

# Cleveland Fed District Data Brief

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## Pennsylvania's International Trade Relationships

This *District Data Brief* is part of a four-report series examining the international trade relationships of the US states that are either partially or entirely contained within the Fourth District of the Federal Reserve System [↗](#): Ohio, Kentucky, Pennsylvania, and West Virginia.<sup>1</sup>

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Topics [State and local economies](#)

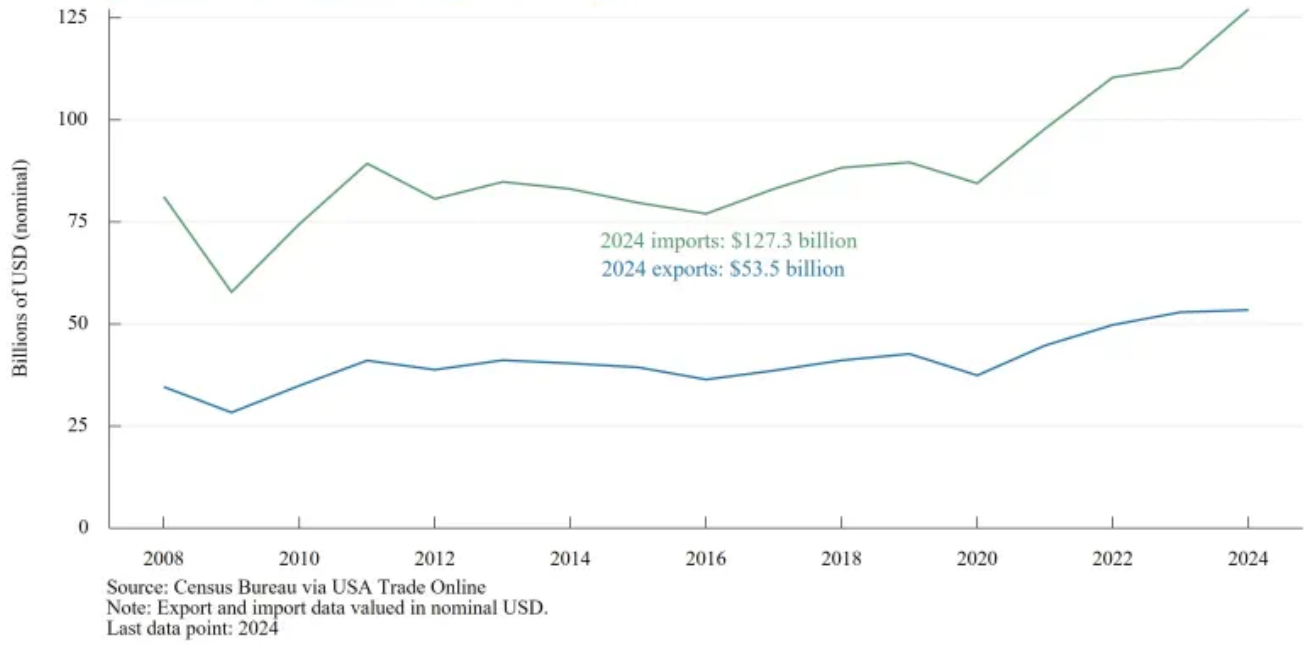
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*The views authors express in District Data Briefs are theirs and not necessarily those of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System. The series editor is Harrison Markel.*

### Overview: Pennsylvania's Product Imports and Exports

The value of Pennsylvania's product imports and exports was generally stable from 2010 through 2019. However, since 2020, the value of its imports has risen substantially, while the value of its exports has increased more moderately. In 2024, the value of its imports reached \$127.3 billion, while the value of its exports hit \$53.5 billion.<sup>2</sup> Pennsylvania is a net importer of products from other countries because it imports more than it exports.<sup>3</sup>

**Figure 1. Pennsylvania's Annual Imports and Exports**



## Where Do Pennsylvanians Import Products from, and What Are They Buying?

Figure 2 shows the percentage of Pennsylvania's total imports by trading partner of origin from 2008 through 2024. The figure's inset table provides information on the US dollar value and percentage share of the state's imports by trading partner of origin in 2024. Almost 30 percent of its 2024 product imports (\$38.1 billion) came from the European Union, making it Pennsylvania's largest source of imports that year. China accounted for the largest share of 2024 imports from a single country (13 percent) at a value of \$16.6 billion. More than half of imports from China (\$9.3 billion) were computer and electronic products.

Figure 2. Largest Trading Partners' Share of Pennsylvania's Imports

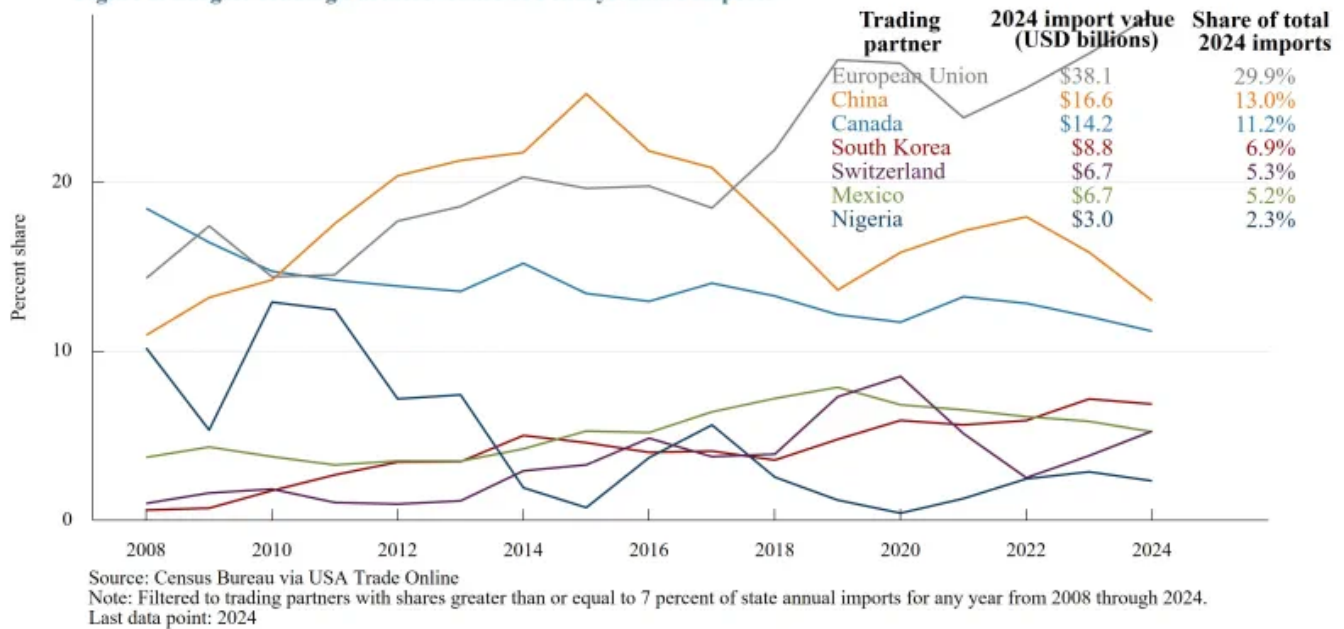
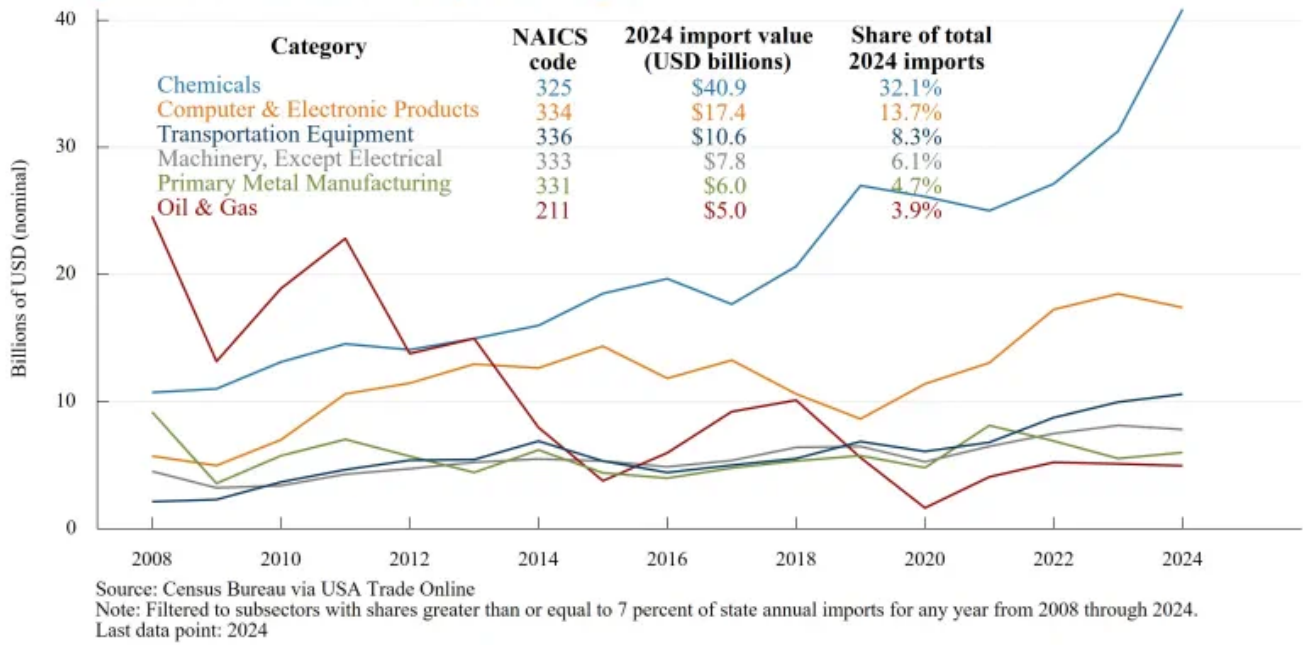


Figure 3 shows the US dollar value of imported products from the largest [North American Industry Classification System](#) (NAICS) categories from 2008 through 2024. Pennsylvania's imports of chemicals have increased sharply in recent years, driven by imports of pharmaceuticals and medicines, with its overall chemicals imports rising by about \$9.5 billion between 2023 and 2024 alone. As shown in the inset table in Figure 3, chemicals was the state's largest import category in 2024, accounting for 32.1 percent of total imports at a value of \$40.9 billion. Pennsylvania also imported \$17.4 billion worth of computer and electronic products in 2024, its second-largest import category that year, with more than half (53.3 percent) coming from China. In 2008, nearly one-third of the state's imports were oil and gas, but this share has decreased substantially over time and was just 3.9 percent in 2024. The decline in Pennsylvania's oil and gas imports has occurred amid growth in the state's natural gas reserves due to development in the Marcellus Shale. This rock formation underlies roughly 60 percent of Pennsylvania and is the largest natural gas field in the nation. [Among all states, Pennsylvania was second only to Texas in natural gas production in 2023](#).

**Figure 3. Value of Pennsylvania's Imports by Category**



## Where Do Pennsylvania's Exports Go, and What Products Does the State Sell?

Figure 4 shows that, from 2008 through 2024, Canada was Pennsylvania's largest export market. The shares of the state's four largest export destinations (in descending order as of 2024)—Canada, the European Union, Mexico, and China—have generally been stable since 2015. In 2024, nearly half of the state's exports were sent to Canada or the European Union. Chemicals accounted for the greatest share (28.7 percent) of its 2024 exports to the European Union. Computer and electronic products represented the largest share (about 16 percent) of Pennsylvania's 2024 exports to Canada, while chemicals accounted for the second-largest share (14.4 percent).

Figure 4. Largest Trading Partners' Share of Pennsylvania's Exports

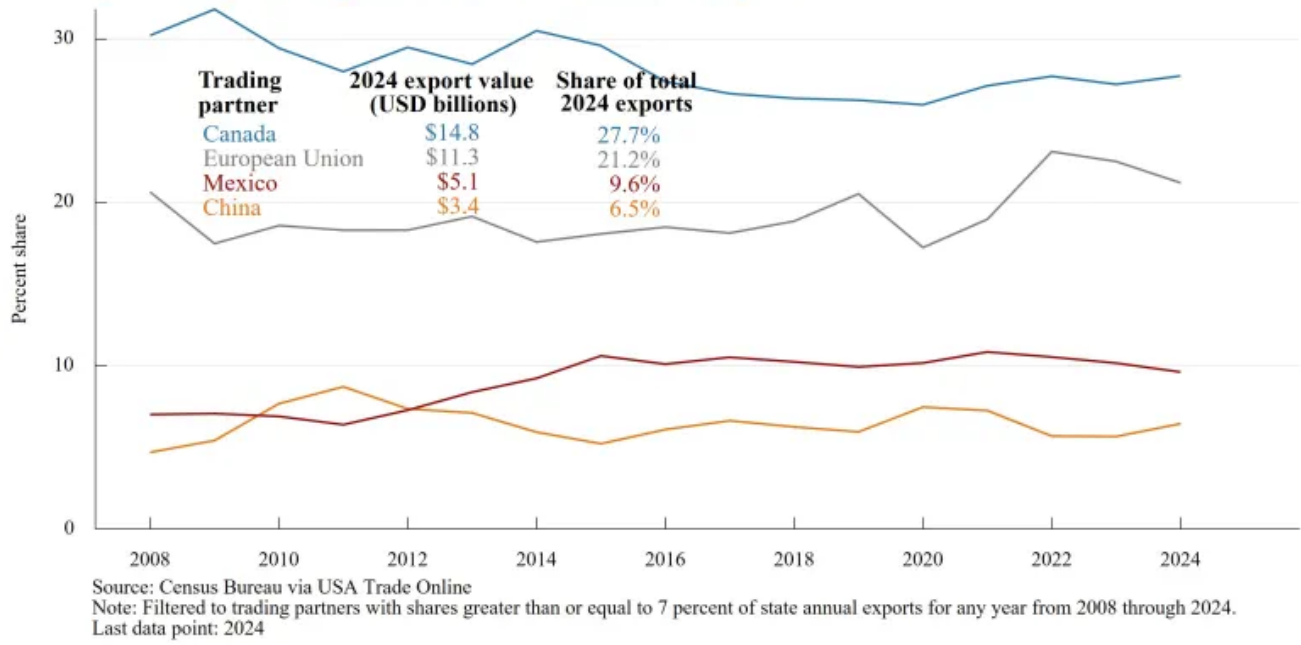
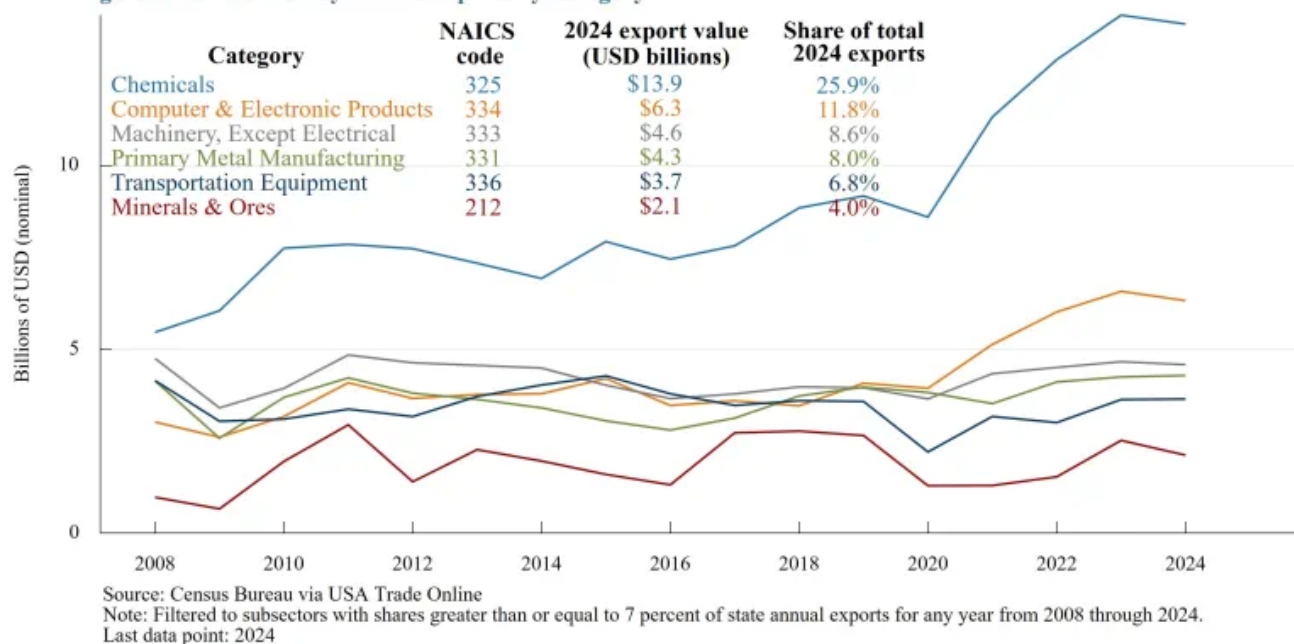


Figure 5 shows that, from 2008 through 2024, chemicals was Pennsylvania's largest export category. Starting in 2020, the value of the state's chemicals exports saw a sizable jump. Pennsylvania exported about \$8.6 billion worth of chemicals products in 2020. By 2024, that value had increased to \$13.9 billion, with pharmaceuticals and medicines contributing \$8.1 billion and basic chemicals accounting for \$2.3 billion. The sharp rise in chemicals exports that began in 2020 was supported partly by [increased production of natural gas in Pennsylvania due to the Marcellus Shale boom, which has allowed for more petrochemical manufacturing](#).<sup>4</sup> Outside of chemicals, computer and electronic products is the state's only other product category to eclipse \$5 billion in annual exports, a level it surpassed from 2021 through 2024.

Figure 5. Value of Pennsylvania's Exports by Category



## Conclusion

From 2008 through 2024, Canada was the largest destination for Pennsylvania's exports. Chemicals was the state's largest export category during this period. There was a surge in the dollar value of Pennsylvania's chemicals exports starting in 2020 thanks in part to increased petrochemical manufacturing supported by the Marcellus Shale boom. Over the past several years, an increased share of Pennsylvania's imports has come from the European Union, while the share of imports from China has decreased.

## Footnotes

1. The Fourth District covers Ohio, the eastern half of Kentucky, parts of western Pennsylvania, and the northern panhandle of West Virginia. [Return to 1](#)
2. The data collected for this *District Data Brief* were sourced from the Census USA Trade Online data tool, which is subject to revisions. The data contained in the figures' inset tables have been rounded. [Return to 2](#)
3. Whether something is classified as an import depends on where the product is manufactured or where it undergoes "substantial transformation," not where the company is headquartered. For example, when a pharmaceutical company that is headquartered in the United States manufactures products in Ireland or Singapore and then ships those products to the United States, those products would be considered imports from Ireland or Singapore. [Return to 3](#)
4. Petrochemicals is a subcategory of Basic Chemicals under the NAICS. [Return to 4](#)

Appendix

TABLE A1. TOP CATEGORIES AND INDUSTRY GROUPS FOR PENNSYLVANIA’S IMPORTS IN 2024

|                             |                                                                            | 2024 import value<br>(USD billions) |
|-----------------------------|----------------------------------------------------------------------------|-------------------------------------|
| Oil and Gas                 | Total                                                                      | 4.95                                |
| Chemicals                   | Basic Chemicals                                                            | 1.62                                |
|                             | Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments | 0.94                                |
|                             | Pesticides, Fertilizers, and Other Agricultural Chemicals                  | 0.22                                |
|                             | Pharmaceuticals and Medicines                                              | 35.67                               |
|                             | Paints, Coatings, and Adhesives                                            | 0.19                                |
|                             | Soaps, Cleaning Compounds, and Toilet Preparations                         | 0.78                                |
|                             | Other Chemical Products and Preparations                                   | 1.46                                |
|                             | Total                                                                      | 40.88                               |
| Primary Metal Manufacturing | Iron, Steel, and Ferroalloy                                                | 2.01                                |
|                             | Steel Products from Purchased Steel                                        | 0.23                                |

|                                         |                                                                                |             |
|-----------------------------------------|--------------------------------------------------------------------------------|-------------|
|                                         | Alumina, Aluminum, and Processing                                              | 0.67        |
|                                         | Nonferrous Metal (except Aluminum) and Processing                              | 3.04        |
|                                         | Foundries                                                                      | 0.06        |
|                                         | <b>Total</b>                                                                   | <b>6.01</b> |
| <b>Machinery, Except Electrical</b>     | Agriculture, Construction, and Machinery                                       | 2.48        |
|                                         | Industrial Machinery                                                           | 0.70        |
|                                         | Commercial and Service Industry Machinery                                      | 0.41        |
|                                         | Heating, Ventilation, Air-Conditioning, and Commercial Refrigeration Equipment | 0.59        |
|                                         | Metalworking Machinery                                                         | 0.38        |
|                                         | Engines, Turbines, and Power Transmission Equipment                            | 0.53        |
|                                         | Other General Purpose Machinery                                                | 2.73        |
|                                         | <b>Total</b>                                                                   | <b>7.82</b> |
| <b>Computer and Electronic Products</b> | Computer Equipment                                                             | 4.63        |
|                                         | Communications Equipment                                                       | 7.64        |

|                                 |                                                               |              |
|---------------------------------|---------------------------------------------------------------|--------------|
|                                 | Audio and Video Equipment                                     | 1.15         |
|                                 | Semiconductors and Other Electronic Components                | 1.19         |
|                                 | Navigational, Measuring, Medical, and Control Instruments     | 2.67         |
|                                 | Magnetic and Optical Media                                    | 0.12         |
|                                 | <b>Total</b>                                                  | <b>17.40</b> |
| <b>Transportation Equipment</b> | Motor Vehicles                                                | 8.34         |
|                                 | Motor Vehicle Bodies and Trailers                             | 0.03         |
|                                 | Motor Vehicle Parts                                           | 0.94         |
|                                 | Aerospace Products and Parts                                  | 0.57         |
|                                 | Railroad Rolling Stock                                        | 0.22         |
|                                 | Ships and Boats                                               | 0.03         |
|                                 | Transportation Equipment, Not Elsewhere Specified or Included | 0.45         |
|                                 | <b>Total</b>                                                  | <b>10.59</b> |

Source: Census Bureau via USA Trade Online

Note: Subsector totals may not sum to sector totals due to rounding.

TABLE A2. TOP CATEGORIES AND INDUSTRY GROUPS FOR PENNSYLVANIA’S EXPORTS IN 2024

|                   |                                                                            | 2024 export value<br>(USD billions) |
|-------------------|----------------------------------------------------------------------------|-------------------------------------|
| Minerals and Ores | Coal and Petroleum Gases                                                   | 1.94                                |
|                   | Metal Ores                                                                 | 0.16                                |
|                   | Nonmetallic Minerals                                                       | 0.02                                |
|                   | Total                                                                      | 2.12                                |
| Chemicals         | Basic Chemicals                                                            | 2.29                                |
|                   | Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments | 1.38                                |
|                   | Pesticides, Fertilizers, and Other Agricultural Chemicals                  | 0.20                                |
|                   | Pharmaceuticals and Medicines                                              | 8.10                                |
|                   | Paints, Coatings, and Adhesives                                            | 0.39                                |
|                   | Soaps, Cleaning Compounds, and Toilet Preparations                         | 0.75                                |
|                   | Other Chemical Products and Preparations                                   | 0.75                                |
|                   | Total                                                                      | 13.86                               |

|                                     |                                                                                |             |
|-------------------------------------|--------------------------------------------------------------------------------|-------------|
| <b>Primary Metal Manufacturing</b>  | Iron, Steel, and Ferroalloy                                                    | 1.62        |
|                                     | Steel Products from Purchased Steel                                            | 0.15        |
|                                     | Alumina, Aluminum, and Processing                                              | 0.25        |
|                                     | Nonferrous Metal (except Aluminum) and Processing                              | 2.21        |
|                                     | Foundries                                                                      | 0.06        |
|                                     | <b>Total</b>                                                                   | <b>4.30</b> |
| <b>Machinery, Except Electrical</b> | Agriculture, Construction, and Machinery                                       | 0.87        |
|                                     | Industrial Machinery                                                           | 0.42        |
|                                     | Commercial and Service Industry Machinery                                      | 0.29        |
|                                     | Heating, Ventilation, Air-Conditioning, and Commercial Refrigeration Equipment | 0.29        |
|                                     | Metalworking Machinery                                                         | 0.29        |
|                                     | Engines, Turbines, and Power Transmission Equipment                            | 0.91        |
|                                     | Other General Purpose Machinery                                                | 1.51        |
|                                     | <b>Total</b>                                                                   | <b>4.59</b> |

|                                         |                                                               |             |
|-----------------------------------------|---------------------------------------------------------------|-------------|
| <b>Computer and Electronic Products</b> | Computer Equipment                                            | 1.05        |
|                                         | Communications Equipment                                      | 2.01        |
|                                         | Audio and Video Equipment                                     | 0.43        |
|                                         | Semiconductors and Other Electronic Components                | 0.50        |
|                                         | Navigational, Measuring, Medical, and Control Instruments     | 2.30        |
|                                         | Magnetic and Optical Media                                    | 0.05        |
|                                         | <b>Total</b>                                                  | <b>6.33</b> |
| <b>Transportation Equipment</b>         | Motor Vehicles                                                | 0.45        |
|                                         | Motor Vehicle Bodies and Trailers                             | 0.12        |
|                                         | Motor Vehicle Parts                                           | 0.85        |
|                                         | Aerospace Products and Parts                                  | 1.52        |
|                                         | Railroad Rolling Stock                                        | 0.34        |
|                                         | Ships and Boats                                               | 0.00*       |
|                                         | Transportation Equipment, Not Elsewhere Specified or Included | 0.37        |

|  |              |             |
|--|--------------|-------------|
|  | <b>Total</b> | <b>3.65</b> |
|--|--------------|-------------|

Source: Census Bureau via USA Trade Online

Note: Subsector totals may not sum to sector totals due to rounding.

\*Number is too small to be displayed due to rounding.

## References

- The American Oil & Gas Reporter. 2017. "Pennsylvania Positioned as Petrochemical Powerhouse." May. <https://www.aogr.com/web-exclusives/exclusive-story/pennsylvania-positioned-as-petrochemical-powerhouse> .
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