world's raw steel, depressing world steel prices and profits of individual companies. The United States ranked fourth globally in raw steel production in 2017, accounting for 4.8% of worldwide output. Foreign shipments of steel mill products to the United States totaled 34.6 million metric tons, meeting approximately one-third of U.S. steel demand. Canada is the largest source of U.S. steel imports. Other major exporters of steel to the United States are Mexico, the European Union, and South Korea.

The normal U.S. import duty rate on steel products is zero. However, the United States has imposed numerous levies on foreign steel products after finding that imports were harming the U.S. industry and were unfairly subsidized by foreign governments or were sold below cost in the U.S. market. More than a fifth of the antidumping and countervailing duty orders currently in place affect imports from China. In cases where steel imports already are subject to antidumping or countervailing duties, the new tariffs are imposed in addition.

Potential Implications

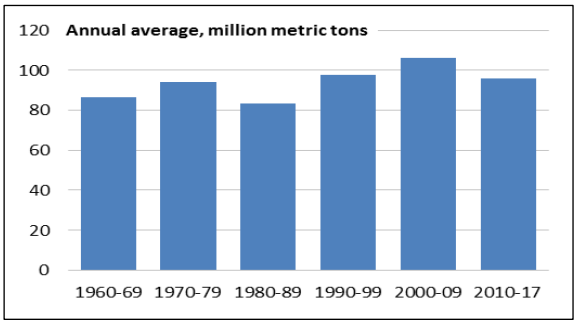
If the United States ultimately excludes a sizable number of major trading partners or steel products from the trade actions, the tariff will likely have a modest effect on the overall level of imports and hence little impact on domestic production and prices. The Section 232 trade action allows U.S. companies to petition the Department of Commerce to exclude specific imported steel products from the tariffs. The department is reportedly reviewing upwards of 8,000 steel product exclusion requests; it has yet to issue any determinations. U.S. companies have raised concerns about the burdensome nature of the exemption process.

On the other hand, domestic steel producers could benefit if prices rise as a result of the steel tariff or because trading partners limit steel exports to the United States to avoid U.S. duties. Two domestic steel manufacturers have already restarted, or announced plans to restart, idled blast furnaces, partly attributing their decision to anticipated increased demand for U.S.-made steel.

Conversely, the steel tariff could negatively affect some U.S. steelmakers if sales of U.S.-made steel products to the world slow down. Exports accounted for 13% of U.S. raw steel production in 2017.

One continuing challenge for U.S. steelmakers is that domestic demand for steel is generally stagnant. Since 2010, the United States has consumed about 96 million metric tons of steel annually, on average. This is significantly less than in the 2000-2009 period, marked by two recessions, and slightly below the average from 1990 to 1999 (see **Figure 2**). Steel consumption per person is far lower than during the 1960s and 1970s, partly because other materials, such as aluminum, have replaced steel in many uses, and partly because of increased imports of products containing steel, such as appliances and hand tools.

Figure 2. U.S. Steel Consumption



Source: U.S. Geological Survey.
Note: Data for 2017 are estimated.

Steel-consuming manufacturers, including the auto industry, appliance makers, the construction sector, and energy producers, are concerned that the steel tariff could adversely affect them, which could lead to a decline in their revenues and profits depending on how long the steel tariff remains in place. For any given product, it is hard to predict whether domestic producers will absorb the cost of more expensive steel, pass the cost on in the form of higher prices to consumers, or do some of both.

The steel tariffs and quotas could cause industrial consumers of steel to manufacture more of their goods abroad to take advantage of cheaper foreign steel. If that occurs, it may prove difficult for U.S.-based steelmakers to achieve the higher capacity utilization the Department of Commerce seeks.

It is also possible that the trade tariffs and quotas, combined with ongoing challenges affecting the steel industry, could reduce the incentive for domestic manufacturers to undertake major investments in new capacity. According to the U.S. Census Bureau, investment by the U.S. steel industry in plants and equipment totaled $2.7 billion in 2016 compared to $7.1 billion in 2013.

The U.S. steel tariff is unlikely to fully insulate domestic steelmakers from the effects of excess global capacity, which the Organization for Economic Cooperation and Development (OECD) says exceeds 700 million metric tons. About half the world's steelmaking capacity is now in China, and even though little Chinese steel is imported into the United States, Chinese exports weigh on steel prices around the world.

Related CRS Products

CRS In Focus IF10667, *Section 232 of the Trade Expansion Act of 1962*, by Rachel F. Fefer and Vivian C. Jones

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