

POLICY PERSPECTIVES



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BC'S MANUFACTURING SECTOR IS GROWING... BUT FACES COMPETITIVENESS CHALLENGES

HIGHLIGHTS

- BC's manufacturing sector is diverse and expanding — except for PEI, BC has seen the strongest growth in manufacturing sales of any province over the past five years.
- BC manufacturing sales receipts surpassed the \$50 billion milestone last year.
- Both the resource-based elements of the sector and non-resource manufacturing have grown.
- In contrast to many other jurisdictions in North America, the number of people employed in manufacturing in BC has increased over the past five years.
- Wood products remains the largest manufacturing industry in the province and the backbone of many regional economies. Paper manufacturing is the third largest manufacturing industry measured by the value of sales.
- Over the past decade, collectively non-resource manufacturing has grown more quickly than resource-based manufacturing such that the value of the former's sales is now larger.
- Although BC has a reasonably positive manufacturing story, there are growing headwinds that are making the province less competitive as a place to invest.

Manufacturing is an important and under-emphasized part of the British Columbia economy. In relative terms, manufacturing in BC is somewhat smaller than in other provinces, but it is also more resilient and diverse. Manufacturing activity, particularly in the resource space, is cyclical, but output in the broad sector continues to trend higher. Over the longer-term, the number of people working in the sector has fallen, a pattern seen in most advanced economies. Having said that, in recent years the number of people employed in BC's manufacturing sector has actually risen.

While there is nothing intrinsically better about producing manufactured goods compared to services or other productive activities, the sector deserves more attention. This is primarily because of the oversized role that manufacturing continues to play in British Columbia's international exports. Manufacturing is also a high productivity industry, which means most segments of the sector pay comparatively high wages. Another important consideration is that, apart from the employment and income generated directly in the different manufacturing sub-industries, manufacturing processes create

demand for the goods and services produced by local firms in other industries, such as transportation services, communications, repair services, business and professional services, and various suppliers of intermediate goods and other business inputs.

A strong case can be made that manufacturing generally makes a disproportionate contribution to the province's prosperity because of its outsized role in the export sector and the related spin-off activity it generates. Although exports of services and other products also provide a valuable source of

external income, few industries have the same “economic footprint” as manufacturing.

What follows is a brief overview of manufacturing in BC. This shows that, contrary to widely-held perceptions, manufacturing is a source of growth. For analytical purposes, BC’s manufacturing sector can be divided into resource-based manufacturing activity and non-resource manufacturing. The former has long been the foundation of BC’s export base and the economic backbone of many communities across the province. The latter also exists across most regions of the province, but is more concentrated in Metro Vancouver and the Fraser Valley. While BC’s manufacturing sector overall has a fairly upbeat story to tell, it faces mounting competitiveness challenges linked to rising local costs, the increased attractiveness of the United States as a location to undertake manufacturing, and growing skill shortages at home. In addition, manufacturing activity linked to the downstream processing of BC resources must contend with Aboriginal claims, increasingly cumbersome and costly permitting processes, and environmental concerns.

The first part of this short paper offers an update and some comparative measures to provide a sense of the size, economic importance and relative performance of BC’s manufacturing sector. The second part turns to the outlook for the sector in light of the shifting competitive environment for manufacturing in the North American context.

**OVERVIEW OF
MANUFACTURING IN BC**

BC’s manufacturing sector reached a milestone in 2017: total manufacturing sales surpassed the \$50 billion mark. In the post-recession era BC’s manufacturing sector has expanded and performed comparatively well. After falling sharply during the great recession, the value of BC’s manufacturing output has climbed steadily since 2009. Manufacturing sales have risen by more than 30% over the past five years, outpacing the recovery in both Ontario and Quebec. In the other provinces, including Newfoundland and Alberta where the oil price collapse had a large impact on the value of refined petroleum products, the value of manufacturing output in 2017 remained below the levels recorded in 2012.

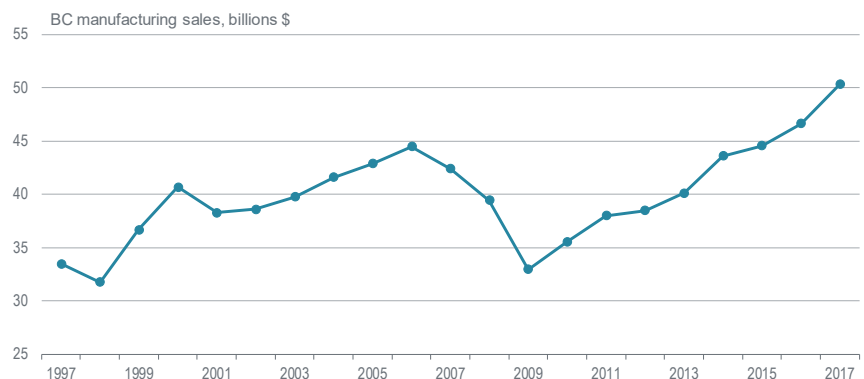
As suggested above, a useful division can be drawn between resource-based manufacturing industries and those that produce non-resource-based goods – e.g., consumer products, transportation equipment, machinery, and computer parts and components. Both segments make significant contributions to the

province’s economy and prosperity. Resource-related manufacturing is important because of its large size, its dominance in the province’s export profile, and the fact that many regional economies depend heavily on the production and sale of resource-based goods.

Industries related to the downstream processing and refining of natural resources remain the largest elements of BC’s manufacturing landscape. Last year, wood product sales (sometimes referred to as shipments) amounted to more than \$11 billion. Pulp and paper products rank third among the province’s manufacturing industries in the value of sales. The production of primary metal is the fourth largest manufacturing sub-industry. Sales of manufactured food items totaled \$8.4 billion in 2017, making food production BC’s second largest manufacturing subsector. Much of this processed food production is consumed locally, but BC’s exports of value-added food products are substantial and growing.

With three of the four largest manufacturing sub-industries built around downstream processing of primary resources, resource-based

FIGURE 1: BC MANUFACTURING SALES SURPASS \$50 BILLION



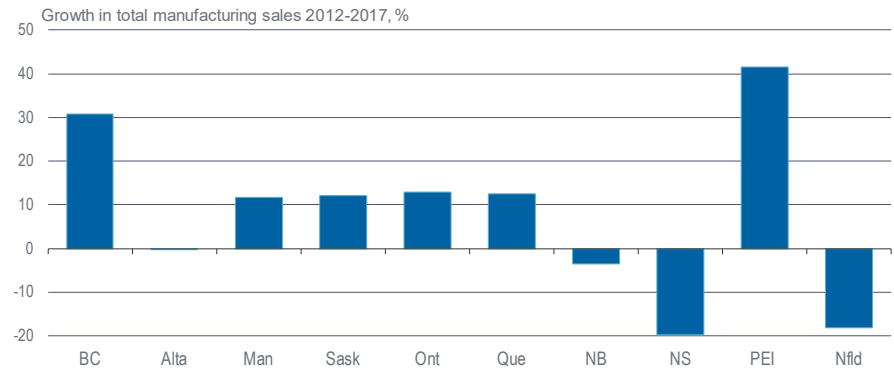
Source: Statistics Canada, CANSIM table 304-0015.

manufacturing is fundamental to the province's economy. The rise in BC manufacturing sales in recent years is in part attributable to the cyclical upswing in commodities: resource-based manufacturing shipments are up 47% since 2012 while non-resource manufacturing sales have advanced by 22% over the same period. However, most parts of non-resource manufacturing have grown over a longer period and are generally subject to less pronounced cyclical swings. In the wake of the 2008-09 global recession, BC's non-resource manufacturing sector held up better than its resource-based counterpart. Back in 2000, non-resource and resource-based manufacturing sales were roughly equivalent. However, because most parts of non-resource manufacturing are not subject to the same price fluctuations, it has grown to be substantially larger than its resource-based counterpart. Today in BC, non-resource manufacturing products account for three-fifths of the province's \$50 billion in manufacturing sales.

MANUFACTURING GDP

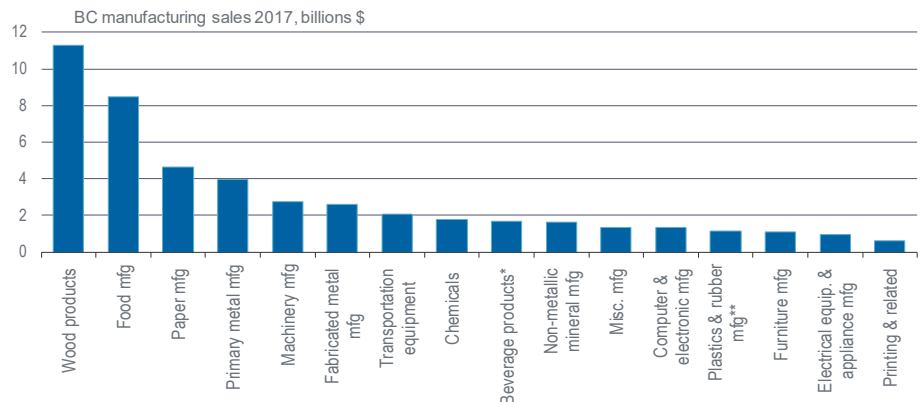
Gross domestic product, or GDP as it is commonly referred to, measures the value added of different industries and provides a good basis for examining the relative size of the industry. BC's manufacturing sector directly accounts for 7.3% of the province's GDP. As detailed above, manufacturing sales have risen over time, so by extension GDP or the sector's value added has also increased. However, the proportion of total economic activity (GDP) that manufacturing represents has dwindled because other parts of the provincial economy have expanded

FIGURE 2: GROWTH OF MANUFACTURING SALES ACROSS CANADA



Source: Statistics Canada, CANSIM table 304-0015.

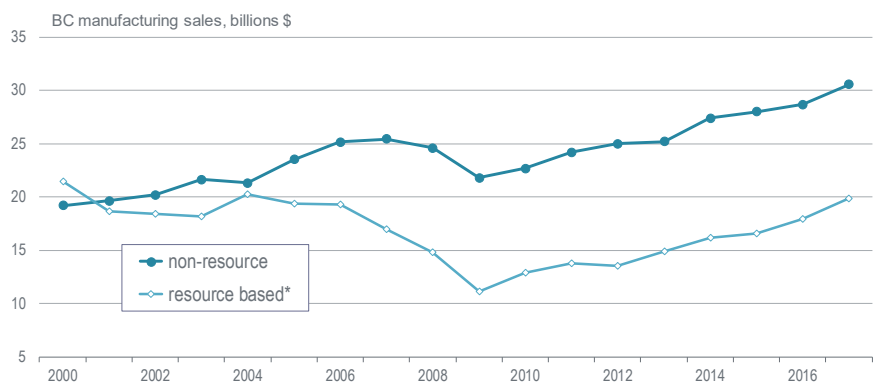
FIGURE 3: WOOD PRODUCTS, FOOD AND PAPER LEAD IN MANUFACTURING SALES



Source: Statistics Canada, CANSIM table 304-0015.

*2016 data **2015 data

FIGURE 4: NON-RESOURCE MANUFACTURING NOT AS CYCLICAL



*includes wood mfg, pulp & paper, and primary metal mfg.

Source: Statistics Canada, CANSIM table 304-0015.

faster and some new industries have emerged. A decade ago, manufacturing directly accounted for nearly 9% of the province's GDP.

In terms of its direct economic footprint, manufacturing in BC is smaller than in some other provinces. In Ontario, manufacturing directly represents almost 13% of GDP. In Quebec the figure stands at roughly 14%. While manufacturing in BC makes up a smaller share of the economy, it has proven to be a resilient sector as its share of GDP has not slipped as much as in other provinces. There are many factors that influence the dynamics of the sector's contribution to GDP, including how fast other industries grow, diversity in manufacturing and the pace of sales and output growth. Overall, manufacturing in BC has held up quite well.

MANUFACTURING JOBS

The number of people working in manufacturing in both Canada and the US has declined markedly over the past 20-25 years. Contrary to President Trump's frequent Twitter pronouncements, these decreases mostly reflect automation, technological advances and improved production processes, as well as consolidation within the sector, not the offshoring of jobs. In BC, similar competitive pressures and technological developments have prompted companies to invest in capital equipment to automate production, which is the main reason employment levels in the province's manufacturing sector have fallen since 1990.

As with GDP, BC is in the middle of the provincial pack in terms of the proportion of jobs that

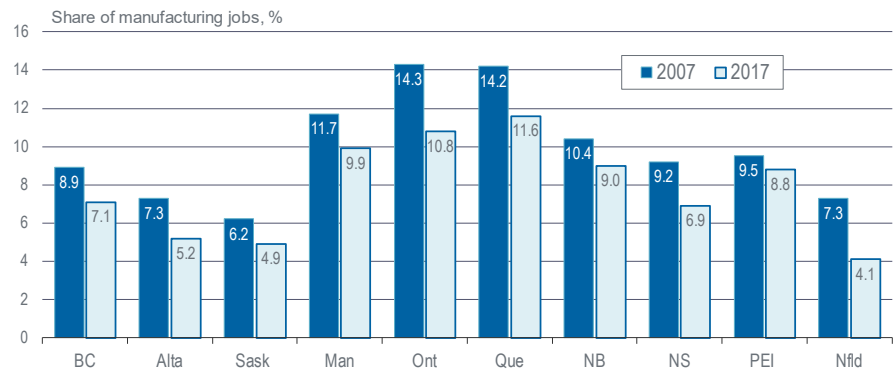
manufacturing supplies. Today in BC, just over 7% of all jobs are in manufacturing. Unsurprisingly, the figures are higher in Ontario (10.8%) and Quebec (11.9%).

Mirroring broader North American trends, the number of people employed in manufacturing in BC has decreased over the past decade, with the 2008-09 recession resulting in a particularly sharp drop in jobs. But unlike the picture in other provinces, in BC the number of people working in manufacturing has increased in the last half-decade, from 152,000 in 2013 to 174,000 in 2017. In both

Quebec and Ontario, the downtrend in manufacturing employment evident since the early 2000s continued over the past few years. Since 2013, Alberta has recorded a big drop (13%) in manufacturing employment. BC stands out among the provinces due to the number of people working in manufacturing having increased in recent years.

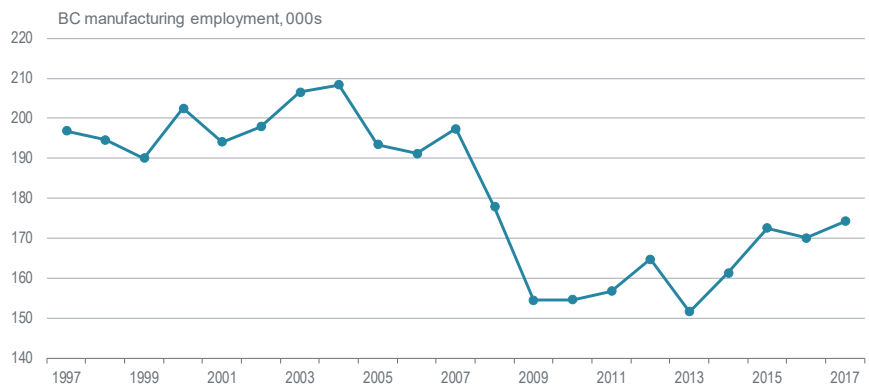
Although BC has enjoyed a rise in overall manufacturing employment, there are substantial differences among the sub-industries that make up the broader sector. Industry consolidation and firm-level

FIGURE 5: MANUFACTURING EMPLOYMENT ACCOUNTS FOR SMALLER SHARE OF JOBS IN ALL PROVINCES



Source: Statistics Canada, Labour Force Survey.

FIGURE 6: NUMBER OF PEOPLE WORKING IN MANUFACTURING HAS INCREASED RECENTLY



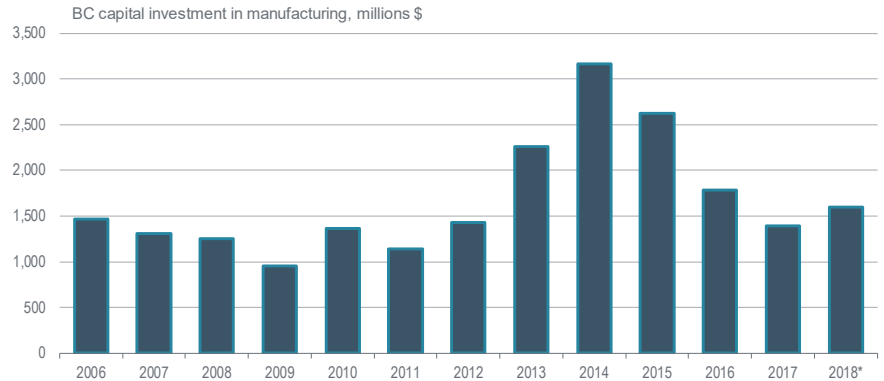
Source: Statistics Canada, Labour Force Survey.

automation are shaping much of BC's manufacturing industry, as is the case in jurisdictions across North America. Among the 20 individual manufacturing sub-industries in BC, ten have seen employment levels fall over the past five years, three have posted modest employment gains, and seven have seen healthy to strong job growth. Much of the aggregate increase in employment since 2013 can be traced to gains in furniture manufacturing, electrical and equipment and appliance manufacturing, and beverage manufacturing.

INVESTMENT

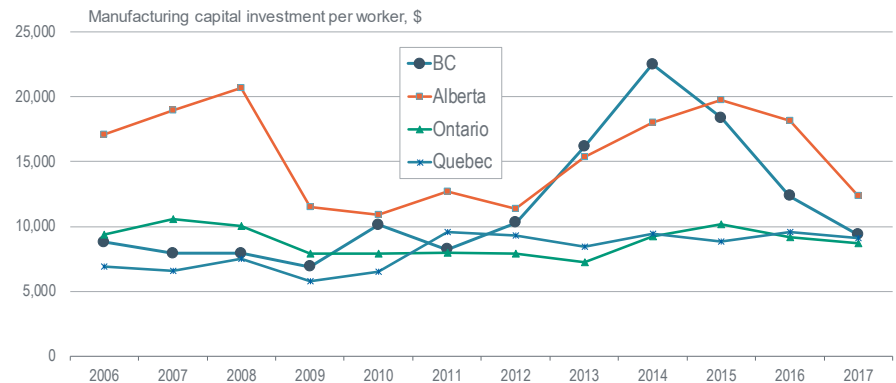
Investment is essential for manufacturers to expand, boost productivity, and compete in global markets. Manufacturing is a high productivity sector, which reflects the fact that production processes tend to be capital intensive and often highly automated. If companies don't invest in new capital equipment and processes, they become uncompetitive. There is a perception that investing in automation and other labour saving technologies results in job losses. The reality, however, is more complicated. In the short term, new machinery and equipment can result in a need for fewer workers. But, looking at the longer-term and recognizing that manufacturers face intense competitive pressure, failing to invest in new equipment, technologies and processes guarantees that manufacturers will become less competitive over time, lose market share and even go out of business. In other words, over the longer-term insufficient investment is the single greatest threat to manufacturing jobs.

FIGURE 7: CAPITAL SPENDING BOOSTED BY ALUMINUM SMELTER PROJECT



* planned investment
Source: Statistics Canada, CANSIM table O29-0045, includes structures and machinery & equipment.

FIGURE 8: MANUFACTURING CAPITAL INVESTMENT SIMILAR TO ONTARIO AND QUEBEC ON PER WORKER BASIS



Source: Statistics Canada, CANSIM tables O29-0045 and 281-0024 (number of employees from Survey of Employment, Payroll and Hours used to calculate investment per worker).

Capital investment in manufacturing is a mixed picture in BC. Generally, BC struggles with chronic levels of underinvestment, particularly in productivity-enhancing machinery and equipment and advanced process technologies. Over the past decade, measured on a per worker basis, spending on tangible capital (not including intellectual property) in the BC manufacturing sector has been broadly in line with levels observed in Ontario and Quebec.

BC does consistently fall short of Alberta, but capital spending in that province is inflated by high levels of investment in the capital-intensive processing and refining of petroleum products and other manufacturing activities linked to the oil patch.

Figure 7 plots capital investment in BC's manufacturing sector. The most notable feature of the investment profile is the large increase in capital spending from 2013 to 2015. This surge is mainly attributable to Rio

Tinto's \$4.8 billion upgrade and expansion of its Kitimat aluminum smelter facility. The new facility employs fewer workers, but without the investment and upgrade the old smelter would likely have been shut down.

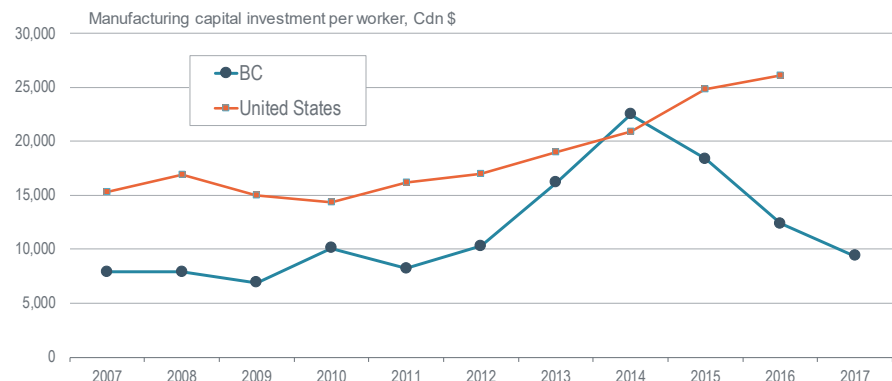
Examining investment on a per worker basis shows that, apart from the Rio Tinto related surge, capital investment in BC's manufacturing sector is broadly in line with that in both Quebec and Ontario. However, Canada badly trails the US on this measure.

COMPETITIVENESS

Canada and BC face growing competitiveness challenges. Investment tracking data suggest that BC is still a reasonably appealing location to deploy capital compared to some other jurisdictions in Canada. This is a relatively low benchmark, however, given that Canada and the other large provinces have comparatively low levels of manufacturing capital investment on a per employee basis and have been losing ground to the US and some other jurisdictions in attracting manufacturing-related investment. Studies by the C.D. Howe Institute document Canada's weak investment performance. Specifically, they show that non-residential investment per worker in Canada across all industries is just 67% of the OECD average and less than 60% of the comparable US figure.¹

Looking at capital investment per worker in BC's manufacturing sector reveals a similarly alarming gap relative to the US. Since 2007, BC manufacturers have typically invested around 50-60% of what

FIGURE 9: BC MANUFACTURING INVESTMENT LOWER THAN US



Source: Statistics Canada, CANSIM tables 029-0045 and 281-0024 (Survey of Employment, Payroll and Hours used to calculate investment per worker) and US Census Bureau, Annual Capital Expenditures Survey and Bureau of Labour Statistics for number of US manufacturing employees. US investment converted to Canadian dollars using average market exchange rates for each year.

US manufacturing firms do. The exception is the 2013 to 2015 period, which saw the construction of Rio Tinto's aluminum smelter. At the peak of construction, per worker investment in BC manufacturing was slightly above US levels. This provides an interesting perspective into the magnitude of BC's longer-term capital formation challenge – a mega project representing a nearly \$5 billion investment over a three or four year period still leaves investment spending per worker below US levels, apart from a single year at the peak of the project's construction.

Turning back to the broader Canadian context, Deloitte's 2016 Global Manufacturing Competitiveness Index paints an unflattering picture of Canada's investment climate for manufacturers. According to the study, in 2016 Canada ranked 9th among 40 countries in manufacturing competitiveness. China ranked 1st and the US 2nd. Mexico is 8th on the list. The Deloitte index takes into consideration a broad array of factors

bearing on competitiveness, ranging from talent and overall costs to infrastructure, taxation, energy policy, legal and regulatory systems and healthcare. According to the analysis, the top three factors affecting manufacturing competitiveness are talent, cost competitiveness and workforce productivity.

It should be noted that the second place ranking for the US was determined prior to the Trump administration's tax cuts and full expensing of most capital investment adopted as part of the recently enacted comprehensive overhaul of US business tax policy. These US reforms will drive a further wedge between the cost structure for manufacturing operations in Canada versus the US and shift future investment in the sector toward American locations.

Looking at some of the factors shaping the competitive environment for business in BC, the province has become less competitive in the last five years. Recent changes that are negative for BC's manufacturing

¹ William B.P. Robson and Aaron Jacobs and Benjamin Dachis, "Equipment Failure: Feeble Business Investment Costs Canadians their Competitive Edge," CD Howe Institute, March 24, 2017.

sector include:

- The return to the Provincial Sales Tax (PST) system in 2013, following the elimination of the HST. The restoration of the PST led to a multi-billion dollar jump in capital and operating costs for BC businesses, including those in the manufacturing sector.²
- A two point increase in BC's corporate income tax rate since 2013.
- A rising carbon tax - BC is home to the highest carbon price in North America, which is particularly disadvantageous to energy intensive exporters because competitors in other jurisdictions do not face the same added cost.
- A new payroll tax - the BC Employers Health Tax. Once fully implemented, the EHT will see employers paying a tax of roughly 2% on their total payrolls. Although the EHT is intended to replace Medical Services Plan premiums, it represents a significant cost increase for most manufacturing operations in the province.
- Environmental review and permitting processes in BC and Canada have become more cumbersome and costly for businesses in the sectors affected, including some manufacturing industries.
- Personal income tax rates have risen for higher-income earners, including skilled managerial, technical and professional employees, making Canada in general as well as BC less competitive for the mobile talent needed to run and grow a successful manufacturing business.

In short, while the US (our main competitor) has moved to reduce costs and improve competitiveness for both manufacturing and other

industries, in BC we have been moving in the opposite direction.

SUMMARY AND CONCLUDING THOUGHTS

This short review of BC's manufacturing sector confirms that the sector makes important contributions to the provincial economy, especially when it comes to exports. Contrary to widely-held perceptions, manufacturing in BC is not in decline. Both resource-based and non-resource manufacturing experienced downturns during the 2008-09 recession, but both have more than regained the lost ground, although the latter has grown more quickly than the former. Recent job growth in BC manufacturing, although mixed, is also generally positive.

Manufacturing's ongoing growth and the fact that non-resource manufacturing is now larger than its resource-based counterpart is something that BC policy makers should take note of. There are opportunities to expand and scale manufacturing operations in the province, especially for medium-sized firms looking to export more in foreign markets. In the Canadian context, investment spending in BC manufacturing is higher than some may have anticipated. However, when measured on a per employee basis and contrasted against the US, the levels of manufacturing investment in Canada and BC are less impressive.

A key challenge for BC's manufacturing sector is the difficult competitive backdrop. Both federal and provincial policies are making it more costly and cumbersome to

operate a business in BC, especially in export-oriented industries. While the above review suggests that manufacturing in BC has done reasonably well in the post recession era, this is backward-looking. Manufacturing in BC, especially in resource-related industries, faces significant headwinds in what has become a more competitive world. If policy makers are looking to grow BC's economy and nurture more high-paying jobs, a closer look at the manufacturing sector and the competitive challenges it is grappling with is warranted. As a starting point, we believe policy makers should focus squarely on capital investment. In this regard, the overall investment climate is important, but steps that specifically focus on attracting capital into the manufacturing sector should be examined. Without sustained investment, manufacturing in BC will shrink and jobs will be lost.

FEEDBACK

We would like to hear from manufacturing owners, executives and operators about the challenges and opportunities within your sector. We hope to hear from a broad range of manufacturers across the province about the top three or four issues weighing on competitiveness as well as the medium-term outlook for your sector.

Please send any comments to info@bccbc.com with the subject line **Manufacturing Feedback**.

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² Machinery and equipment used in manufacturing processes is exempt from PST, but the sales tax still applies to other business inputs.