



Montana's Got the Goods:

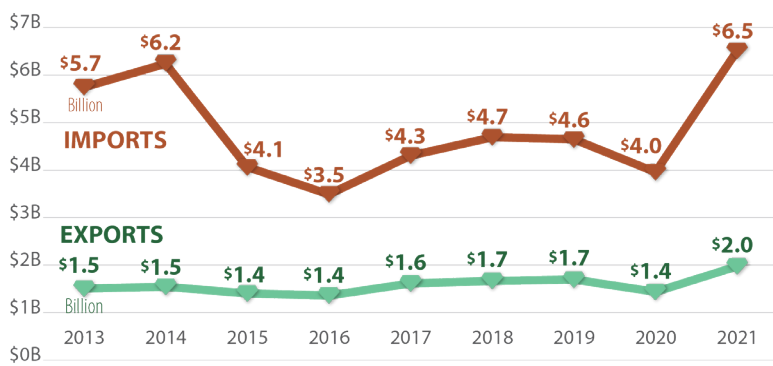
Montana's International Trade in Goods Sectors

by Nick Holom, Economist

With major shocks to supply and demand over the last two years, the interconnectedness of the global economy has never been more apparent. From COVID to the war in Ukraine, global events can affect prices paid by consumers, the availability of certain goods, and the prices producers pay for inputs. But which goods does Montana import and export, and which countries are its direct trade partners? Montana has a variety of different trade relationships with countries from Japan to Belgium, trading everything from agriculture products to musical instruments.

The available data on international trade is limited. Most importantly, the data does not provide information on the nontangible goods provided by the service sector, ignoring the important economic contributions of tourism, software used by multinational corporations, environmental firms managing projects in Mexico, and many other nontangible goods provided by Montana businesses. The exclusion of these goods means that over 75% of the state's GDP is not covered by the trade data.¹ In addition, the trade data does not provide a complete picture of how Montana is integrated into a global supply chain (see Limitations of Trade Data). However, trade data still provides an important glimpse of Montana's connection to the global economy. This month's EAG looks at Montana's international trade relationships in goods-producing sectors.

FIGURE 1
Montana Imports and Exports of Tangible Goods
2013 to 2021



Source: U.S. Census Bureau, USA Trade Online. Montana 2013-2021 annual totals

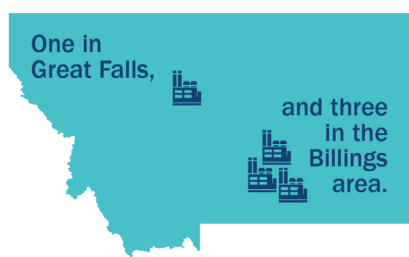
Montana Imports and Exports

In 2021, Montana imported over 1,900 products and exported over 1,300 products. These products were imported from over 112 countries and exported to 138 countries.² **Figure 1** shows that over the past decade the

¹ Service sector's share of GDP from the BEA 2021 estimate (SAGDP2N) for private industries. Quality data on service imports and exports at the state-level do not yet exist. However, U.S. exports are 30% services and 70% goods

² The total number of trade partners (240) is greater than the total number of countries (195) in the world because territories are considered separate trade entities from their countries.

Montana has 4 refineries.

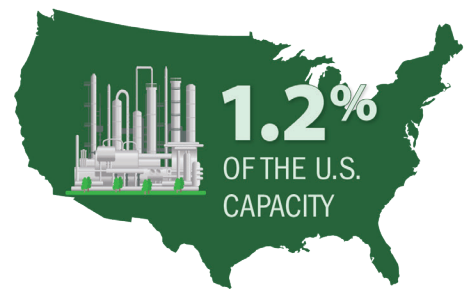


WHICH
PROCESS
A TOTAL OF



215,000
BARRELS PER DAY

OR
ROUGHLY



value of Montana's goods exports have stayed relatively level between \$1.4 and \$1.7 billion per year, increasing to \$2 billion in 2021. Put into perspective with the total GDP of Montana's goods-producing industries in 2021, goods that are directly exported from Montana made up about 16% of the total GDP of its goods-producing sector.

Imports, on the other hand, dropped from \$6.2 billion in 2014 to below \$5 billion between 2015 and 2020, climbing back above previous levels in 2021 at \$6.5 billion. Imports dropped due to a decrease in the total value of crude oil imports from Canada, which is Montana's largest import, making up 64% of all imports in 2021. Crude oil is imported to Montana to be refined into petroleum products. Montana has four refineries—three in the Billings area, and one in Great Falls—which have a combined crude oil processing capacity of 224,100 barrels per day—roughly 1.2% of total U.S. capacity.³ Due to a global oversupply of oil, oil prices dropped from \$111.90 per barrel in June 2014 to a low of \$30.80 per barrel in January of 2016 staying at an average price below \$70 per barrel through 2019.⁴ Though the value of oil imports dropped significantly during this period, employment in the petroleum manufacturing industry (NAICS 3241) had growth from 2013 to 2020 of 36 new jobs per year.⁵ As prices increased above \$80 per barrel in

November 2021, the value of Montana's total imports climbed above their previous level.⁶

Import values of other top goods also increased from 2020 to 2021, such as conifer wood (increasing from \$78 million to \$160 million), urea (increasing from \$83 million to \$116 million), natural gas (increasing from \$65 million to \$97 million), and oriented strand board (increasing from \$34 million to \$77 million).

Montana's second largest import is platinum scrap metal (\$215 million, **Figure 2**). Platinum can be used in the chemical manufacturing industry (NAICS 3251), especially in petrochemical manufacturing in the refining process, though it is also used as an input for

Limitations of Trade Data

USA Trade Online, a product of the Census Bureau, provides export data by origin-of-movement, or the state where the export journey began. For example, a good shipped from Montana to port to be exported would be counted as an export from Montana. Origin-of-movement does not necessarily represent the location of production, as goods can be shipped to distribution centers in other states before they start their journey out of the country. This can lead to overstating the exports of states with distribution centers and understating for those without. In addition, export data consists of goods valued at more than \$2,500 per shipment of commodity by individual or organization, and therefore excludes small shipments.

Imports include goods valued at more than \$1,000 per shipment of commodity and are attributed to the state-of-destination. State-of-destination may not be the final location of the imported good but is reflective of the destination state at the time entry documentation is filed. For example, goods imported to Washington that are then trucked to Montana will often be attributed as imports of Washington.

³ According to the U.S. Energy Information Administration Number and Capacity of Petroleum Refineries atmospheric crude oil distillation operable capacity (barrels per calendar day), Montana's 2021 capacity is 224,100 (b/cd) and the U.S. total capacity is 18,127,700 (b/cd).

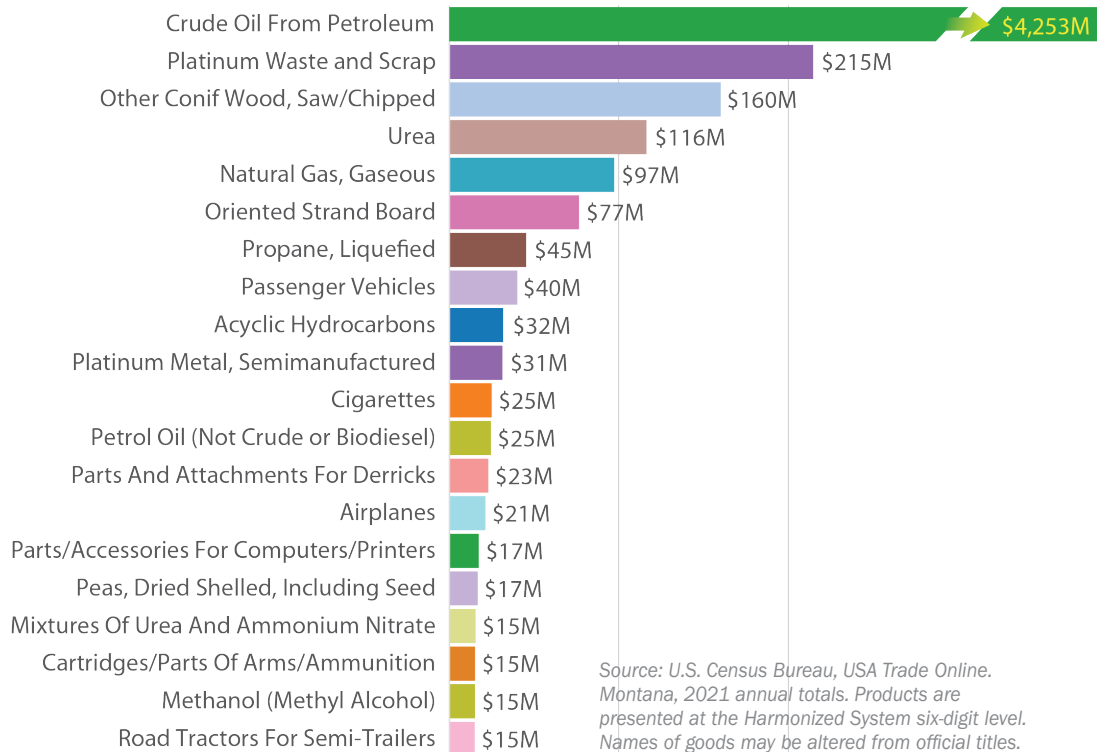
⁴ Prices from Federal Reserve St. Louis Economic Data on global price of Brent crude (POILBREUSD).

⁵ During the period, petroleum and coal products manufacturing had only one year of decreasing employment from 2017 to 2018.

⁶ It's unclear if decreased crude oil imports during this period reflect a decrease in volume of crude oil imported, a decrease in the price of imports or both. Though annual weight imported is available for some products, it is not available for crude oil and a number of other products in Montana's top 20 imports.

non-ferrous metal production industry, returning the scraps to useful metal (NAICS 3314).⁷ Urea, Montana's fourth largest import, is an important input to Montana's agriculture sector and is used as a fertilizer and feed supplement.⁸ Other items in the top 20 imports include: passenger vehicles (\$40 million); acyclic hydrocarbons (\$32 million), which are used to produce gasoline, diesel fuel, and natural gas; parts and attachments for derricks (\$23 million); and road tractors for semi-trailers (\$15 million).⁹

FIGURE 2
Montana Imports of Tangible Goods- Top 20 Products, 2021



Montana's top 20 exports include everything from coal to cattle to cigarettes (**Figure 3**). Montana ranks as the top state for coal exports as well as copper oxides and hydroxides, which are Montana's two largest exports in 2021, accounting for \$179 million and \$172 million, respectively. Coal has a variety of uses, such as in energy production, steel production, and in the production of cement.¹⁰ Copper oxides and hydroxides can be used as pigment for paints and ceramic glazes.¹¹ Montana's third largest export, copper ores and concentrates, are used to create copper, which is highly conductive and often used for electrical wiring and combined

⁷ Platinum information from: <https://www.usgs.gov/centers/national-minerals-information-center/platinum-group-metals-statistics-and-information>

⁸ Urea uses from: <https://www.britannica.com/science/urea>.

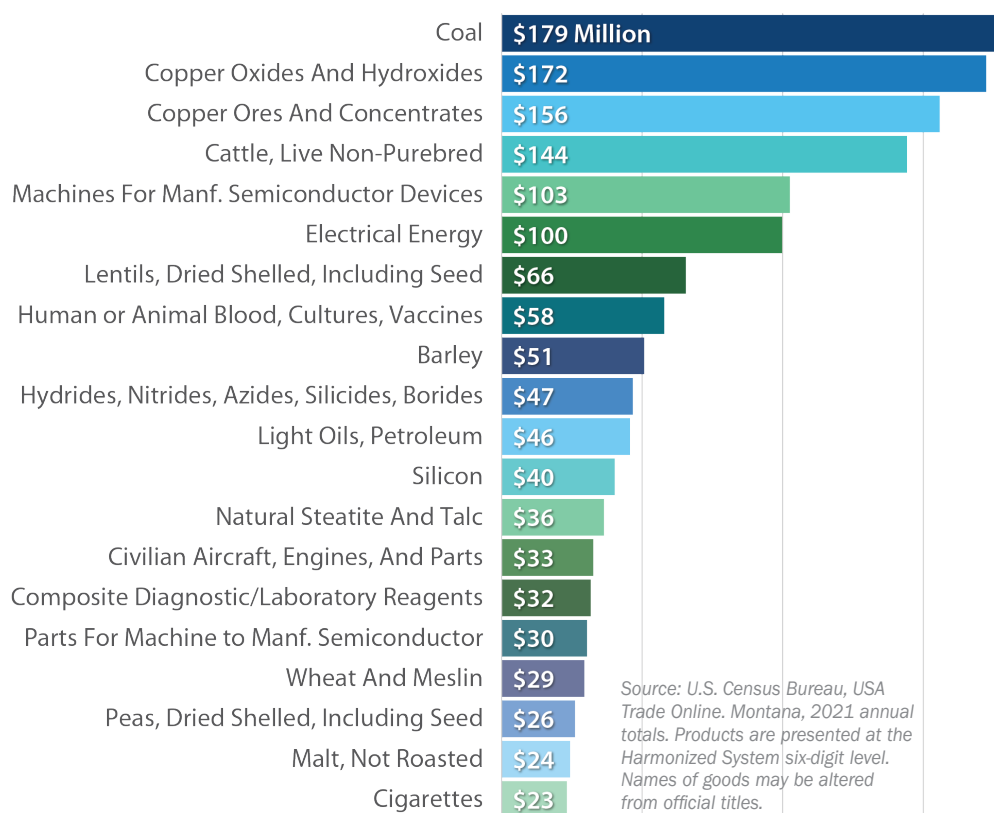
⁹ Acyclic hydrocarbon uses from: <https://oec.world/en/profile/hs/acyclic-hydrocarbons>.

¹⁰ Coal uses from: <https://www.usgs.gov/faqs/what-coal-used>

¹¹ Copper oxides uses from: https://www.copper.org/resources/properties/compounds/other_compounds.html

with other metals.¹² Montana also ranks as the top state for exporting live, non-purebred cattle in 2021, which is Montana's 4th largest export (\$144 million). Human or animal blood, cultures, and vaccines accounts for \$58 million of Montana's exports and are produced by the pharmaceutical and medicine manufacturing industry (NAICS 3254), which primarily includes businesses in Missoula and Flathead counties. Other notable exports include: machines for manufacturing semi-conductor devices (\$103 million); electrical energy (\$100 million, all of which is exported to Canada); and a variety of agricultural products including lentils (\$66 million); barley (\$51 million); wheat and meslin (\$29 million); peas (\$26 million); and malt (\$24 million).

FIGURE 3
Montana Exports of Tangible Goods - Top 20 Products, 2021



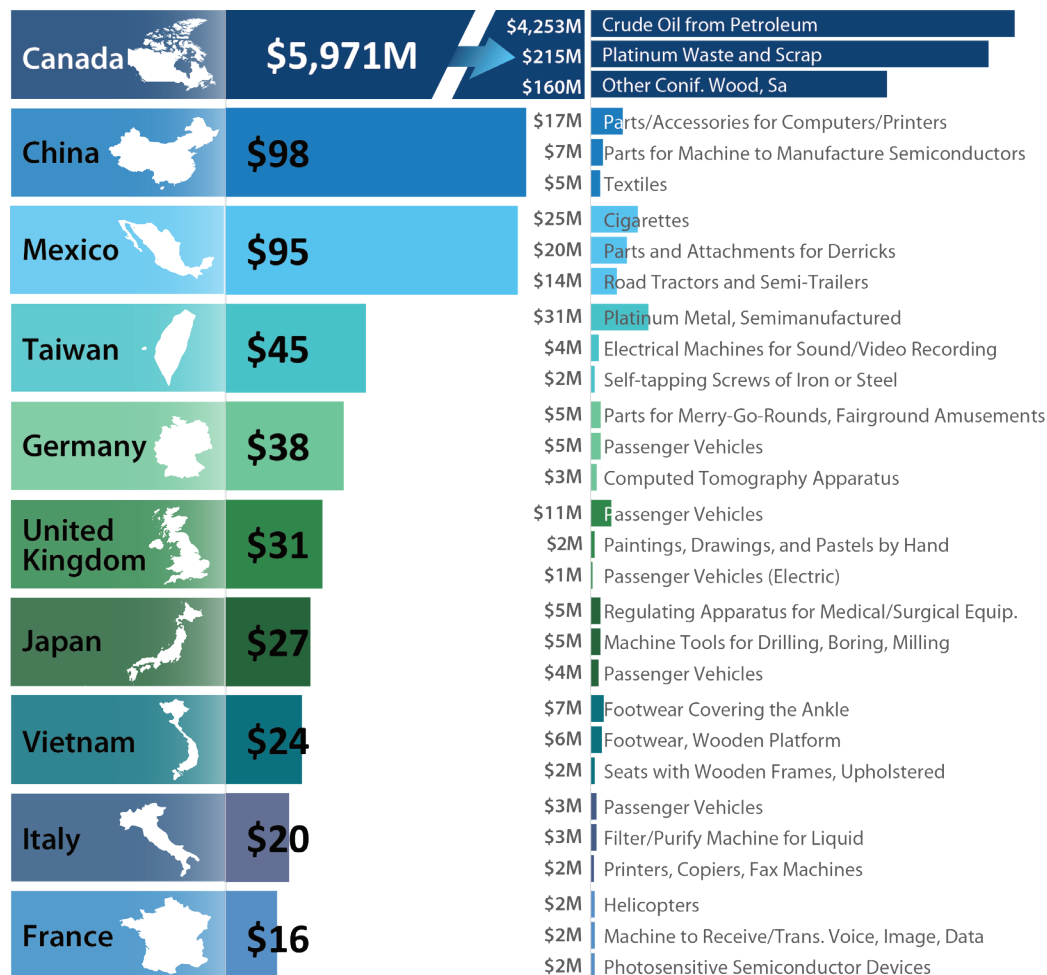
Top Importing and Exporting Countries

In 2021, Montana's largest trade partner in terms of both imports and exports is Canada, making up 90% of imports (\$5.9 billion) and 45% of exports of (\$0.9 billion). Montana's smallest trade partners include the Cayman Islands (\$2,783 in exports of metal furniture) and Haiti (\$1,012 in imports of sweaters and pullovers).

Figure 4 shows Montana's top three goods from each of its top 10 largest import partners. Crude oil accounts for 71% of Montana's imports from Canada (\$4.3 billion) followed by platinum waste and scrap (\$215 million), and other conifer wood (\$160 million). Montana's second largest import partner is China (\$98 million), which includes parts and accessories for computers and printers

¹² Copper uses from: <https://www.britannica.com/science/copper>

FIGURE 4
Montana Imports of Tangible Goods
 Top 10 Copuntries and Top 3 Goods, 2021



Source: U.S. Census Bureau, USA Trade Online. Montana, 2021 annual totals. Products are presented at the Harmonized System six-digit level. Names of goods may be altered from official titles.

(\$17 million), parts for machines that manufacture semiconductors (\$7 million), and textiles (\$5 million). Montana imports \$95 million in goods from Mexico, which includes cigarettes (\$25 million), parts and attachments for derricks (\$20 million), as well road tractors for semi-trucks (\$14 million).

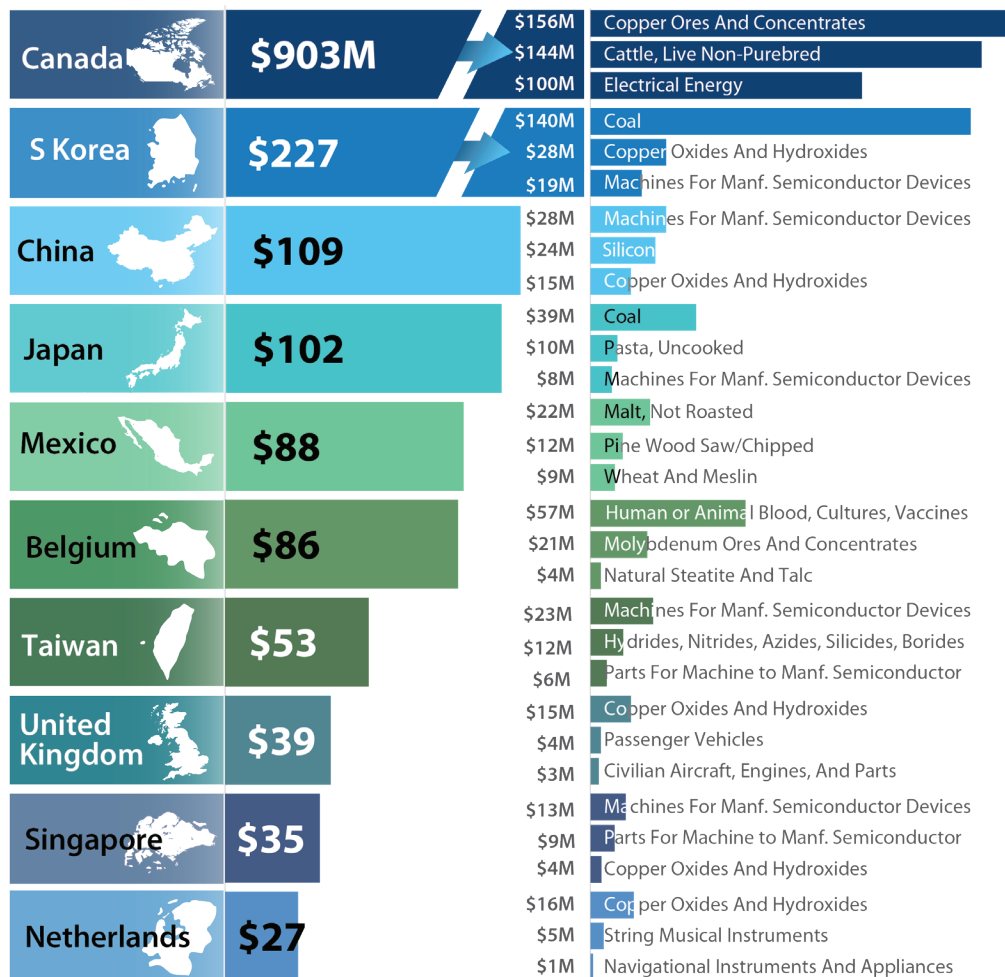
Montana imports passenger vehicles from four of its top ten countries: Germany, the United Kingdom, Japan, and Italy. Over half of all imports from Vietnam are different types of footwear (roughly \$13 million).

Montana's top three exports to Canada (**Figure 5**) include copper ores (Montana accounts for 31% of all copper ore exports to Canada), live non-purebred cattle (Montana accounts for 40% of all live non-purebred cattle U.S. exports to Canada), and electrical energy (Montana accounts for 20% of all electrical energy exported to Canada).

Machines to manufacture semiconductor devices are a top export to five of Montana's top ten countries, including South Korea, China, Japan, Taiwan, and Singapore. The industrial machine manufacturing industry (NAICS 3332)

FIGURE 5
Montana Exports of Tangible Goods

Top 10 Copuntries and Top 3 Goods, 2021



Source: U.S. Census Bureau, USA Trade Online. Montana, 2021 annual totals. Products are presented at the Harmonized System six-digit level. Names of goods may be altered from official titles.

is the industry that produces these machines, which is primarily located in Flathead County. In addition, copper oxides and hydroxides are a top export to many of the top ten countries, including South Korea, China, the United Kingdom, Singapore, and the Netherlands.

Other notable export items include: uncooked pasta exported to Japan; malt, pine wood, and wheat exported to Mexico; blood, cultures, and vaccines exported to Belgium; and string musical instruments exported to the Netherlands.

Conclusion

It's hard not to marvel at the complex system of production and trade that delivers the many goods enjoyed by Montanans and consumers worldwide. Over the past few years, it has become even more salient how events happening a world away can affect Montana's businesses and consumers. Whether it be shoes from Taiwan, textiles from China, crude oil from Canada, or beef from—well, Montana—Montana's trade relationships and the many goods exchanged are a key part of Montana's economy.