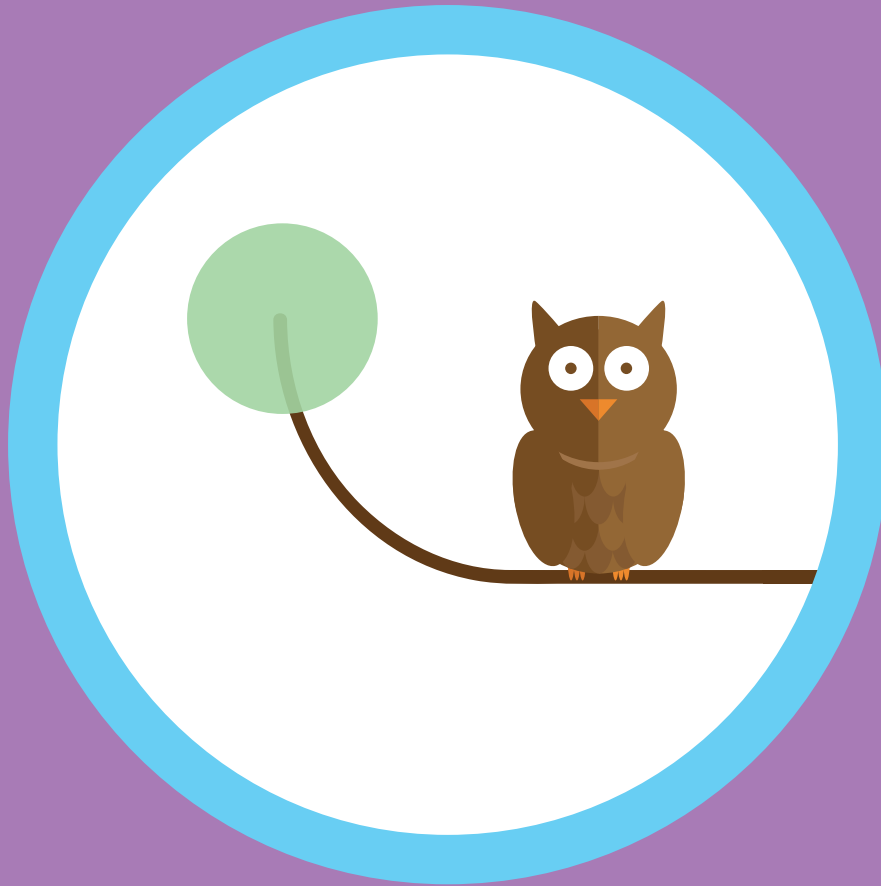


Perch



Made in Alberta:

An overview of Alberta's manufacturing sector

December 2017

ATB Financial®

Why look at manufacturing in Alberta?

Economics and Research, ATB Financial

The manufacturing sector generated about six per cent of Alberta's real GDP last year. That might not seem like a lot, but manufacturing is important for more than just its direct economic output (which, at six per cent, is still larger than most other sectors of the economy including, for example, retail, health care, education, public administration, utilities and finance).

“There are significant opportunities to expand and diversify Alberta's manufacturing sector.”

It's important because manufacturing is a magnet for other economic activity. It becomes something of a chicken and egg situation in an advanced economy like Alberta's in which services, infrastructure, local amenities, natural resources and other variables such as public policy, geography and social norms interact in complex ways, but manufacturing businesses tend to be a base upon which other economic activity is built. Imagine a small town that is home to a single large factory. If the factory closes, the town's corner store might go under. If, on the other hand, the owner of the corner store were to close because the owner retired, the factory would keep operating. Manufacturing is not the only economic magnet available, but it's definitely a key one.



Manufacturing is also important because there are significant opportunities to expand and diversify the sector and, in turn, help ensure Alberta's long-term economic prosperity. The growing global middle class represents billions of potential new customers for our products.

We should, of course, be thoughtful about this.

It's not about returning to a mythical age when “we used to make stuff here.” We need to aim higher than mass producing t-shirts or snapping together smart phones and the low-wage jobs associated with manufacturing of that kind.

“Even though its relative weight in the Alberta economy is less than in every other province except Newfoundland and Labrador, manufacturing in Alberta still generated more real GDP last year than, for example, healthcare, retail trade, public administration, finance, education and agriculture.”

We also have to consider our comparative advantages. Among these is our local supply of natural resources. Several vibrant manufacturing subsectors have been built around Alberta's bounty of oil, natural gas and trees, turning crude oil into gasoline, natural gas into plastic and trees into lumber and paper. The same is true when it comes to agriculture. Our farmers and ranchers provide Alberta's food and beverage manufacturing businesses with a ready supply of high quality inputs that are turned into everything from French fries and pot roasts to pasta and craft beer.

Other advantages we have that we could perhaps make more use of to establish and attract new manufacturing businesses include our highly educated labour force, fantastic quality of life, reliable infrastructure, proximity to US and Asian markets and growing expertise in Artificial Intelligence.

Given the above, this edition of *Perch* takes a bird's eye view of the manufacturing sector in Alberta and pulls together answers to some basic questions: How big is it? Is it growing or shrinking? What kinds of products do we make in Alberta? The answers provide context for understanding the sector and for an informed discussion of how to ensure it remains a source of economic growth and good jobs.

“Manufacturing is a magnet for other economic activity.”

For a more detailed examination of Alberta's manufacturing sector, see the extended report at atb.com/economics

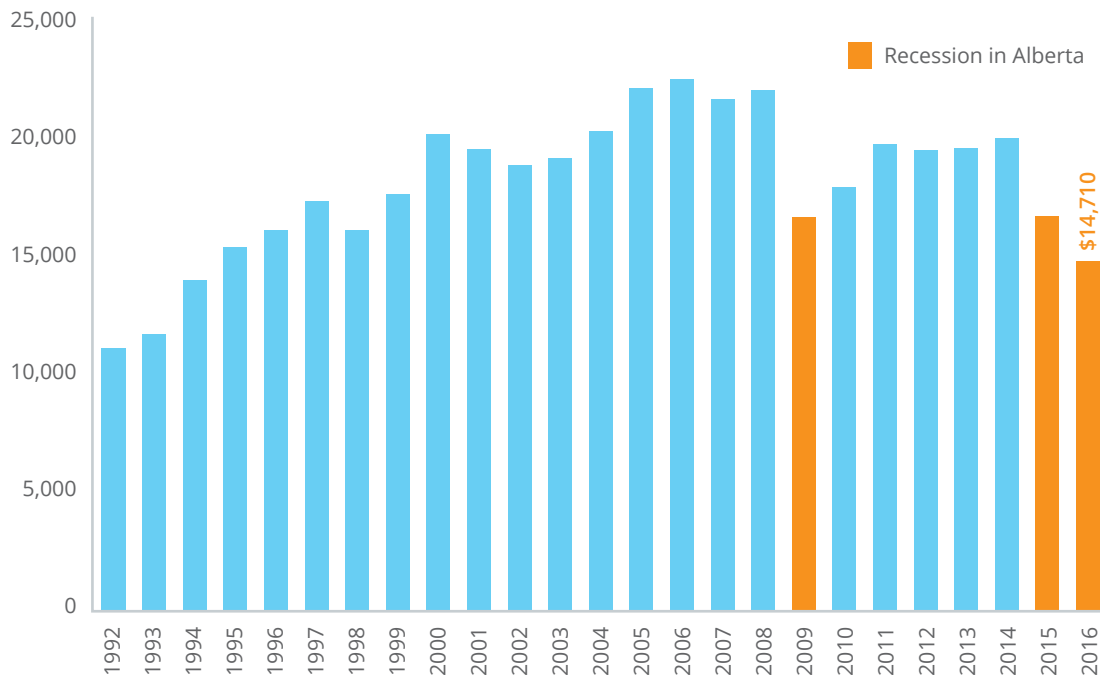


“The growing global middle class represents billions of potential new customers for our products.”

Annual sales

Alberta's manufacturing sector was hit hard by the recession.

Figure 1. Alberta's annual manufacturing sales adjusted for inflation and population growth, 1992-2016 (2016 \$ per Albertan)



Source: Statistics Canada CANSIM table 304-0015 and 015-0001, Bank of Canada and author's calculations

Manufacturing sector sales in Alberta totalled \$62.6 billion in 2016. Sales peaked at \$79.6 billion in 2014 but slipped by 13.9 per cent in 2015 and another 8.6 per cent in 2016 as depressed oil prices reduced the value of refined petroleum products and softened demand for locally made fabricated metals and machinery. While Alberta's manufacturing sales fell between 2014 and 2016, Ontario and BC saw decent growth at 6.0 per cent and 7.0 per cent, respectively.

When we adjust for inflation and population growth (see figure 1), we see that manufacturing sales in Alberta peaked in 2006 at \$22,337 per Albertan.

Relatively strong sales in the mid-2000s in the chemicals (especially petrochemicals), computers and electronics and furniture subsectors account for most of the difference between sales then compared to the years immediately before the recent recession in Alberta.

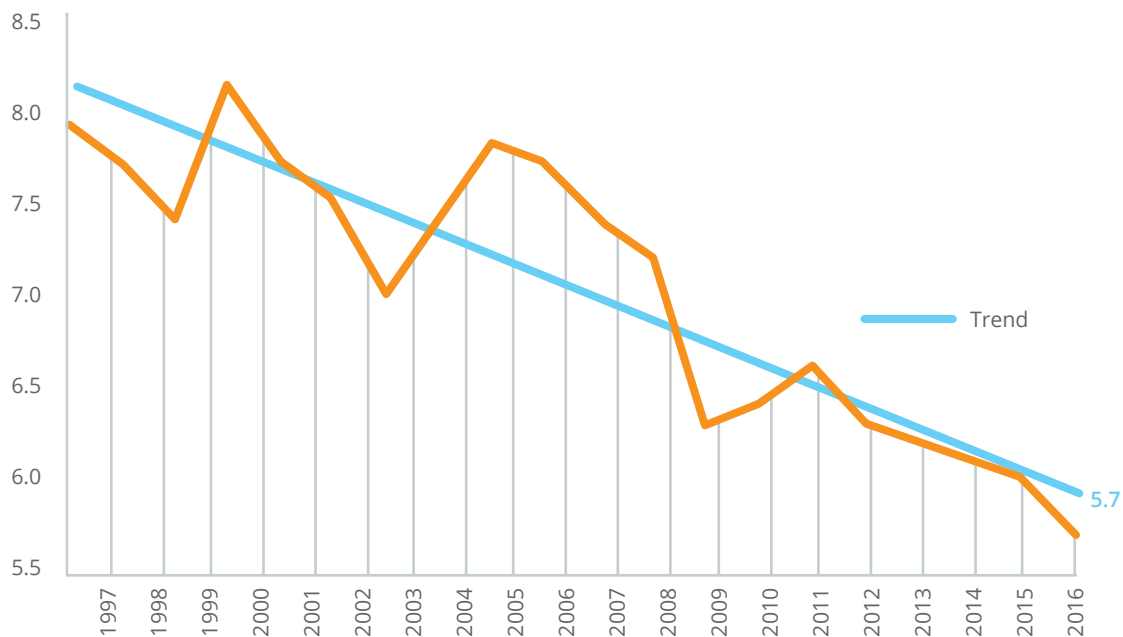
As of 2016, sales were \$14,710 per Albertan. The national per capita figure was \$16,940. Prior to the recession in 2014, Alberta's inflation-adjusted per capita sales in 2014 were higher than the national figure (\$19,830 compared to \$17,818).

“Manufacturing is an important sector of Alberta's economy with sales totaling \$62.6 billion in 2016.”

Share of GDP

Manufacturing has grown in Alberta, but not as fast as other sectors.

Figure 2. Manufacturing's share of Alberta's economy (per cent of real GDP)



Source: Statistics Canada CANSIM table 379-0030

The sale of manufactured products is one way of looking at the sector. Another option is to examine the net value added to the economy by the manufacturing sector -- in other words, its contribution to Alberta's gross domestic product (GDP). When we do this, we find that manufacturing accounted for about 5.7 per cent of Alberta's real GDP in 2016 (see figure 2). This is down from 7.9 per cent in 1997.

The decline in manufacturing's share of Alberta's GDP since the late 1990s is not due to a reduction in the value of its output. Manufacturing generated \$16.5 billion of real GDP in 2016 compared to \$13.6 billion of real GDP in 1997--an increase of 21.7 per cent. Manufacturing is a smaller slice of the provincial

economic pie because of relatively faster growth in other sectors, especially construction, services and agriculture. This trend is also apparent in Canada's traditional manufacturing heartland of Ontario where manufacturing's share of real GDP has fallen from 19.5 per cent in 1997 to 12.7 per cent in 2016.

Between 1997 and 2016, Alberta's total GDP grew by 67.8 per cent compared to manufacturing's 21.7 per cent. The service sector's contribution meanwhile swelled by a whopping 105 per cent. Manufacturing's real output in Alberta peaked in 2014 at \$19 billion but fell during the recession to \$17.9 billion in 2015 and \$16.5 billion in 2016.

“The decline in manufacturing's share of Alberta's GDP since the late 1990s is not due to a reduction in the value of its output.”

(Share of GDP continued...)

Alberta has the third largest manufacturing sector in Canada but its share of the provincial economy is smaller than in most parts of the country.

Figure 3. Real GDP by industry, 2016 (dollars x 1,000,000)

	All industries	Manufacturing	Manufacturing as per cent of total
Newfoundland and Labrador	\$26,184	\$966	3.7%
Prince Edward Island	\$4,786	\$488	10.2%
Nova Scotia	\$32,845	\$2,638	8.0%
New Brunswick	\$26,776	\$2,918	10.9%
Quebec	\$319,012	\$44,586	14.0%
Ontario	\$633,509	\$80,744	12.7%
Manitoba	\$55,912	\$5,459	9.8%
Saskatchewan	\$58,810	\$3,896	6.6%
Alberta	\$288,113	\$16,540	5.7%
British Columbia	\$218,755	\$15,980	7.3%
Yukon	\$2,374	\$25	1.1%
Northwest Territories	\$3,720	\$10	0.3%
Nunavut	\$2,040	\$4	0.2%
Canada	\$1,672,835	\$174,254	10.4%

Source: Statistics Canada, CANSIM table 379-0030

Nationally, manufacturing accounted for 10.4 per cent of Canada's real GDP in 2016 (see figure 3), so Alberta is below the national average in this regard (though it still had the third largest manufacturing sector in absolute terms after Ontario and Quebec). Despite having a larger population (4.8 million versus 4.3 million), BC's manufacturing sector generated less GDP in 2016 than Alberta's (\$16.0 billion compared to \$16.5 billion).

The unique nature of the Alberta economy is apparent when we compare manufacturing to oil and gas extraction. Alberta's mining, quarrying and oil and gas sector (which does not include the manufacturing of petroleum and petrochemical products such as gasoline and plastic) accounted for 27.3 per cent of the province's real GDP in 2016 compared to 6.2 per cent nationally. Manufacturing in Alberta is a vital part of our economy but it's not about to replace oil and gas extraction anytime soon.

“Manufacturing GDP per capita for the globe in 2015 was about \$1,600 compared to \$2,140 in China, \$3,950 in Alberta, \$4,340 in Canada and \$6,800 in the US (all figures in US dollars).”



How big is Alberta's manufacturing sector?

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115,500 employees

10.2% of Canada's manufacturing sales

\$62.6
billion in sales

5.7% of Alberta's economy

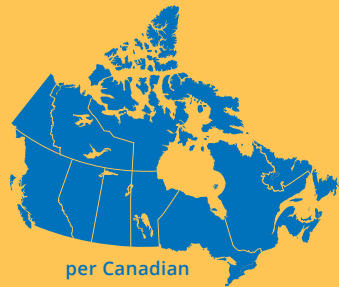
\$16.5
billion in real GDP

6.6% of Canada's manufacturing exports

\$23.4
billion in exports

5.1% of Alberta's workers

Controlling for population size



Sales

\$14,710

\$16,941

15.2%
more than Alberta

\$19,902

35.3%
more than Alberta



Real GDP

\$3,889

\$4,801

23.4%
more than Alberta

\$5,618

44.5%
more than Alberta



Exports

\$5,504

\$9,776

77.6%
more than Alberta

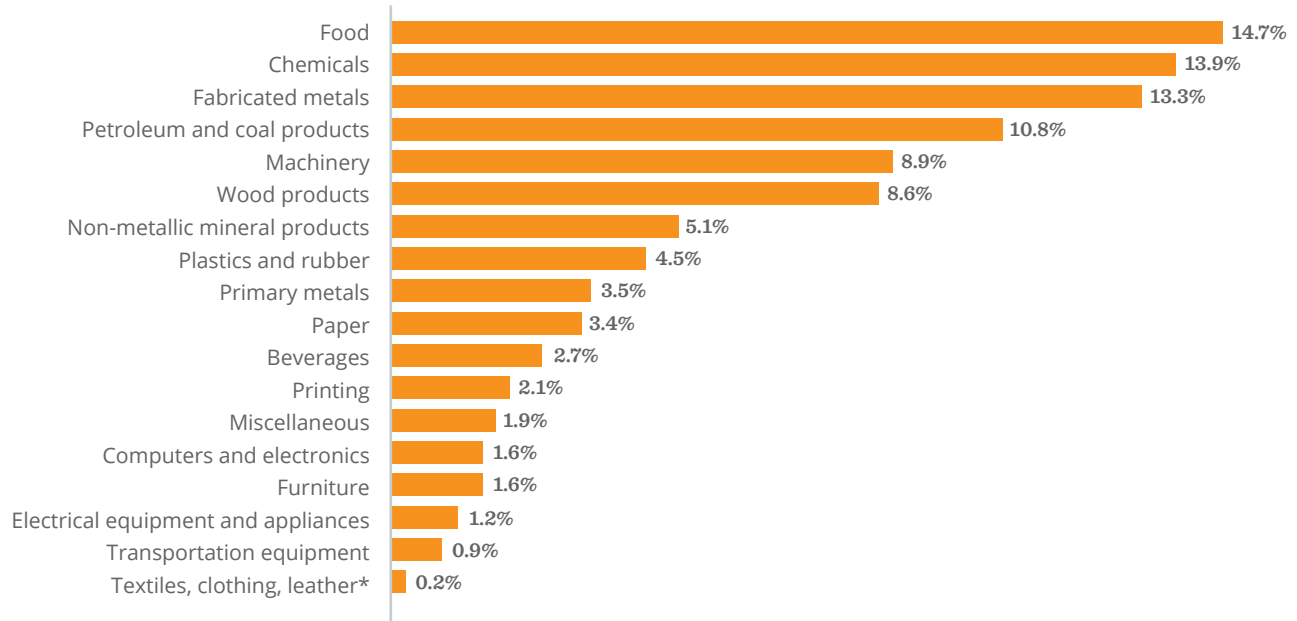
\$12,215

121.9%
more than Alberta

What we make

Most of the products manufactured in Alberta are tied to our natural resources and agricultural sectors.

Figure 4. Manufacturing in Alberta by subsector 2016 (per cent of total real manufacturing GDP, 3-digit NAICS codes)



Source: Statistics Canada, CANSIM table 379-0030 *Combines NAICS codes 313-316. For the chained dollars, the aggregates are not exactly equal to the sum of their components. As a result, the numbers in this chart do not add to exactly 100.

Alberta's manufacturers produce a wide range of products but most of the output is linked to our province's natural and agricultural resources. Food products, products derived from oil and gas and wood are obvious examples. In addition, a large amount of the machinery, fabricated metal products and primary metals made in Alberta can also be linked back to the energy sector. As a result, our manufacturing sector tends to follow the fortunes of the oil and gas patch and is also highly sensitive to agricultural developments in the province (e.g., crop yields, cattle prices, outbreaks of disease, trade disputes).

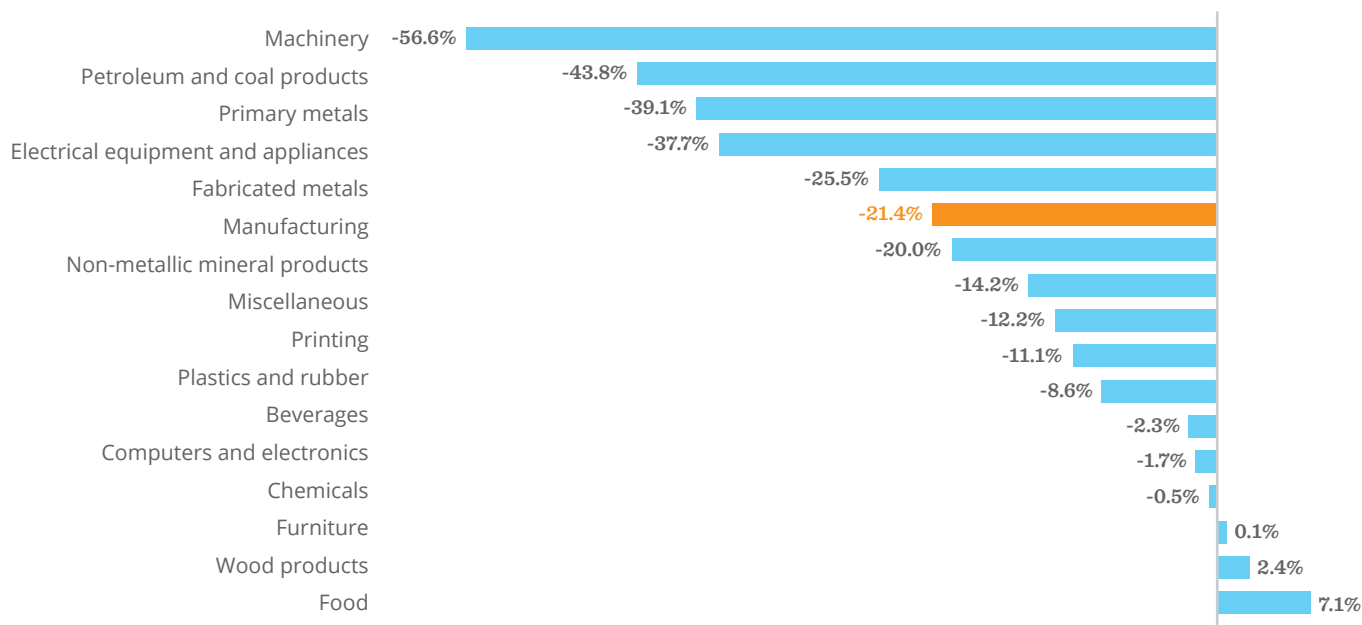
Prior to the recession in 2014, the relative position of the subsectors was different. Machinery was benefiting from strong demand from the oil patch and sat in top spot (17.5 per cent) followed by fabricated metals (16.4 per cent) for the same reason. Food products were still a major category but was in third spot at 11.9 per cent.

“Food products is the largest category of goods manufactured in Alberta at 14.7 per cent of the manufacturing sector’s share of real GDP in 2016.”

Impact of the recession

Alberta's machinery manufacturers saw their sales drop by more than 50 per cent during the recession.

Figure 5. Alberta manufacturing sales by subsector during the recession (per cent change between 2014 and 2016)



Statistics Canada CANSIM table 304-0015. Data are not available for the paper and textiles, clothing and leather subsectors.

Alberta's manufacturing sector contracted during the recession in terms of both sales and the volume of value added production with a 21.4 per cent drop in sales between 2014 and 2016 and a 12.8 per cent in real GDP over the same period (Alberta's total GDP contracted by 7.4 per cent).

The contraction in the manufacturing sector was not, however, spread evenly across its subsectors (see figure 5). Machinery manufacturing was the hardest hit with a drop in sales of 56.6 per cent in two years with real GDP dropping by almost the same percentage (55.9 per cent). Much of this was the result of reduced

demand for machinery used by the oil and gas sector. Much less reliant on the oil patch to fuel demand, Ontario's machinery manufacturing subsector's real GDP increased by 6.0 per cent between 2014 and 2016.

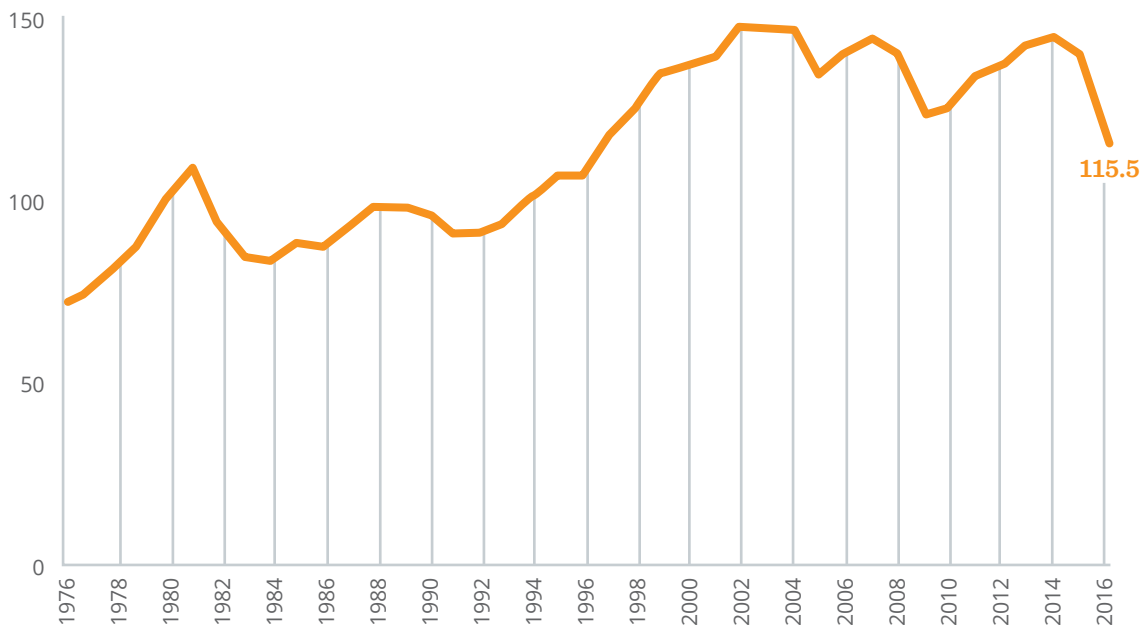
Sales of petroleum and coal products fell by 43.8 per cent while output shrank by just 2.5 per cent between 2014 and 2016. This indicates that it was soft prices that cut deeply into sales rather than a large drop in the volume of production itself.

“Only furniture, wood and food managed to stay on the positive side of the ledger in terms of sales in 2016 compared to sales in 2014 with food products posting a solid 7.1 per cent increase in sales over the recession.”

Employment

Manufacturing jobs account for about five per cent of employment in Alberta.

Figure 6. Number of manufacturing sector employees in Alberta (000s)



Source: Statistics Canada CANSIM table 282-0008

As of 2016, 115,500 Albertans were employed in the manufacturing sector (see figure 6). This represents 5.1 per cent of total employment in the province. Prior to the recession in 2014, there were 144,500 manufacturing sector employees (6.4 per cent of total employment in the province).

In the late 1990s and early 2000s, manufacturing's share of employment was over eight per cent but has been shrinking since then. Notwithstanding the negative effects of the recession on the sector (20.1 per cent of manufacturing jobs were lost between 2014 and 2016), the long-term contraction of the sector's share of total employment has been due more to

growth in the service sector than an absolute decline in the number of manufacturing workers. With that said, we are yet to surpass the 147,600 figure from 2002. We have seen some uptick in the number of manufacturing jobs in 2017 (124,100 as of August) but it remains to be seen how long it will take for the sector to fully recover to pre-recession levels.

Averaged over the last five years (2012-2016), Alberta's manufacturing sector employees accounted for 7.9 per cent of all manufacturing workers in Canada. Ontario had the largest share at 44.1 per cent followed by Quebec with 28.7 per cent.

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