

Analytical Paper

Analysis in Brief

Manufacturing: The Year 2014 in Review

by Elizabeth Richards, Cory Snoddon, James Brown



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Symbols

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- p preliminary
- r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

Note to readers

A correction has been made to the HTML version of this product. In the description of Chart 1 in the HTML version of the paper, the units for the horizontal axis were corrected to display the specific quarters and years for the period from 2005 to 2014. The chart title was also slightly changed in the HTML and PDF versions to improve the interpretability of the chart.

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Note to readers

All monthly and quarterly manufacturing sales, inventories, and unfilled orders amounts in this study are derived from seasonally adjusted data. Annual totals for manufacturing sales (CANSIM 304-0014 and CANSIM 304-0015) have been calculated using unadjusted data, as is the case for annual averages of inventories and unfilled orders (CANSIM 304-0014). Seasonally adjusted and unadjusted data for the Monthly Survey of Manufacturing for 2014 will be reconciled after the release of this publication, as part of the survey's annual revisions process. Seasonally adjusted and unadjusted data for 2015 will be reconciled in the following year's annual revisions process.

Manufacturing: The Year 2014 in Review

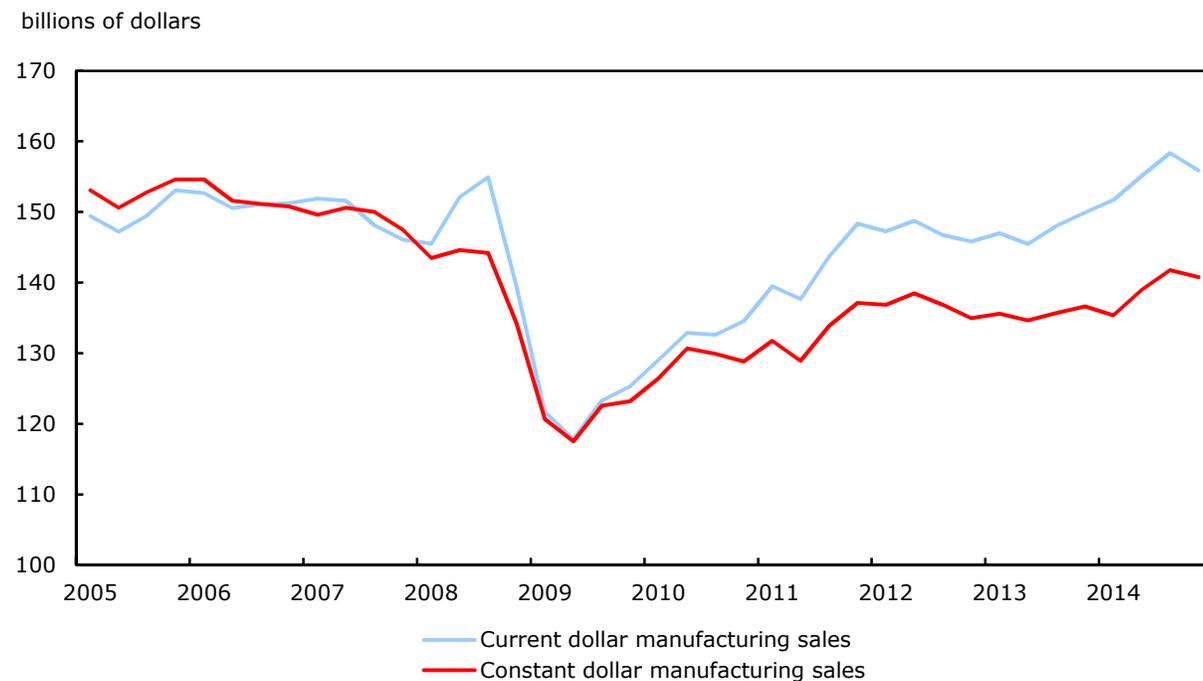
by Elizabeth Richards, Cory Snoddon, James Brown

1 In 2014, sales surpass pre-recession levels

Manufacturing sales reached an all time high in 2014, increasing 5.3% to \$621.7 billion. Durable and non-durable goods industries contributed to the gains. Although the majority of manufacturing industries posted higher sales, transportation equipment, food and primary metal manufacturers were the main contributors to the overall growth.

In constant dollars, measuring the volume of manufactured goods sold by removing price fluctuations, sales rose 2.7% to \$556.9 billion. As per the Industrial Product Price Index, average prices for manufactured goods also increased during the year, up 2.5%.

Chart 1
Quarterly manufacturing sales 2005 to 2014



Sources: CANSIM table 304-0014 and 377-0009.

The Canadian manufacturing sector reached a milestone in 2014 as sales surpassed their pre-recession value for the first time. Following a relatively stable period before the recession, the sector suffered significant losses during the economic downturn. Sales were relatively stable after a high of \$605.5 billion in 2006 and dropped 17.6% in 2009 as the global economy entered the recession. Sales reached the lowest point in the second quarter of 2009. Manufacturers partly recovered in 2010 and 2011, with annual sales gains of 8.4% and 7.6% respectively. In comparison to the United States manufacturing sector, Canadian manufacturers were slower to recover from the downturn. The US manufacturing sector surpassed its pre-recession high in 2011.¹

Despite the current dollar gains, constant dollar manufacturing sales in 2014 remained below pre-recession levels, which peaked at \$611.1 billion in 2005, implying that higher prices were partly responsible for the growth in sales over the past few years.

The manufacturing sector's relative contribution to Canada's real gross domestic product (GDP) has also declined since the downturn. In 2014, the sector represented 10.6% of the economy, down from 11.9% in 2008.

In terms of employment, the average number of workers in the manufacturing sector decreased 0.8% to 1,485,189 in 2014. After dropping in 2009 during the downturn, employment in the manufacturing sector bounced back, reaching a recent high in 2012, an average of 1,506,954 employees. Employment has been trending downwards since then. In 2014, the computer and electronic product industry posted the largest decline, down 7.0%. Machinery, printing, furniture and clothing also contributed to the decreases.

Capital expenditures for manufacturing increased 8.1% to \$17.1 billion in 2014. After a decline in 2009, investment for manufacturing has generally been trending upwards. Investment in 2014 reached its highest level since the 2007 pre-recession high. In terms of industries, transportation equipment was mainly responsible for the increase in capital expenditures, increasing 56.3% to \$3.0 billion year over year in 2014. There were multiple other contributing industries, in particular non-metallic minerals, wood products, chemicals and fabricated metals. Lower investment in primary metals offset a portion of the gains.

On average, capacity utilization for the manufacturing sector rose 3.0% in 2014, indicating an increase in the ratio of actual output to potential output. Although capacity utilization declined slightly from 81.1% in the third quarter of 2013 to 80.6% in the first quarter of 2014, it advanced each quarter thereafter, reaching a high of 83.7% in the fourth quarter of 2014.

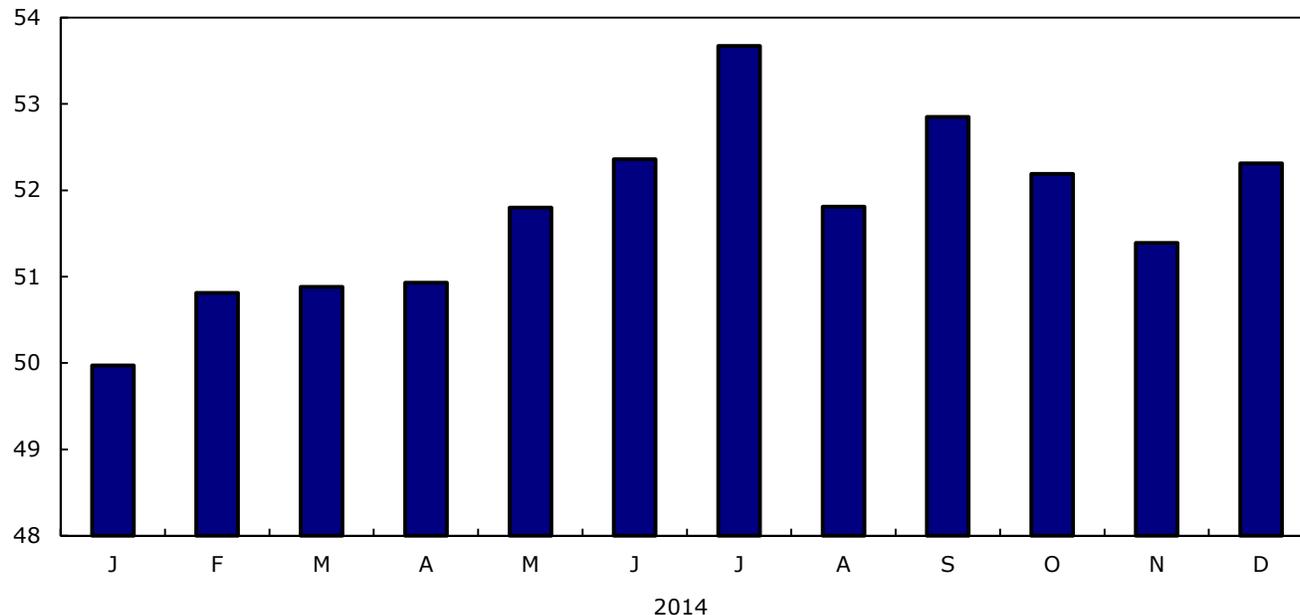
2 Quarterly and monthly trends in manufacturing in 2014

Sales for the manufacturing sector increased in the first three quarters of the year in 2014, posting seven consecutive monthly gains since December 2013. Sales peaked at \$53.7 billion in July, exceeding the previous monthly high recorded in July 2008 of \$53.2 billion. With the exception of January, monthly manufacturing sales remained above \$50.0 billion throughout the year.

1. United States Census Bureau. 2015. Manufacturers' Shipments, Inventories and Orders.

Chart 2
Monthly manufacturing sales in 2014

billions of dollars



Source: CANSIM table 304-0014.

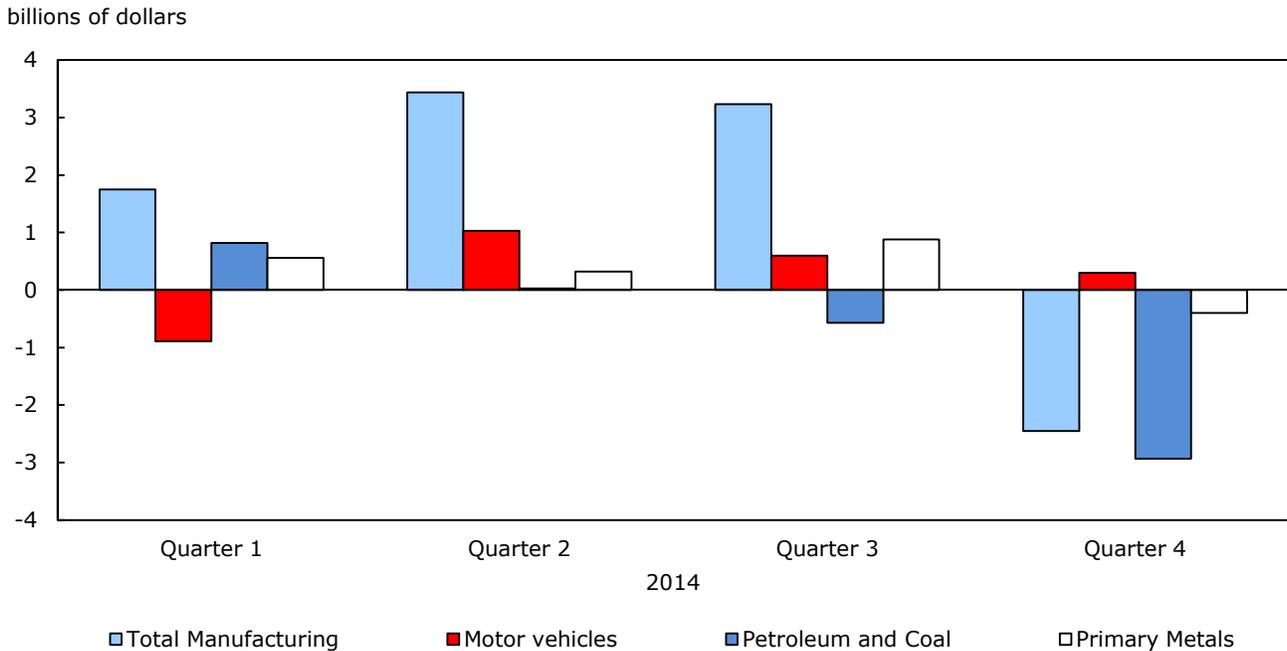
Quarterly sales were up 1.2% in the first quarter of 2014 from the previous quarter even though only 9 of 21 manufacturing industries posted higher sales. The petroleum and coal product industry was the main contributor to the increase, rising 3.9%. The advance was a result of higher sales in February, partially reflecting a 2.5% increase in prices for the month. Primary metals also contributed to growth in the first quarter, sales rose 5.2%.

Manufacturing sales rose 2.3% in the second quarter. Motor vehicle manufacturing posted an 8.0% increase, with notable gains in both April and May. Higher sales of food products also contributed, up 3.4% primarily on account of meat product manufacturing. The paper industry increased 5.5% as manufacturers reported higher sales in April and May after rebounding from the strike at Port Metro Vancouver in March.

Sales increased 2.1% during the third quarter, reaching an annual high in July. Primary metals, motor vehicles and aerospace product and parts were the main contributors to the gains. Sales in the motor vehicle industry were 4.4% higher in the third quarter. Each year, motor vehicle assembly plants shutdown in July. In 2014, the annual shutdowns were shorter than in previous years, which led to gains for the industry. A decline in the petroleum and coal products industry offset some of these gains, as prices were down 8.6% from June to October.

The manufacturing sector reported lower sales in the fourth quarter, down 1.5%. Despite the decrease, fourth quarter sales remained above first and second quarter sales. The decrease reflected lower sales in the petroleum and coal products industry. Sales for the industry posted six consecutive monthly declines starting in July, coinciding with the fall in energy prices. Even with these declines, year-over-year sales of petroleum and coal products were up 0.8% to \$83.4 billion, as gains in the first two quarters more than offset the price-related declines in late 2014. Gains in transportation and in machinery manufacturing partly offset the overall declines in the quarter. Machinery sales reached a three year high in December.

Chart 3
Change in sales by quarter, total manufacturing and key industries

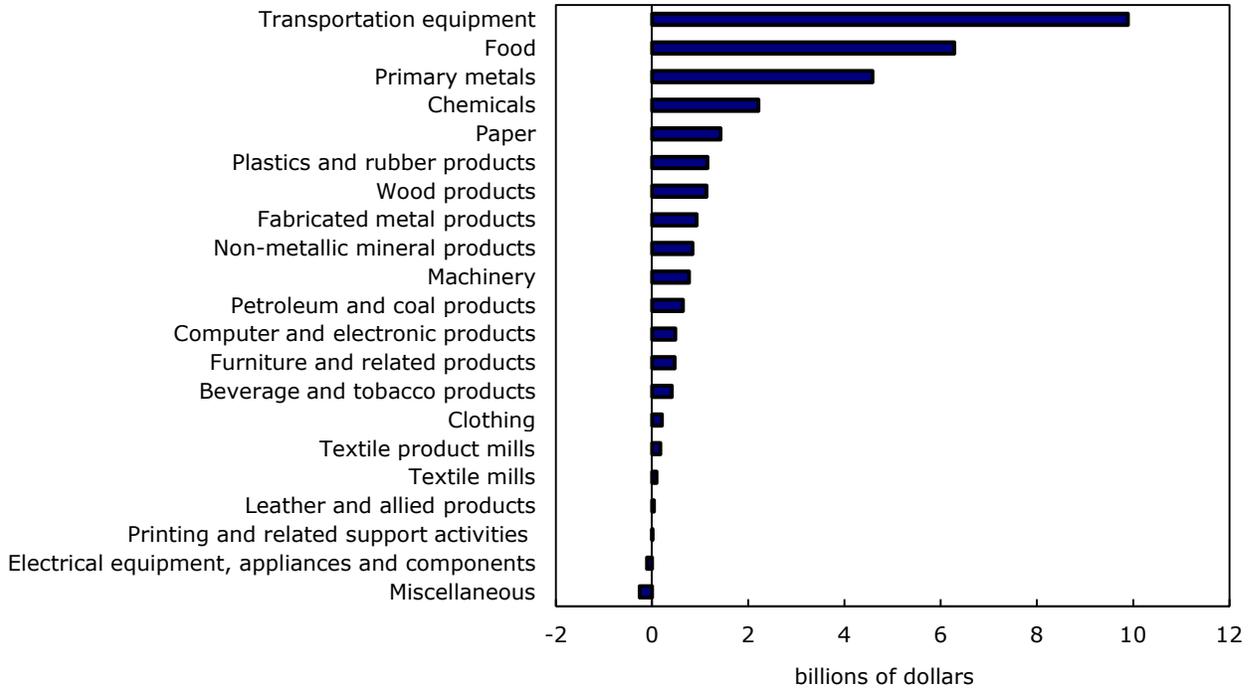


Source: CANSIM table 304-0014.

3 Transportation equipment, food and primary metals led sales growth overall in 2014

In current dollars, 19 of 21 manufacturing industries posted higher sales in 2014. The durable goods industries contributed to more than half of the dollar gain, as sales advanced 6.3%, while sales of non-durables rose 4.3%. Transportation equipment, food, and primary metals posted the largest dollar increases. These three industries accounted for approximately two-thirds of the year-over-year dollar increase. In food and primary metals, the gains partially reflected higher prices. However, the growth in transportation indicates a longer-term trend and a recovery from the economic downturn.

Chart 4
Manufacturing sales by industry, dollar change from 2013



Source: CANSIM table 304-0014.

3.1 Transportation equipment posted largest gains overall in 2014

Sales for the transportation equipment industry increased 9.6% to \$113.0 billion, representing the largest dollar gain of the 21 industries in the manufacturing sector. Motor vehicle manufacturing posted the largest increase within transportation equipment manufacturing, as sales rose 5.6% to \$56.0 billion, while motor vehicle parts manufacturing were up 12.2% to \$26.5 billion. Together, these two sub-industries accounted for more than half the increase in transportation equipment. The gains partially reflected higher prices, which rose 4.6% for motor vehicles and 3.4% for motor vehicle parts.

Sales of motor vehicles have trended upwards in recent years, increasing in four of the last five years. Sales in 2014 rose 66.0% from 2009 when auto sales contracted sharply during the recession. Despite the recent upward trend, annual sales remain below the pre-recession value reached in 2007. With a large portion of motor vehicles and parts being shipped out of the country, the recent trend of exports for these two industries has been similar to that of sales. Despite the recent gains, as with sales, exports of motor vehicles and parts remain below pre-recession levels.

Aerospace products and parts also contributed to the gains in the transportation equipment industry. Aerospace production increased 13.2% to \$19.9 billion in 2014, the highest level of production for the industry since the series began in 1992. The depreciation in the value of the Canadian dollar partially explains the gains in 2014, as much of the economic activity in this industry is conducted in US dollars. In 2014, the value of the Canadian dollar depreciated on average, especially in the second half of the year. The measured value in Canadian dollar terms of production in aerospace products and parts increased as a result.

3.2 Food sales led gains among non-durable manufacturing

Sales of food products rose 7.1% to \$95.0 billion in 2014, representing over half the dollar gain in non-durable industries. The increase stemmed primarily from meat product manufacturing, which rose 15.2%. Manufacturing sales of animal (except poultry) slaughtering increased 28.3%, following three years of declines. The gains in this sub-industry reflect higher prices, which rose 17.8% on average in 2014.

In January 2014, Canada reported its first case of Porcine Epidemic Diarrhea Virus (PEDV), a highly contagious pig disease. The price for pork spiked 34.5% from January to April 2014 on account of supply concerns in the industry.² While pork prices started to decline in September, beef prices steadily increased over the year. The diverging trends kept prices in the animal (except poultry) slaughtering sub-industry high throughout 2014.

3.3 Primary Metals advanced on widespread gains

Sales of primary metals rose 10.5% to \$48.0 billion in 2014, reflecting widespread increases among manufacturers in the industry. Manufacturers of iron and steel mill and ferro-alloy posted the largest gains, as sales for the sub-industry rose 26.9% to \$13.2 billion. This gain was partly the result of higher prices, increasing an average of 10.1% for the year. Exports of unwrought iron, steel and ferro-alloys, and basic and semi-finished ferrous metal products (NAPCS 311) increased 16.3% representing the largest gain since 2010. Excluding exports in 2008 of these commodities, this was the highest level on record.

Alumina and aluminum production was the second main contributor to the increase in primary metals. Manufacturing sales of alumina and aluminum were up 9.8% to \$9.7 billion, reflecting a 6.5% increase of prices for the year. Exports of unwrought, basic and semi-finished aluminum and aluminum-alloy products (NAPCS 321) increased 10.4%, the fourth gain in the last five years.

3.4 Sales advanced in multiple other manufacturing industries

There were also notable gains in multiple other manufacturing industries. Sales of chemical products rose 4.7% to \$49.7 billion in 2014. The gains were mainly divided between two sub-industries; resin and synthetic rubber manufacturing and basic chemical manufacturing.

Following three successive years of declining sales, manufacturing sales in the paper industry increased 6.0% to \$25.1 billion, representing the largest dollar gain since 2000.

Sales of plastics and rubber products also increased, up 4.7% to \$25.9 billion on account of higher sales of plastics.

Wood products increased 4.7% to \$25.0 billion, the fourth gain in the last five years. Higher sales at sawmill companies contributed to the majority of the gains. Exports of forestry products and building and packaging materials have increased in each of the last five years.

4 Seven provinces posted gains in 2014

Seven out of 10 provinces posted higher sales in 2014, with the largest manufacturing provinces being the main contributors in terms of dollar value change. Ontario manufacturers were responsible for over half of the national gain in dollar terms as sales in the province rose 6.1% to \$286.9 billion. Sales increased 6.4% in Quebec and 7.6% in Alberta. Sales fell in Nova Scotia, New Brunswick, and Newfoundland and Labrador.

2. Statistics Canada. 2014. "Producer prices at a glance: The rise of pork prices, 2012 to 2014." *The Daily*. <http://www.statcan.gc.ca/daily-quotidien/141008/dq141008b-eng.htm>.

Almost half of manufacturing sales occur in Ontario; however, their share relative to the national level is lower than it was in the early 2000's. In 2000, Ontario was responsible for 53.0% of sales in Canada. This proportion declined throughout the decade and continued to drop during the recession. In 2014, Ontario's share of manufacturing sales was 46.2%. Meanwhile, the share of manufacturing activity increased in Alberta, from 7.9% in 2000 to 12.8% in 2014.

Table 1
Sales by province

Geography	2013	2014	Dollar change	2013 to 2014
	millions of dollars			percent
Newfoundland and Labrador	6,266	6,236	-30	-0.5
Prince Edward Island	1,456	1,608	152	10.4
Nova Scotia	9,482	7,290	-2,191	-23.1
New Brunswick	20,314	18,893	-1,420	-7.0
Quebec	137,280	146,120	8,841	6.4
Ontario	270,515	286,948	16,433	6.1
Manitoba	15,428	15,931	503	3.3
Saskatchewan	15,697	16,444	747	4.8
Alberta	73,793	79,368	5,575	7.6
British Columbia	40,118	42,818	2,700	6.7

Source(s): CANSIM table 304-0014

Transportation equipment, primary metals and food manufacturing were responsible for the advance in Ontario. Transportation equipment rose 8.7% as sales of motor vehicle parts and motor vehicles represented three-quarters of the dollar gains. Sales for these two industries rose 7.4% in total for 2014. Despite the gains in recent years for motor vehicles, both industries remain below pre-recession levels. Sales for iron and steel mills jumped 31.0% and were mainly responsible for the 18.3% growth in the primary metals industry. Higher prices for meat in the food industry contributed to the 4.9% increase in food product manufacturing.

In Quebec, transportation was the main contributor to the growth in provincial sales, mainly due to production of aerospace product and parts, which rose 14.1%. Despite the gains in recent years, aerospace production for the province remains slightly below the high recorded in 2008. Price-related increases for food and higher sales in primary metals also contributed to the provincial growth.

Annual gains in Alberta reflect a 10.8% increase in sales of petroleum and coal products. Despite the decline in petroleum prices and sales during the third and fourth quarters, petroleum refineries posted higher sales in 2014. Manufacturing sales of food products rose 10.1% reflecting higher prices in meat product manufacturing. Chemical manufacturers posted an increase of 5.3%, mainly reflecting an increase in the manufacturing of basic chemicals.

The declines in Nova Scotia and New Brunswick were from lower sales of non durable goods. Exports of refined petroleum product dropped in New Brunswick in 2014.

5 Inventories increase for the fourth consecutive year

Inventories increased for the fourth consecutive year, advancing 4.0% to an average of \$71.2 billion for monthly reported inventories. Inventories for durable industries rose 5.3% to an average of \$43.2 billion while those for non-durable industries increased 2.2% to an average of \$28.0 billion.

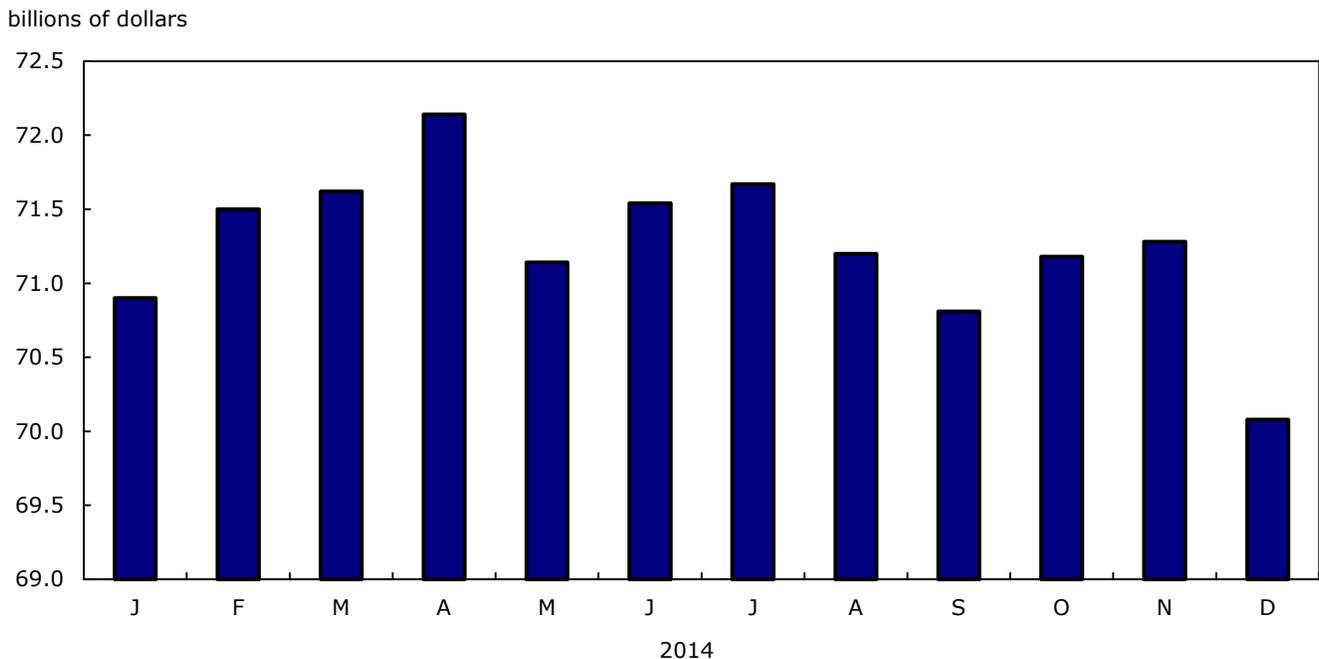
Inventories of transportation equipment goods increased 11.3% to an average of \$12.7 billion, representing almost half of the gains in manufacturing year over year. The growth mainly reflects higher inventories on hand of aerospace products and parts, increasing 13.7% to an average of \$8.1 billion. As the bulk of inventories in the aerospace industry are reported in US dollars, the increase reflects the depreciation of the Canadian dollar in 2014. As the US dollar strengthened relative to the Canadian dollar, the value of inventories of aerospace products and parts increased. Higher inventories of motor vehicles also contributed to the gains in transportation, as manufacturers reported a 18.0% increase to an average of \$1.5 billion. Inventories of motor vehicles advanced from 2011 to 2014, as have sales, reflecting the industry's recovery from the downturn.

Manufacturers in most industries reported higher inventories in 2014. Following the transportation equipment industry, the food, primary metal and wood product industries posted some smaller gains. Part of the advance in food reflects higher prices for animals and animal products, which are used as inputs for the meat processing industry, up 12.6% on average as per the Raw materials price index.

Inventories of petroleum and coal products increased 1.3% in 2014 to an average of \$6.9 billion despite the declines in the price of crude oil and refined petroleum products in the last two quarters.

On a quarterly basis, inventories for the manufacturing sector trended upwards during the first quarter and continued to increase in April. After reaching a peak in April, inventories declined in the third and fourth quarters. Inventories for petroleum and coal manufacturers declined from July onwards, as a result of lower prices in the industry and were mainly responsible for the downward trend in the last two quarters.

Chart 5
Monthly inventory levels in 2014



Source: CANSIM table 304-0014.

5.1 Manufacturers report unprecedented gains in unfilled orders

Unfilled orders for the manufacturing sector represent future sales assuming that orders are not canceled, off-shored or re-valued. Orders increased 24.2% in 2014 reaching an annual average of \$89.1 billion. By the end of 2014, the backlog had reached \$91.8 billion - the highest level since the start of the series in 1992. The increase in unfilled orders during the second half of 2014 partially reflected the appreciation of the US dollar and hence the increase in values for orders for the aerospace industry as measured in Canadian dollars.

Chart 6
Unfilled orders for the manufacturing sector and the US dollar value in Canadian dollars



Sources: CANSIM tables 304-0014 and 176-0064.

The increase in manufacturing orders in February represented an unprecedented dollar gain, up \$12.0 billion to \$90.4 billion and reflected higher orders in the transportation equipment industry.

Unfilled orders climbed each month in the fourth quarter, increasing 1.8% overall. Aerospace product and parts and railroad rolling stock manufacturers received more orders in the quarter. The increase in demand for North American crude oil in recent years has contributed to a rise in orders³ and production of tank railcars along with additional regulations on oil tank cars.⁴ The machinery industry also contributed to fourth quarter gains as orders for the industry reached an annual high in November of \$7.6 billion. The gains in November were related to higher orders in other general-purpose machinery and engine, turbine and power transmission equipment, two industries tied to performance in the oil and gas sector.

3. Hussain, Yadullah. 2013. "Demand for tank cars to ship crude oil by rail rises at breakneck speed", Financial Post.
 4. Hollister, Jeff. 2015. "American Railcar Industries' CEO on Q4 Results", Earnings Call Transcript.

6 Conclusion

Current dollar manufacturing sales reached their highest level to date in 2014. Meanwhile, constant dollar sales remain below pre-recession levels, indicating that part of the post-recession growth reflects higher prices for goods sold. Although most industries posted higher sales, the transportation equipment, food and primary metal industries were mainly responsible for the annual gains, representing approximately two-thirds of the dollar increase in 2014. Prices were partly responsible for higher sales in food and primary metals, while growth in transportation equipment represents a continuing revival for the industry.