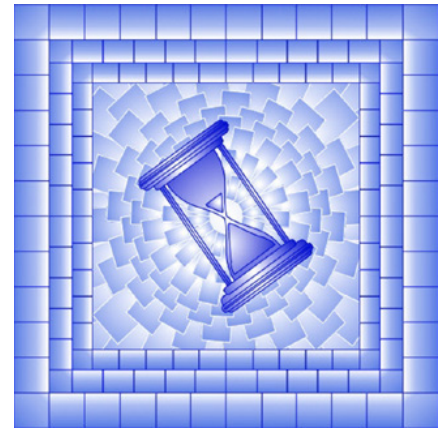


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Industrial Product Price Index: Annual review, 2019

by Tshibangu Batubenga and Daanish Garda

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1 Summary

The IPPI fell 0.1% between 2018 and 2019, following two consecutive years of increases. A 5.0% decrease in energy and petroleum product prices was the main factor behind this annual decline. Primary non-ferrous metal products (-2.7%) and chemicals and chemical products (-2.3%) also contributed to the decrease in the IPPI.

Excluding energy and petroleum products, the IPPI rose 0.7%, mainly as a result of higher prices for motorized and recreational vehicles (+2.0%), as well as meat, fish and dairy products (+3.6%).

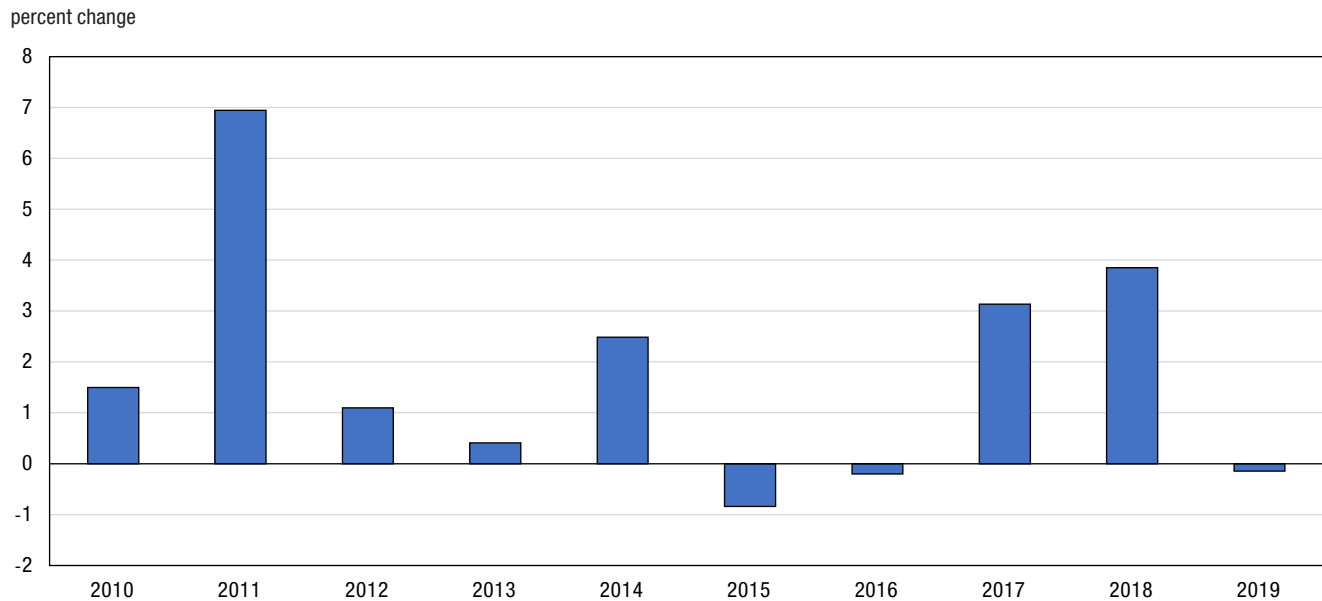
2 Industrial product prices edged down in 2019

Prices for products manufactured in Canada, as measured by the Industrial Product Price Index, fell 0.1% between 2018 and 2019. This followed two consecutive increases in 2017 (+3.1%) and 2018 (+3.9%). Among the 21 major commodity groups, 6 were down and 15 were up.

Energy and petroleum products is often the group with the largest influence on the change in the IPPI, due to its high relative importance and volatility. In 2019, 9 of the 12 monthly changes in the IPPI were driven by this group.

Excluding energy and petroleum products, the IPPI grew 0.7% in 2019, continuing an upward trend observed since 2006.

Chart 1
The IPPI from 2010 to 2019



Source: Statistics Canada. Table 18-10-0029-01.

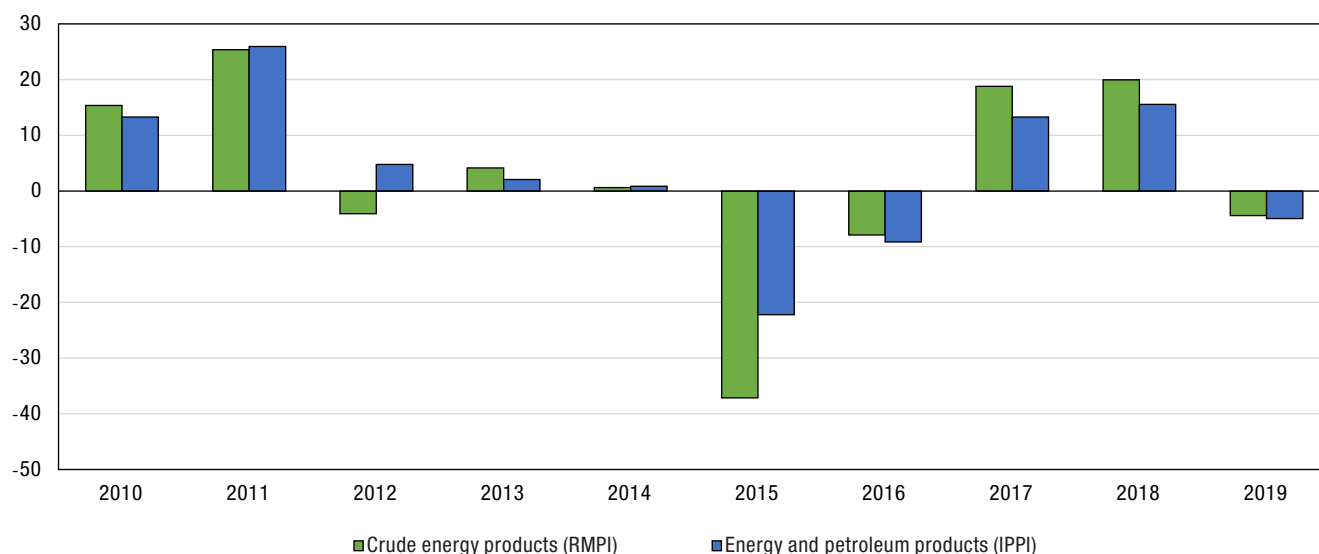
2.1 Energy and petroleum products

Energy and petroleum products declined 5.0% in 2019, after increasing 13.3% in 2017 and 15.6% in 2018. The decline in this commodity group was mainly due to lower prices for refined petroleum products, including motor gasoline (-7.5%), light fuel oils (-6.7%), and diesel fuel (-5.6%).

Prices for refined petroleum products are greatly influenced by the price of crude oil. According to the Raw Materials Price Index (RMPI), the price of conventional crude oil declined 4.5% in 2019. The chart below shows the price movements for crude energy products (from the RMPI) and energy and petroleum products (from the IPPI).

Chart 2
Energy: IPPI vs. RMPI

percent change



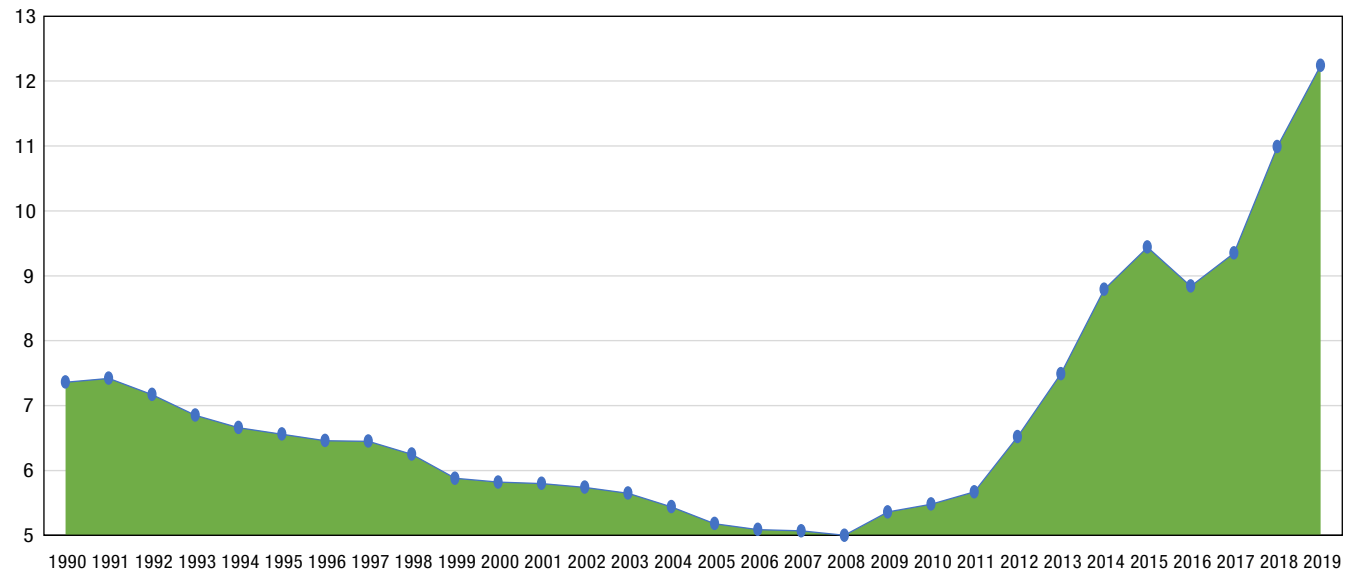
Source: Statistics Canada. Tables: 18-10-0030-01, 18-10-0034-01.

Crude oil prices were influenced by many factors in 2019. Among those that exerted downward pressure on prices were continued growth of oil production in the United States (U.S.), uncertainty about demand for petroleum products, and concerns about global economic growth related to the trade dispute between China and the United States. Conversely, efforts by the Organization of the Petroleum Exporting Countries (OPEC) to limit production, U.S. sanctions against Iran and Venezuela, as well as attacks on oil infrastructure in Saudi Arabia have had an upward influence on prices.¹

1. U.S. Energy Information Administration, "[Crude oil prices were generally lower in 2019 than in 2018](#)," 7 January 2020.

Chart 3
U.S. Crude Oil Production (1990 to 2019)

million barrels per day



Source: U.S. Energy Information Administration. Short-Term Energy Outlook.

2.2 Primary non-ferrous metal products

The primary non-ferrous metals commodity group decreased by 2.7% in 2019, in spite of increasing prices for precious metals.²

2.2.1 Contributors to the overall decrease in primary non-ferrous metals

Downward influence came mostly from other non-ferrous metals³ (-15.2%), which includes cobalt⁴ (-57.6%) and zinc⁵ (-10.0%). Aluminum⁶ (-15.7%) and copper⁷ (-5.7%) also contributed to the overall decrease in the price of primary non-ferrous metals.

2.2.2 Gold and silver increase

Prices for precious metals were up 7.3% following a 3.5% decrease in 2018. The price of gold⁸ rose 12.3%, and silver⁹ was up 4.6%. Global macroeconomic pessimism drove investors to investments regarded as safe havens.

A corroborating indication that safe investments were in demand came from the bond market. In August 2019, the value of global negative-yielding bonds reached a record high of \$17 trillion USD. In late December 2019, the value dropped back to \$11.8 trillion USD, coinciding with signs of improving U.S.-China trade relations.¹⁰

2. Unwrought precious metals and precious metal alloys.

3. Other unwrought non-ferrous metals and non-ferrous metal alloys.

4. Unwrought cobalt and cobalt alloys.

5. Unwrought zinc and zinc alloys.

6. Unwrought aluminum and aluminum alloys.

7. Unwrought copper and copper alloys.

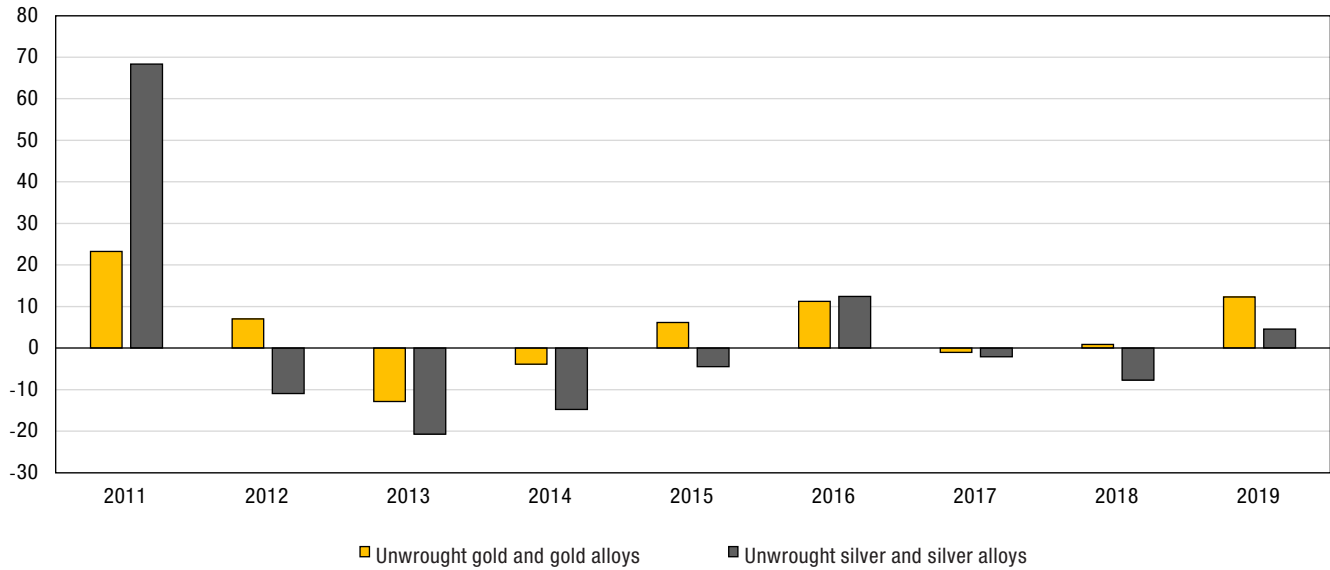
8. Unwrought gold and gold alloys.

9. Unwrought silver and silver alloys.

10. J. Ainger, "Bond World Is Backing Away From All That Negativity as 2019 Ends," 23 December 2019.

Chart 4
Gold and Silver increase in 2019

percent change



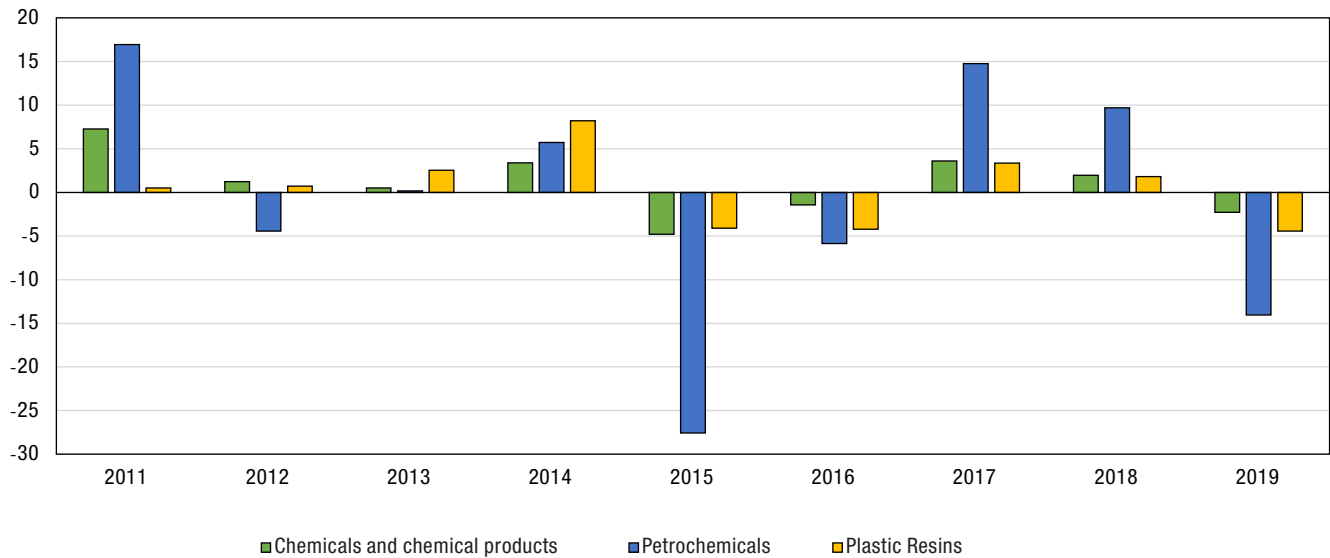
Source: Statistics Canada. Table 18-10-0030-01.

2.3 Petrochemicals and plastic resins

After rising over the past two years, chemicals and chemical product prices declined 2.3% in 2019.

Chart 5
Downstream prices drive down Chemicals

percent change

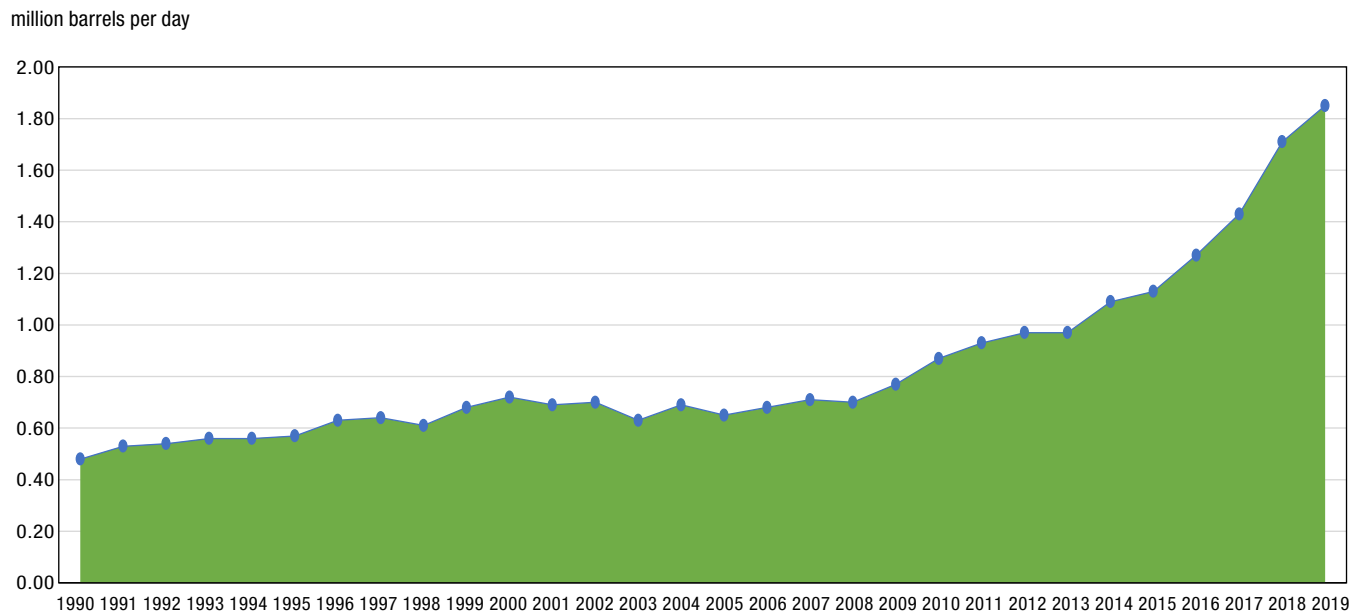


Source: Statistics Canada. Table 18-10-0030-01.

The decrease was mostly attributable to declines in prices for petrochemicals and plastic resins. Prices of petrochemical products were down by 14.0%; prices for plastic resins, which are derived from petrochemicals, decreased by 4.4%. This was mostly due to lower prices for polyethylene resins (-17.1%).

These decreases were attributable mainly to increased production capacity for petrochemicals and their downstream products. The US shale natural gas boom has vastly increased the supply of ethane, which is a primary feedstock for petrochemicals. Thirteen new polyethylene plant start-ups between 2017 and 2019 have increased North American capacity by 35%.^{11, 12}

Chart 6
U.S. Ethane Production at Natural Gas Processing Plants



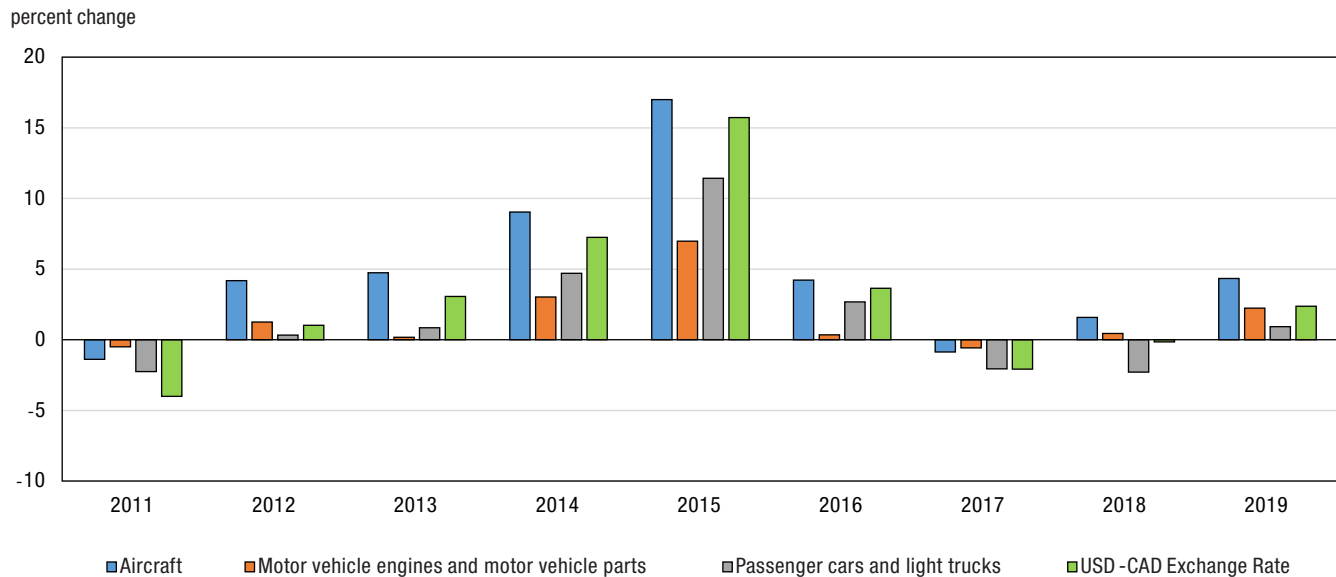
Source: U.S. Energy Information Administration. Short-Term Energy Outlook.

2.4 Motorized and recreational vehicles

Prices for motorized and recreational vehicles increased by 2.0% in 2019. This was driven by increases for passenger cars and light trucks (+0.9%), motor vehicle engines and motor vehicle parts (+2.2%), and aircraft (+4.3%). Prices for motorized and recreational vehicles tend to follow the movement in the USD-CAD exchange rate. In 2019, the Canadian dollar depreciated by 2.4% relative to the U.S. dollar.

11. S&P Global Platts, "Global polyethylene oversupply to weigh on prices in H1 2020," 20 November 2019.
12. S&P Global Platts, "Global petrochemical trends H1 2020," January 2020.

Chart 7
USD-CAD Exchange rate effect



Source: Statistics Canada. Table 18-10-0029-01. (Exchange Rate 2017-2019); Statistics Canada. Table 33-10-0163-01. (Exchange Rate 2010-2016); Bank of Canada. Historical Noon and Closing Rates.

2.5 Meat, fish and dairy products

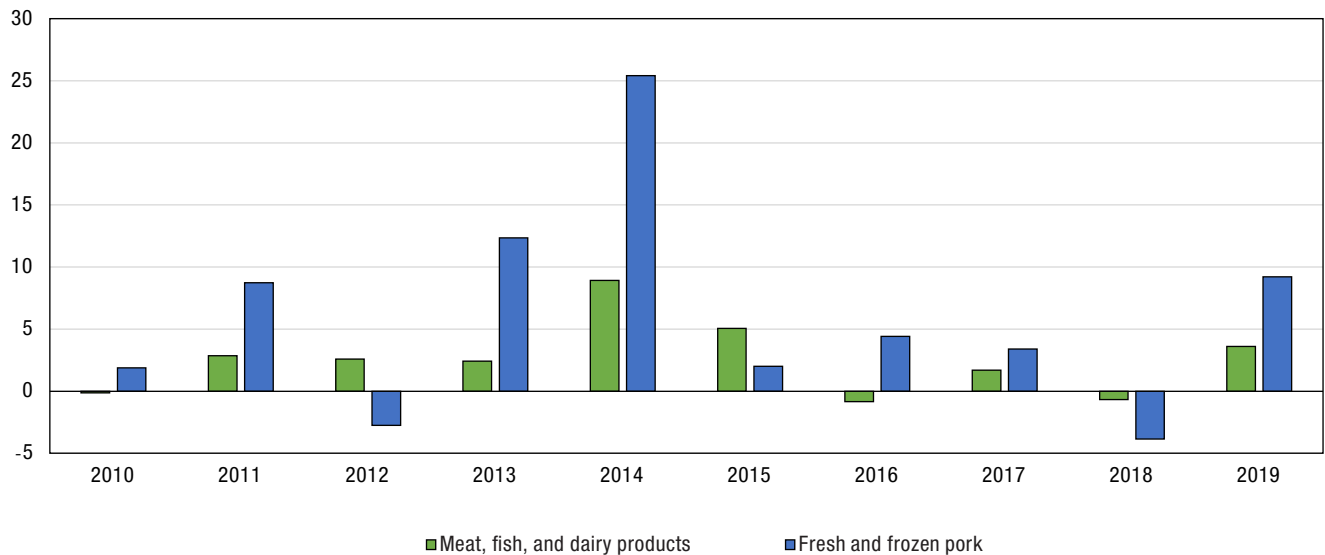
Prices for meat, fish, and dairy products were 3.6% higher in 2019 compared to 2018, driven primarily by higher prices for fresh and frozen pork.

The price of fresh and frozen pork was 9.2% higher in 2019. Global production of pork faced a supply shock as African swine fever emaciated the population of hogs. The disease has had its biggest impact in China, which is the largest consumer and producer of pork. The disease was first reported in August 2018 in Shenyang, China. Chinese pork production was down 21.3% in 2019 when compared with the previous year.¹³ The shock in supply increased prices for pork worldwide, and Canada was no exception. Exports of Canadian pork to China were blocked from late June to early November, which placed a downward influence on these increasing prices.

13. Reuters, "[China's 2019 pork output plunges as African swine fever cuts herd](#)," 16 January 2020.

Chart 8
Pork and the Meat, Fish, and Dairy Products Group

percent change



Source: Statistics Canada. Table 18-10-0030-01.

2.6 Other influences in 2019

Prices for fabricated metal products and construction materials, as well as for machinery and equipment, also influenced the IPPI movement in 2019, but to a lesser extent.

Fabricated metal products and construction materials were up for the sixth consecutive year in 2019. Prices rose 3.0%, following a 6.5% increase in 2018. This increase was mainly due to a 4.3% rise in prices for metal building and construction materials.

Prices for machinery and equipment, which have been rising since 2011, were up 1.5% from 2018.

3 Appendix

The Industrial Product Price Index (IPPI) measures price changes of goods sold by Canadian manufacturers.

Each month, approximately 3,600 prices are collected and combined together to generate the IPPI. These prices are the manufacturer's *selling* price excluding all indirect taxes, such as sales taxes and tariffs as this money does not go to the factors of production (i.e. labour, capital, or profit). They also exclude any transportation services beyond the factory gate, and any distribution services performed by the retail or wholesale trade industries.¹⁴

Goods are aggregated hierarchically into groups based on the North American Product Classification System (NAPCS). For example, 'motor gasoline' is a component of 'refined petroleum energy products, and biofuels', which is a component of 'energy and petroleum products', which is a component of the IPPI. An index value and percent change is calculated for each one of these levels.

Each good and group has a weight (also referred to as 'relative importance'), based on the value of the total sales of that good by domestic manufacturers in a specific reference year. Groups contain the sum of the weights of the goods contained therein. A good or group with a higher weight will affect the index proportionally based on its weight. Therefore a large price movement from a lower weighted group can have less impact than a very small movement from a higher weighted group.

Typically the IPPI is measured and published monthly. For the purposes of this analytical paper, the annual average index value is calculated, and comparisons are done from year to year.¹⁵

14. Government of Canada, Statistics Canada, "[Surveys and statistical programs - Industrial Product Price Index \(IPPI\)](#)," 03 01 2020.

15. With each monthly release, data for the six previous months are subject to revision. The values used in this analytical paper are current as of January 2020.