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U.S. Steel Manufacturing: National Security and Tariffs

Steel plays a significant role in national security and U.S. Department of Defense (DOD) operations. While the defense industry often integrates steel into components or structures of military platforms and weapon systems, it also has other applications associated with homeland security and critical infrastructure. In recent years, some in Congress have come to view global overcapacity and excess production of steel, which has tended to result in a reliance on often cheaper imported steel instead of domestically produced steel, as a potential threat to U.S. national security. These Members have advocated boosting U.S. steel production as a means of ensuring a stable domestic supply for national security purposes.

Steel Tariffs under Section 232

The Trump Administration determined foreign-made steel "threaten[ed] to impair national security" and imposed global tariffs of 25% or quotas in March 2018 under Section 232 of the Trade Expansion Act of 1962. Congress delegated some of its authority to regulate foreign commerce to the executive branch through Section 232, a statute that allows a President to restrict imports if Commerce finds the imports threaten or impair U.S. national security. Observers, however, noted that U.S. military applications have historically represented a relatively small share of annual domestic steel production (3% in 2020, according to the American Iron and Steel Institute (AISI), and raised concerns about the potential negative impact of tariffs on U.S. defense allies.

The Biden Administration is reviewing whether to keep, remove, or amend the existing tariff and quotas, which have no statutory expiration; is working internationally on the interrelated issues of global steel overcapacity and dumping; and is tightening government procurement rules for steel. Some Members of Congress support keeping the tariff protection in place, while others oppose the duty due to increased input costs for downstream industries.

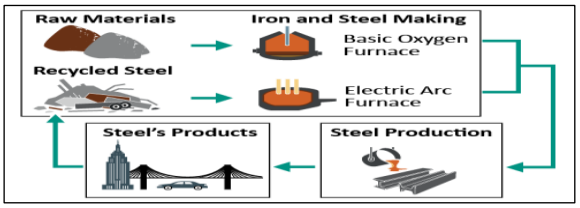
Domestic Steel Manufacturing

U.S. steel manufacturing rose in 2018 and 2019; however, in 2020, the COVID-19 pandemic contributed to a drop in demand that affected production, resulting in shutdowns and idled or reduced steel making. As manufacturing has recovered, U.S. production of steel has risen. Federal Reserve Board data shows as of June 2021 monthly production rose 58% from its low in May 2020. In 2020, U.S. annual production of raw steel fell to an estimated 72 million metric tons from 87.8 million metric tons in 2019, according to the United States Geological Survey (USGS).

U.S. producers currently make steel in two main ways (**Figure 1**). One way is in integrated steel mills that turn coal into coke, combining the coke with iron ore to produce pig iron, and then melting it in a basic oxygen furnace to produce steel. Many integrated steel mills have closed, partly because they are more expensive to operate than newer facilities. In 2020, integrated mills produced 30% of total raw steel made in the United States. USGS notes that, at the end of 2020, two companies—U.S. Steel and Cleveland-Cliffs—operated integrated steel mills at 11 U.S. locations.

Minimills provide a second way to make steel. Minimills tend to have lower fixed capital and energy costs than integrated steel mills and a largely nonunion workforce. In 2020, this method—which primarily uses recycled steel scrap melted in an electric arc furnace—accounted for 70% of all domestically produced raw steel. Over 50 companies, including Nucor and Steel Dynamics (ranked as the nation's first- and fourth-largest steel producers, respectively, in 2019), operate minimills in the United States. Since 2018, several minimill operators have announced or made new investments, upgrades, or plant capacity expansions in the United States. Increased prices linked to the tariffs and quotas on imported steel may be a factor in these decisions.

Figure 1. The Raw and Recycled Steel Making Process



Source: CRS adapted figure from AISI Profile 2019-2020, p. 10.

U.S. steel production also includes slab converters (also called re-rollers) that use a third, alternative manufacturing model. These companies purchase semi-finished steel slabs, mostly from foreign suppliers, to use as feedstock to make finished sheet steel products in the United States.

Factors Affecting Domestic Production

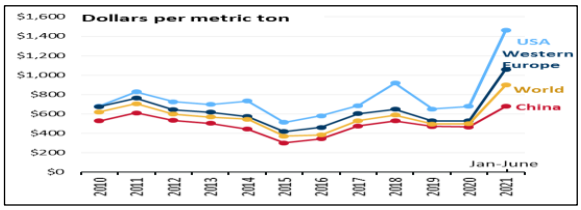
One longstanding concern for U.S. domestic producers is global overcapacity, which the Organisation for Economic Co-operation and Development (OECD) estimated at around 700 million metric tons of steel in 2020. Global efforts to address this issue over many years have been largely unsuccessful. Chinese overcapacity is widely viewed in the United States as a potential threat to U.S. domestic steel production. Although China accounted for more than 55% of worldwide steel production in 2020, about 2% of U.S. imports of steel mill products come directly from China due partly to existing U.S. antidumping and countervailing duties on Chinese steel.

U.S. imports of steel originate largely from U.S. partners: In 2020, Canada was the biggest U.S. supplier of steel, measured in metric tons, followed by Brazil and Mexico. Total import penetration dropped to a five-year low of 23.1% of U.S. demand in 2020, from 33.8% in 2015, according to the U.S. Department of Commerce (Commerce).

The worldwide hot-rolled band steel price—a proxy for the price of steel used in everything from microwave ovens to bridges—is at a decade high. The U.S. price of steel

generally tends to be higher than that of comparable steel produced in other countries for a variety of reasons. From January to June 2021, hot-rolled band steel in the United States sold at an average of $1,460 per metric ton, over 60% higher than the global price and more than double China's (**Figure 2**). Higher steel prices also affect U.S. downstream industries that use steel, or inputs made of steel, such as auto parts, farm equipment, and armored military vehicles.

Figure 2. Steel Prices



Source: World Steel Dynamics, Steelbenchmarker.
Notes: Prices do not include freight, insurance, handling, import duties and other associated costs.

U.S. demand for steel has been generally stagnant. Since 2010, the United States has consumed about 96 million metric tons of steel annually, on average. Other materials, such as aluminum, have replaced steel in many uses. Imports of products containing steel, such as appliances and motor vehicles, have increased and also offset U.S. demand.

Over the past decade, production capacity of the U.S. steel industry rarely has exceeded 80% utilization. In its 2018 Section 232 report, Commerce argued that 80% or higher is necessary for the industry to sustain adequate profitability, to reopen idled mills, and to boost U.S. steel production. Capacity utilization rates at steel mills rose to 83.5% in June 2021, after falling to 52.6% in May 2020, and slightly above the pre-pandemic 83.4% rate of January 2020.

Steel Industry Jobs and Wages

In 2020, domestic steel producers directly employed 134,467 workers, accounting for 1.1% of the nation's 12.1 million factory jobs. U.S. iron and steel mills paid an average wage of $88,380 in 2020, higher than the average wage for all manufacturing workers of $73,398. A large union workforce can affect industry wages, with union contracts covering around a quarter of the nation's steel workers in 2020. U.S. steel manufacturers shed 12,500 jobs from 2015 to 2020. This may be due to factory idling and production reductions and to industrial automation and related technologies.

Issues for Congress

Steel Tariffs and Quotas. In March 2018, the Trump Administration, arguing U.S.-made steel is vital to national security, imposed a 25% tariff (or in some cases a quota) on U.S. imports of certain steel products from almost all countries in addition to existing tariffs. In January 2020, it broadened the 25% tariff to certain derivative steel products (i.e., those containing a high percentage of steel). The Trump Administration applied the tariffs and quotas under Section 232 of the Trade Expansion Act (19 U.S.C §1862, as amended). Groups representing steel manufacturers and the Congressional Steel Caucus are urging President Biden to keep the tariff in place. Steel converters and steel-consuming industries, including the auto and appliance sectors, with concerns about increased production costs, are seeking an immediate end of the steel tariff. The Biden Administration is reviewing the Section 232 tariff program, and has not announced plans to end the 25% steel tariff and quotas. The Administration is working internationally to address the issue of global steel overcapacity.

The United States-Mexico-Canada Agreement (USMCA). The USMCA, in effect since July 1, 2020, also aims to support U.S. steel production. The USMCA requires 70% North American steel content for vehicles to qualify for duty-free treatment and for that steel to be melted and poured in North America. This may increase demand for U.S.-made steel over time.

Domestic Source Restrictions. Title 10 U.S.C. §2533b permits the DOD to purchase products, such as missile systems, and components made of certain steel alloys and other specialty metals, only if the component metals are melted and produced domestically, with some exceptions or in certain "qualifying countries." Recent Administrations adopted policies to strengthen domestic sourcing of steel and manufactured products that include steel. In January 2021, the Trump Administration modified acquisition regulations to set a 95% U.S.-made threshold for products consisting "wholly or predominately" of iron or steel, thus treating these items differently from other manufactured products in government purchases. For all other products and construction materials, the Biden Administration proposed a phased increase of required domestic content thresholds. These thresholds would increase from 55% (as set in January 2021 by the Trump Administration) to 60% upon implementation, and would rise to 75% by 2029. These requirements include exceptions.

The Defense Production Act (DPA; 50 U.S.C. §4533). Congress provides the President with a broad set of authorities under the DPA, including Title III, which authorizes the use of economic incentives to secure domestic industrial capabilities essential to meet national defense and homeland security needs. DOD has funded several Title III projects to increase domestic production of steel products, including a $56 million agreement for steel plate production signed in July 2020 with AcelorMittal, the world's second-largest steelmaker (in December 2020, ArcelorMittal sold nearly all of its U.S. operations to Cleveland-Cliffs).

Other Considerations. Some Members support bills to spur U.S. production of steel for national security and economic competitiveness reasons. Others oppose federal policies to shield domestic steel producers from global competition. In the 117th Congress, one bill on Section 232 trade actions would require the Secretary of Defense, not Commerce, to initiate these trade investigations (S. 746). Another measure supported by the steel industry would change antidumping and countervailing duty laws (S. 1187). Other proposals would apply more domestic source requirements, especially to federally funded infrastructure projects. See also, CRS Report R46748, *The Buy American Act and Other Federal Procurement Domestic Content Restrictions* and CRS Report R44266, *Effects of Buy America on Transportation Infrastructure and U.S. Manufacturing*.

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