PERSPECTIVE

Metal Product Fabrication: Investing in the Future

From beams to bolts, including high-performance coatings, the list of metal products made in Quebec is almost endless—this is a diversified area of activity across Quebec's territory. While employment and GDP in this industry have made swift advances in recent years, the industry is facing many human and technological challenges, which involve changing the way it does business. Investment is key if we want to avoid being ejected from value chains due to inefficiencies and lagging productivity. Companies are looking to embark on an ambitious but essential program if Quebec's metal product manufacturing industry does not want to end up between a hammer and an anvil.

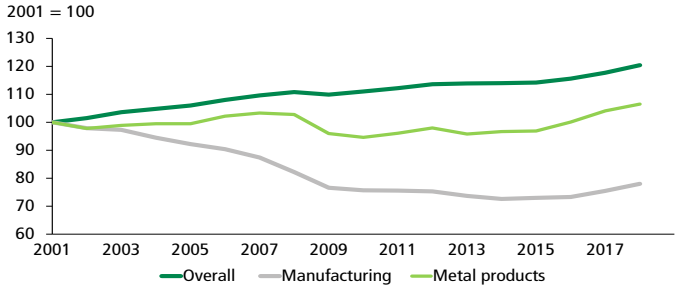
Employment: Going Against Manufacturing's Current

Before we discuss jobs, here is an overview of this highly-diversified industry. Statistics Canada classifies this area into nine categories (not including aluminum production), i.e., forging and stamping, cutlery and hand tool manufacturing, architectural and structural metal manufacturing, boiler and hardware manufacturing, spring and wire product manufacturing, machine shops, coatings, and the manufacturing of a range of other products like metal valves, ball bearings, etc.[1] This industry in some ways serves as the link between the raw materials and the finished products; the metal beams that are manufactured to build homes and hold up bridges offer fine examples of this.

Unlike the overall trend in Quebec's manufacturing industry, job growth at metal product manufacturers has been especially lively since 2014. The number of salaried workers in Quebec's industry reached almost 44,700 in 2018, or about 10% across manufacturing, which interestingly, is higher than before the 2008–2009 recession.

While the number of salaried workers in Quebec's manufacturing sector declined by about 22.0% between 2001 and 2018 (estimated for 2018), metal product fabrication in Quebec is up 6.5% (graph 1). This may be worth cheering about, but it still falls quite short of Quebec's overall salaried job growth for the same period, at about 20.0%. On the flip side, job growth in the services sector exploded.

GRAPH 1
The trend for salaried employment in metal product fabrication is besting manufacturing



Sources: Statistics Canada and Desjardins, Economic Studies

Which sectors have the most employees? Three sectors dominate: the manufacturing of architectural and structural metals tops this list with about 17,500 salaried workers, or about 40% of all employees in metal product fabrication, followed by machine shops with 9,500 workers (between 21% and 22% of workers), with 6,300 workers manufacturing other metal products (between 14% and 15%). In fact, these are the only three sub-groups that had positive job growth from 2001 to 2017 (last full year), and they represent 75% of all workers in

[1] Statistics Canada: "This subsector comprises establishments primarily engaged in forging, stamping, forming, turning and joining processes to produce ferrous and non-ferrous metal products, such as cutlery and hand tools, architectural and structural metal products, boilers, tanks and shipping containers, hardware, spring and wire products, turned products, and bolts, nuts and screws."

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this industry. The multiple infrastructure projects (road repairs and extensions, replacing bridges, culverts and overpasses, renovating schools and healthcare institutions) and bustling residential and non-residential construction in recent years has been a boon for companies that build architectural products and steel structures. In the last few years, the booming economy in the United States, Canada and Quebec has certainly helped boost demand for metal products.

Almost 2,000 Businesses

In June 2018, Statistics Canada estimated at 1,888 the number of companies operating in Quebec's metal product manufacturing industry. Machine shops led the way with 651 businesses, or 34.5%, sprinkled across Quebec. Architectural and metal structure manufacturing came in second with 577 businesses, or 30.6%, followed by the other products category in third place with 300 businesses, or 15.9%.

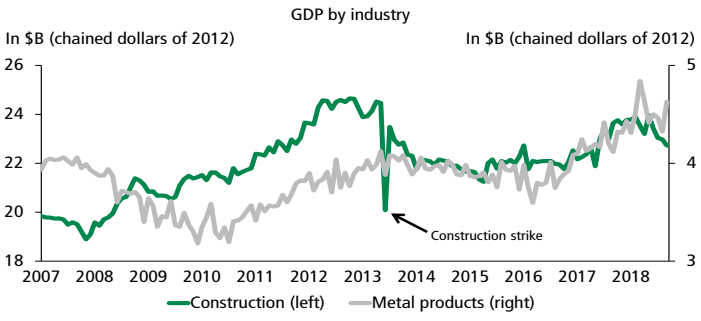
As is the case in Quebec's overall economy, SMEs rule. As such, about half of all companies, or 47.4%, have fewer than 10 employees, while 68.1% of them have fewer than 20 employees and 88.3% have fewer than 50.

That 95.3% of the businesses in this industry have between 1 and 99 staff members is worth noting, since this reaches 98.0% in Quebec's economy as a whole. The 85 metal product makers in Quebec's industry employ between 100 and 499 workers. Manufacturers of architectural products and metal structures, with 40 out of 85 companies and between 100 and 499 employees, account for the bulk of companies. Lastly, only four companies have more than 500 workers, all sectors combined.

When Construction Rolls…

Earlier, we touched on the link between infrastructure projects and job growth within the industry. Comparing GDP growth in metal product fabrication versus GDP growth in construction yields interesting results. Graph 2 shows just how in sync both industries evolve. Overall, both industries seemed to trend in a similar pattern, especially between 2010 and the beginning of 2018.

GRAPH 2
GDP in construction and metal product manufacturing evolved in step between 2010 and 2017



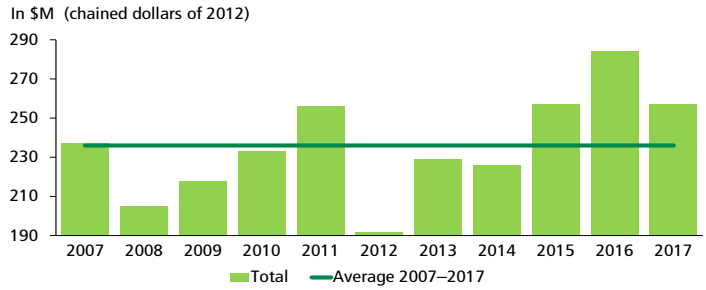
Sources: Institut de la statistique du Québec and Desjardins, Economic Studies

This graph also shows that metal product fabrication quickly jumped from 2016 to 2018. Construction made gains as well, but over a shorter period of time, that is, from spring 2017 to spring 2018. This suggests that other areas of the economy are tied to the health of Quebec's metal product industry. We will address this further in the analysis.

The Industry Has to Keep Up

The industry that churns out metal products cannot sidestep the changes brought about by new technologies. It must adapt. Changing manufacturing processes, innovative alloys, and changes in how we communicate with suppliers and clients all require investments to stay current. Graph 3 shows the growth in investments made in the last 10 years. The annual average between 2007 and 2017 (the last year for which data is available), was $236M in constant dollars. We can see that investment collapsed in 2012, after efforts to recover from the recession. Investment rebounded thereafter, only to be scaled back in 2017.

GRAPH 3
Investments have poured into metal product manufacturing since 2015



Sources: Statistics Canada and Desjardins, Economic Studies

The purchase of machine and material represents the biggest chunk of any expense. The progress made since the turn of the century is quite clear, even if the pathway was punctuated by highs and lows. An advance was recorded from 2013 to 2017, however. These investments may have been considered unavoidable, for a host of reasons. Increased automation to improve precision in cutting metals, or to offset labour shortages or to enhance the versatility of products and production methods are just a few reasons.

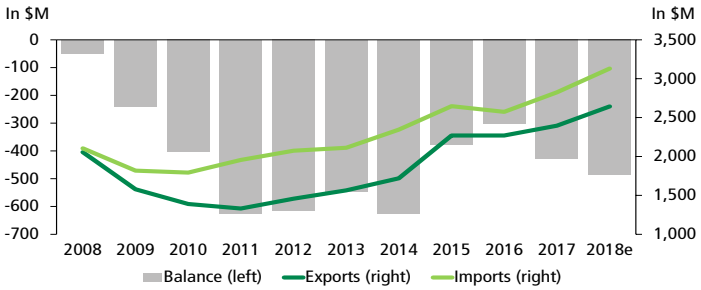
The development of new materials and innovative manufacturing processes, 3D printing for example, offer many reasons to purchase equipment. Purchasing machinery and equipment can also help entrepreneurs get contracts they would have otherwise lost. Such purchases can also be used as underlying conditions to become or stay on as a subcontractor, or to make sure suppliers

are on the same technological level as the client. Lastly, updating production methods prevents companies from becoming the weak link in the value chain.

Much Is Being Traded, but Deficits Remain

Quebec may import and export metal products, but it's on the losing end of this exchange. Graph 4 shows that between 2008 and 2018 (estimate for 2018), the value of imports exceeds that of exports. Quebec's industry purchased about $3.1B in foreign goods in 2018 while it sold about $2.6B worth. While Quebec's exports were up in 2018, imports rose much faster, further widening the trade balance.

GRAPH 4
Quebec's metal product trade: more imports than exports



e: estimate
Sources: Statistics Canada and Desjardins, Economic Studies

It's no surprise that the United States is where most of Quebec's exports end up; more than 75% of Quebec exports in the last three years have gone south of the border. The trade balance with the U.S. tilts in favour of Quebec producers. But Quebec's trade balance with the rest of the world is in the red when it comes to metal products.

With which countries is Quebec's trade balance negative? China tops this list, far ahead of Taiwan, Italy, Spain and Germany. Quebec's trade deficit with China was somewhere between $600M and $700M in the last three years. Manufactured cutlery and hand tools was the top category of imported items. From Taiwan, we purchase turned products, nuts and bolts and hardware items, mostly small and conventional items. However, this does not exclude imports of customized products.

The Long Road Ahead

Helping this industry grow and prosper is no small task. On one hand, we have to be able to align with the industries that are already active here to take full advantage of their current momentum. Metal products are often the primary input for a number of other industries, such as construction. On the other, the client base has to be diversified, which often means prospecting for export markets.

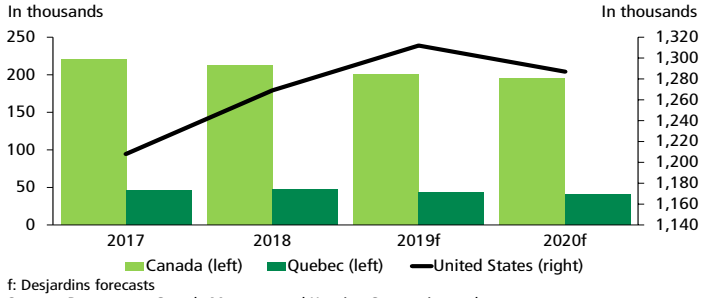
A KPMG study published in November 2017 for Quebec's Ministère de l'Économie, de la Science et de l'Innovation (MESI) presented some observations about the industry, the first being that despite the growth seen since 2010, the pace of productivity growth in the industry is lower than in Canada. From 2010 to 2016 however, investments in this sector advanced at a faster pace than in the rest of the manufacturing industry. The study did advance the following: The modest growth of this industry can be attributed to the difficulty in accessing export markets.

While trade missions are organized to prospect for business in foreign markets and identify outlets, marketing is still a difficult step in the process that requires time, budgets and know-how, something not all companies have at their disposal. And despite how difficult it is to break into export markets, some Quebec brands have managed to stake their claim abroad, with some having built plants in foreign markets. That said, the KPMG study highlighted that Quebec's industry does not have to fend for itself. Quebec has two niches of expertise: one in Montérégie, the other in Lanaudière. Workforce training and development is being tracked by two labour force committees, and lastly, Quebec has two organizations dedicated to research in the metal processing field: the Quebec Metallurgy Center and the Consortium de recherche et d'innovation en transformation métallique (CRITM).

Most of Quebec's companies in this industry do the bulk of their business in North America, in close alignment with the following: residential and non-residential construction, transportation (especially air and automobile) and equipment, including the mining industry. Manufacturing is also a major client. The outlook for these activities is mixed.

The pace of residential construction in Quebec and Canada is set to slow in 2019, whereas it will continue to climb in the United States (graph 5). Housing starts will dip somewhat in 2020, on both sides of the border. As far as infrastructure projects are concerned, the Québec Infrastructure Plan (QIP) expects investments of about $100B between 2018–2019 and

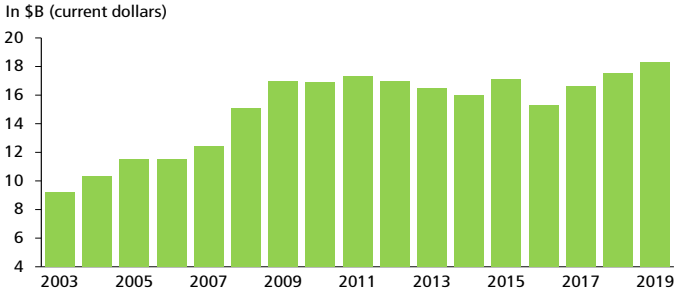
GRAPH 5
Housing starts in North America are expected to wane, especially as of 2020



f: Desjardins forecasts
Sources: Datastream, Canada Mortgage and Housing Corporation and Desjardins, Economic Studies

2027–2028. A massive investment of close to $18.3B is expected in 2019 (graph 6).

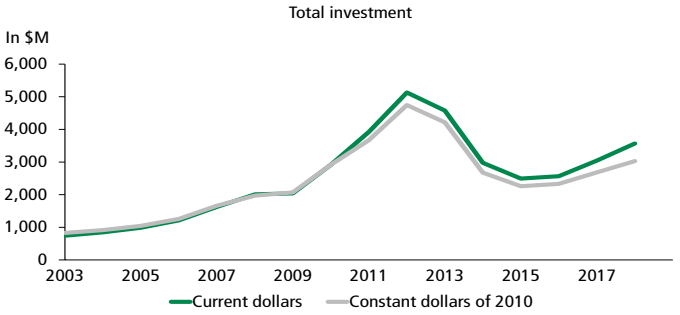
GRAPH 6
Government investment* in Quebec set to rise in 2019



* Includes investments from provincial, federal and local administrations.
Sources: Ministère des Finances du Québec and Desjardins, Economic Studies

Quebec's investments in the mining sector started to climb again in 2016. While the intentions for this year are not yet known, this is one industry that works over the longer term. Activities have firmed up in recent years, despite the fact that prices have failed to peak. The outlook for metal prices in 2019 is not particularly shiny: no major prices increases or decreases are expected, which does not point to any sharp movement in mining activity, based on the information available this early in the year (graph 7).

GRAPH 7
Mining investments in Quebec are climbing again



Sources: Institut de la statistique du Québec and Desjardins, Economic Studies

As far as transportation is concerned, the trends are not moving in sync. The outlook for aviation is quite positive. The automobile industry, for its part, is subject to the vagaries of trade negotiations, the gradual shift in production to the south and changes in production methods. These changes entail the substitution of metals by other lighter and more versatile materials.

Practice Makes Perfect

The industry is facing a labour shortage. Despite its 45,000 current employees, this industry is not very well known. Much like in other industries, the most experienced workers are heading for retirement. If some tasks are simple to do, others require specific skills. Skills can't be tweaked to operate complex machinery on the fly. The labour shortage—or scarcity—is an obstacle to growth for plants and machine shops. The same applies to equipment purchases and expansion projects that end up being held back due to a lack of workers to ensure that operations run smoothly. This is just one of the challenges this industry is facing; other factors remain when discussing the dynamics of metal manufacturers.

Since more than 75% of international exports end up in the United States, we have to keep a close eye on Canada's currency. Few changes are expected in 2019 and in early 2020: the loonie should remain below US$0.80. At the same time, we may consider that the free flow of trade would be improved if the tariffs on steel and aluminium in effect since May 2018 were abolished. The outcome of that battle is not likely to be settled in the next few weeks. Similarly, it does not look like the provisions surrounding government purchases by U.S. authorities or public contracts will be eased at a time when protectionism is the new watchword. In this environment, the thrust to diversify our export markets is more relevant than ever.

On a more technical level, the requirements are getting stricter. New alloys, hybrid materials and emerging technologies require adjustments, and new technologies mean more workforce training and investments. High precision in cutting or bending metals, for example, is no longer a luxury, it's become standard. Reducing waste and rejects to the bare minimum are other requirements the industry must contend with. Improving energy efficiency and reducing the environmental footprint of their operations are also on the agenda.

Many questions remain. For example, in the era of digital technologies and 3D printers, what will happen to the development of prototypes, or prototyping—the cornerstone of many machine shops. Are prototypes about to become a thing of the past?

In this industry as it is elsewhere in the manufacturing sphere, improving productivity is a must. Moreover, competition is fierce and clients have to be satisfied. We also have to seek out more clients to gain more from our investments. To get there, more research and more new clients are needed, as mentioned earlier. We have to diversify, seek out new markets and win contracts to limit our reliance on any one area of activity. It goes without saying that much needs to be done.

Between a Hammer and an Anvil

The metal product fabrication industry has seen its employment ranks and real GDP rise to enviable heights in recent years, riding the wave of the positive economic backdrop. Since this sector has to align with many others to thrive, we can say that it has succeeded handily. However, the industry needs more

than a favourable economic environment to stay in business; it has to keep updating and investing. Its survival is at stake, at a time when specialized workers are hard to find, technical and environmental requirements are getting stricter and we have to sell our know-how to new markets. The technical challenges are huge, and we have to increase our performance and productivity if we want to avoid being ejected from the value chains. An ambitious program to be sure, but it's a must if our metal product makers do not want to find themselves caught between a hammer and an anvil.

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