

Russia and Aluminum Supply Chains

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Aluminum is considered a critical material for several U.S. industries and national security. Although Russia is not a major source of U.S. imports of aluminum, the ongoing conflict between Russia and Ukraine appears to be impacting global prices, which does have an impact on U.S. downstream industries. This executive briefing on trade examines Russia's role in aluminum supply chains and how the war may affect prices and downstream consumers.

Background: On April 8, 2022, President Biden signed a bill suspending normal trade relations with Russia, in response to the war in Ukraine. Duties on imports of unwrought aluminum from Russia, which were between 0 and 2.6 percent, have increased to between 10.5 and 25.0 percent.¹ In addition, the major Russian aluminum producer Rusal's alleged ties to the Kremlin have created concerns that additional import restrictions may also be imposed on the company's product. The United States is the world's largest aluminum importer. The major U.S. consumers of aluminum are the transportation, packaging, and building sectors that accounted for 35, 23, and 16 percent of consumption, respectively in 2021. Aluminum is also an important input for electrical applications, consumer durables, and machinery, among other uses.

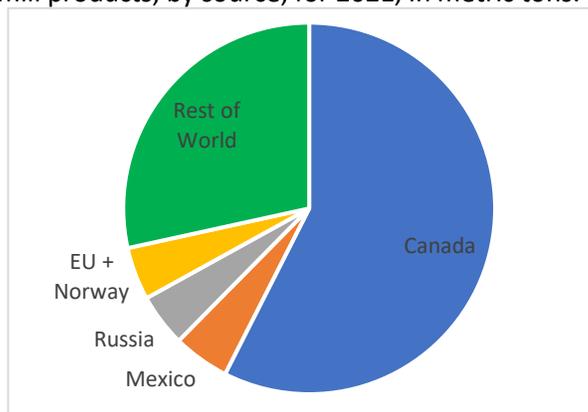
Russia and global aluminum supply chains: According to USGS, Russia was the world's third-largest unwrought aluminum producer in 2021. Russia produced 3.7 million metric tons of unwrought aluminum, accounting for approximately 5.4 percent of global production, as well as several mill products. The European Union is the largest export destination for unwrought aluminum and mill products from Russia, while the United States is the fifth-largest export destination. Rusal is also a major producer of bauxite, which is refined by the company into alumina, the principal raw material for aluminum.

U.S. import sources: While the United States sources the majority of its unwrought aluminum and mill products from Canada and Mexico, Russia is the third-largest supplier. Russia's principal contribution to the U.S. market is primary unwrought aluminum. In 2021, Russia accounted for 5 percent of U.S. imports of unwrought aluminum and mill products by volume (figure 1). Looking at certain mill products separately, Russia accounted for 10 percent of U.S. imports of aluminum wire, and smaller shares of aluminum bars, rods, and profiles, plates, sheet and strip, foil, and pipes and tubes.

European countries are another large source of U.S. imports. The majority of European imports are mill products, some of which have been produced from unwrought aluminum originating in Russia.

Impacts on prices: Although the United States does not source a large share of its aluminum imports from Russia, the conflict has contributed to already surging global prices and supply constraints. In the past, similar supply chain disruptions in Russia have impacted U.S. downstream consuming industries. In 2018

Figure 1: U.S. imports of unwrought aluminum and mill products, by source, for 2021, in metric tons.



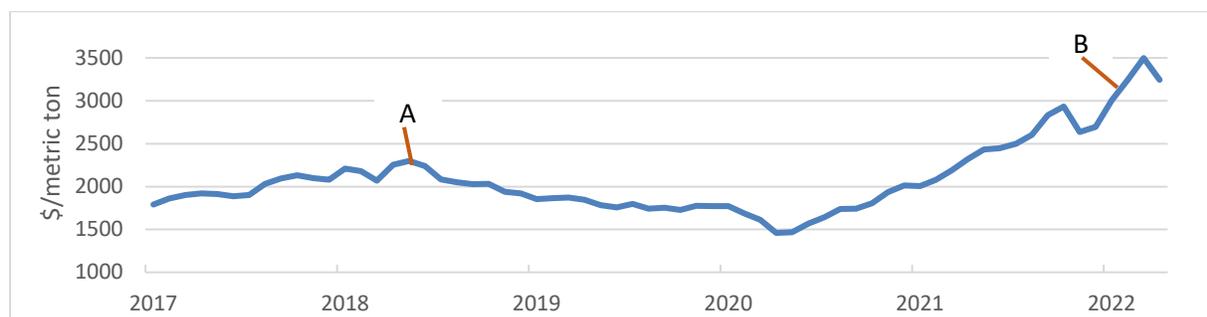
Source: USITC DataWeb/Census, HTS 4-digit subheadings 7601-7609, accessed April 28, 2022.

¹ Note that unwrought aluminum from Russia and other countries are subject to additional 10% Section 232 tariffs on top of the duty rates described above.

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(figure 2, point A), global aluminum prices spiked to a seven-year high, which was partially attributed to U.S. sanctions on Rusal. According to several news sources, those higher prices led to a rise in production costs for downstream consumers. In October 2021, other supply disruptions pushed aluminum prices to their highest levels since 2008 (a record high due to the 2000's commodity boom, not shown in the graph).² Then, between January and March of this year, aluminum prices rose by 16 percent from \$3,006 to \$3,498 per metric ton, which is likely, at least in part, due to the ongoing conflict (point B).

Figure 2: Global aluminum prices, January 2017 – April 2022.



Source: The World Bank Group, Commodity Pricing Data (“The Pink Sheet”), accessed May 13, 2022.

Note: (A) June 2018, one month after the U.S. announced sanctions on Rusal, global aluminum prices rose to a 7-year high. Note that additional section 232 tariffs on U.S. imports of aluminum were imposed three months prior and may also have had an effect on prices. (B) February 2022, Russia’s invasion of Ukraine.

Other supply concerns: In addition to rising prices, Russia’s aluminum production may also be impacted by supply disruptions, as Rusal has now been cut off from 68 percent of its imported supplies of alumina. Ukraine was the largest source of these imports, accounting for 36 percent in 2021. However, the major Ukrainian alumina refinery has been shut down due to the conflict. Australia was the second largest source of Russian imports of alumina, accounting for 32 percent in 2021. In March, Australia announced it would be banning the export of alumina and bauxite in response to the conflict in Ukraine. Meanwhile, tight supplies and growing demand in other countries, such as China, may make it more difficult for Russia to replace these imports.

Another concern to the aluminum industry and downstream consumers is the European aluminum industry’s dependence on natural gas, where already high prices have been exacerbated by Russian threats to cut off supplies. In particular, Germany and Italy are highly dependent on natural gas from Russia. Although they supplied less than 2 percent of U.S. aluminum imports in 2021, these two countries are among the world’s top exporters. Thus, energy cost driven production cuts in these countries could further tighten global supplies and drive prices even higher.

Sources: IHS Markit, [Global Trade Atlas](#), HS subheading 2818.20, accessed April 28, 2022; USGS, “[Mineral Commodity Summaries 2022: Aluminum](#),” January 2022; Rusal, “[Alumina and Bauxites](#),” accessed April 27, 2022; The World Bank, “[Commodity Markets Outlook: The Impact of the War in Ukraine](#),” April 2022; Detrixhe, “[China’s Environmental Goals are Driving Aluminum Prices](#),” August 30, 2021; S&P Global, “[Russia’s Invasion of Ukraine to Impact Global Aluminum Supply](#),” February 24, 2022; Blanc, “[The United States Makes One Smart Move on Russia Sanctions](#),” October 4, 2018; Bavier et. Al., “[Russia’s Rusal Diverts Ore to Ireland After Ukraine Plant Shuttered](#),” March 15, 2022; Hernandez, “[Australia Bans the Export of Aluminum Ores to Russia](#),” March 20, 2022; Soreng and Menon, “[China Faces Challenges Supplying Russia with Alumina](#),” March 24, 2022; Grossman, “[Russian Supply Concerns Drive Natural-Gas Prices Higher](#),” April 27, 2022; Horton et. Al, “[How Reliant is the World on Russia for Oil and Gas?](#)” April 28, 2022.

² High energy costs, and production curtailments in China last year and Europe this year, among other disruptions, have decreased the global supply of aluminum at a time when demand has been very high following the initial COVID-19 pandemic recovery.

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