Perspective

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The repatriation of manufacturing: beyond the rhetoric

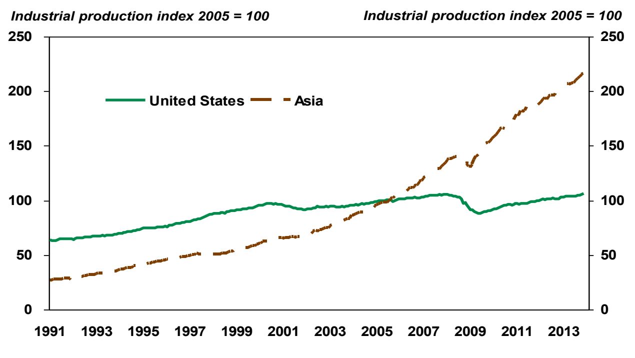
After more than a quarter century of moving manufacturing production to the emerging countries (China in particular), we now see some disenchantment. Some people are even talking about repatriating manufacturing to the United States, Canada and Quebec. While this idea has its charms and gets good press coverage, it is far from clear that it will materialize on a large scale. It would be an illusion to believe that Quebec will win back the 160,000 wage-earning jobs that were lost between 2001 and 2013. Even if production were to return to the peaks of 2007 and 2008, technological progress and productivity gains would reduce labour requirements. Repatriating production could certainly benefit Quebec's manufacturing sector; however, we must recognize that the sustainability of the industry will also depend on innovation and productivity gains.

A RETURN TO LOCAL PRODUCTION

The manufacturing industry is an important asset in an economy. That is why it attracts so much interest, and why the disappearance of thousands of jobs caused such a hue and cry in North America and in Europe in the 2000s. An index of industrial production in the United States and Asia since 1991 provides a general picture of manufacturing trends (graph 1).

However, the relocation of production to emerging countries has decelerated in recent years, and its proponents have lost some of their enthusiasm. In fact, the advantage offered by China has eroded over time, undermined by wage increases, rising transportation costs and production timelines.

Graph 1 – Industrial production: Asia wins the game



Sources: Datastream and Desjardins, Economic Studies

As a result, some analysts and a few research firms have already predicted a return of manufacturing to the United States (known as "reshoring"). This assertion is premature, although it cannot be denied that some large corporations have indeed repatriated a portion of their activities. However, many analysts who examine the phenomenon believe that a huge chunk of production will not return to the U.S. due to the high wages on this side continent and to the fact that there are still many other countries where labour costs are even lower than in China. Generally speaking, specialists and observers acknowledge that the Middle Kingdom will remain an important production centre, that it offers undeniable benefits, and that the bulk of global manufacturing activity will remain outside the United States.

THE CRUX OF THE MATTER: EMPLOYMENT

Jobs in the manufacturing sector are sought after because they generally offer better-than-average pay and are, by a vast majority, full-time. Production in turn generates hiring by shipping firms, wholesalers and various professionals (researchers, engineers, accountants, advertisers, marketing specialists, etc.).

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NOTE TO READERS: The letters k, M and B are used in texts and tables to refer to thousands, millions and billions respectively.
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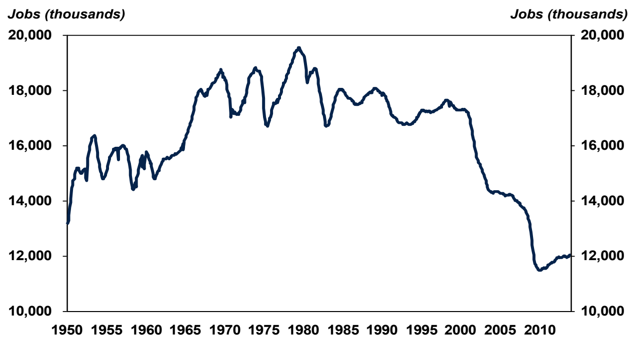
Manufacturing payroll trends in the United States show that staff cuts have been going on for a long time (graph 2). Payrolls hit their peak at the end of the 1970s, and their decline accelerated during the 2000s. However, an increase of around 450,000 jobs has been observed since the low point of 2010. Should this be attributed to the repatriation of manufacturing activity? Nothing could be less certain. The recession of 2008 and 2009 undermined employment in all sectors, and a large share of the increase in jobs is a result of the economic recovery. The automobile industry is a good example: production slowed during the crisis, and has started up again since then.

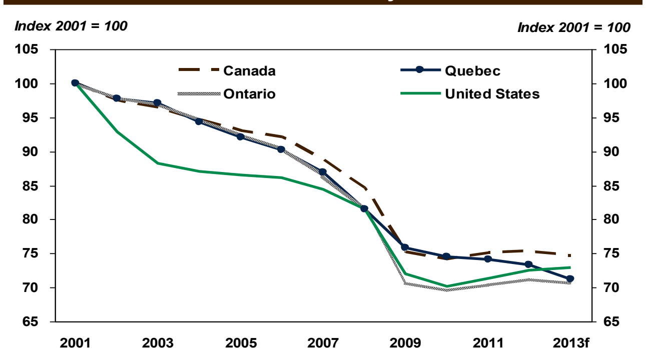
Graph 2 – United States: The decline in manufacturing employment began a long time ago



Sources: Bureau of Labor Statistics and Desjardins, Economic Studies

Concurrently, according to the "Reshoring Initiative" organization, which promotes repatriating manufacturing to the United States, approximately 2,000 jobs per year were brought back to the U.S. from 2000 to 2008. Between 2010 and 2012, approximately 50,000 jobs were created through the repatriation of manufacturing production. Unfortunately, there are no data compiled by official statistical organizations. These numbers must be handled carefully: while they provide a general picture, they are not iron-clad.

Graph 3 – The number of manufacturing wage-earners has declined considerably since 2001

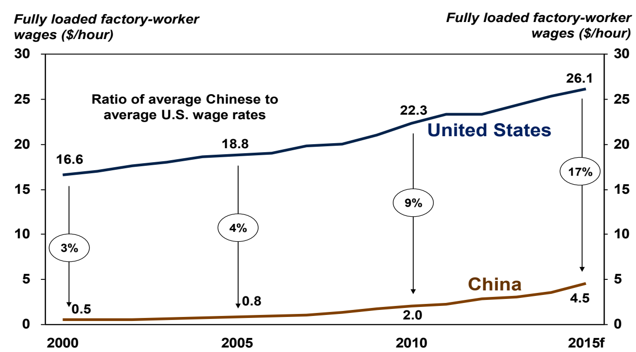


Sources: Statistics Canada and Desjardins, Economic Studies

If we compare recent trends in wage employment on this side of the border with those of the United States (graph 3), we find that compared with the rebound observed in the U.S., the rally in Ontario is fairly timid, while it is non-existent in Quebec. It is still too early to talk about any trend reversal or massive repatriation of manufacturing in this country.

Around the world, we can find examples of companies that have decided to invest once more in their home countries rather than continue expanding in China (e.g. Philips in the Netherlands, GE in the United States, etc.). However, the phenomenon has not reached epidemic proportions.

Graph 4 – Wages are climbing rapidly in China



Sources: Economist Intelligence Unit, U.S. Bureau of Labor Statistics, selected company data et Boston Consulting Group 2012

A DIFFERENT PERSPECTIVE ON MANUFACTURING

The repatriation of factories and labour is part of a broader issue: that of goods production. The question of wages is still important, and on this point we note that the wage gap between China and the United States is gradually narrowing. In graph 4, the Boston Consulting Group (BCG) shows the ratio between a Chinese worker's wages and those of an American worker. It varies from 3% in 2000, to a forecast 17% in 2015. It has been noted that during the 2000s, wage growth in China was much sharper than in the industrialized countries. There is also a consensus that Chinese wages will keep rising.

BCG[1] also noted that Chinese wages have grown faster than productivity in recent years. It estimates that by around 2015, the total production cost of many products will be only 10% to 15% lower in China (in the coastal regions) than in the United States, and that at that point, given shipping,

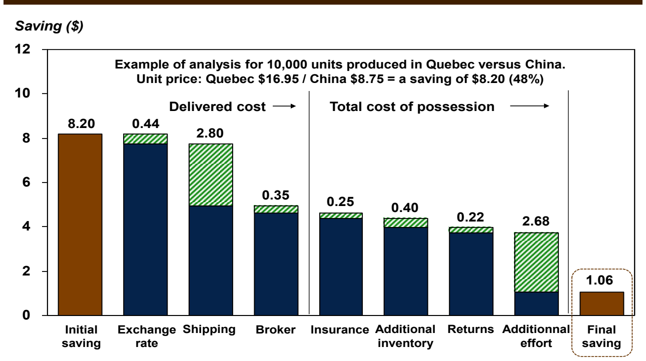
[1] The Boston Consulting Group, Made in America, Again. Why Manufacturing Will Return to the U.S., 2011, 19 pages.

warehousing and many other costs, it could be worthwhile to repatriate production to American soil. The Hackett Group, another American analysis firm, asserted in 2012 that with a 16% cost differential, American manufacturers could consider repatriating all or some of their operations as an option.[2]

The concept of cost has changed considerably. There are many more factors to take into account when deciding to move production offshore, or to bring it back, than there were 15 or 20 years ago. The quality of products, intellectual property and protection, reaction times and coordination between the various links of the production chain must now be estimated. To that we must add in taxes and miscellaneous duties, transportation logistics, warehousing costs, the ease of doing business, closeness to consumers, currency fluctuations, the regulatory climate and the proximity between innovation and production. Some industry groups even suggest including a measurement of risk reflecting factors such as counterfeiting, political instability, natural disaster and social unrest.

Closer to home, the Deloitte firm published an in-depth study[3] on Quebec's manufacturing sector in 2013 that clearly explained the concept of "total cost of possession." This is not a brand new concept, but an illustration (graph 5) makes it easier to understand. In the example shown, an initial saving of $8.20 per unit of goods produced in China versus in Quebec can be reduced to $1.06 if we factor in all the costs.

Graph 5 – The final saving is actually less than that projected, when all costs are factored in



Sources: Supply Chain Asia, Boston Consulting Group and Deloitte, The future of Quebec's manufacturing industry: solutions for a brighter tomorrow

Meanwhile, despite the loss of certain advantages on China's part, the idea that it might be more appropriate to "meet local (or regional) demand with local production" is gaining ground. We can easily imagine repatriating a portion of production to the United States, Mexico and Canada to meet North American demand. At the same time, the Chinese market, which is expanding, would keep being served by local factories. Given that production intended for the Chinese market would take place there, this would limit the volume of activities that might be repatriated to North America or Europe.

THE CANADIAN DYNAMICS OF REPATRIATION

Canada is also concerned about repatriating manufacturing and, just as in the United States, there is support for the idea. The Toronto chapter of the Society of Manufacturing Engineers is actively promoting an initiative called "Take Back Manufacturing" and is seeking to circulate the idea that a portion of the production that has been outsourced in recent years could be brought back to Canada.

The analysts are cautious in their assertions and agree that there is no "one size fits all" approach, and that we should not expect a return of the same types of jobs as those that were relocated overseas. Technology has changed the rules of the game. On this point, American manufacturers seem to have invested quite a bit more than their Canadian counterparts. One question that is frequently raised is the following: will Canadian businesses be competitive enough to participate in the North American supply chains? Will Canada be able to benefit from the repatriation of manufacturing to the United States?

Along the same lines, given that Canadian manufacturers have not made investments to increase their productivity, how might the calculation of repatriation costs benefit them as producers? The question has been asked, and there is no clear answer. We already know that Canada's share of global trade has declined, from 4.5% in 2000 to 2.5% at the beginning of this decade[4]. On one hand, Canada's main trading partners have experienced a rate of growth lower than that of the global economy during that period. On the other hand, during the same period, Canada's unit labour cost has climbed to the point where it is 75% higher than that of the United States. The lion's share of this decline in competitiveness is attributable to the appreciation of the Canadian dollar. However, we must acknowledge that the slower increase in productivity on this side of the border has also weighed in the balance.

[2] The Hackett Group, Reshoring Global Manufacturing: Myths and Realities. 2012, 10 pages.

[3] Deloitte, The future of Quebec's manufacturing industry: solutions for a brighter tomorrow. 2013, 212 pages.

[4] Bank of Canada, Tiff Macklem, "Global Growth and the Prospects for Canada's Exports," speech given on October 1, 2013.

Table 1 - Repatriation of manufacturing production
Examples of sectors that could be repatriated to the United States

Hackett Group 2012	*Boston Consulting Group 2011 and 2012*	*PricewaterhouseCoopers 2012 and 2013*
If the industry is labour-intensive, an offshore location is still a viable option. For other sectors, it is worth doing the calculations.	Sectors close to the tipping point: - transportation equipment - electrical devices and equipment - furniture - plastic and rubber products - machinery - metal products - computers and electronic products	Sectors that would be better off repatriating their production, maintaining their operations and investing more in the United States: - chemical products - primary metal manufacturing - machinery

Sources: Hackett Group, Boston Consulting Group and PricewaterhouseCoopers

MANY ARE CALLED, FEW ARE CHOSEN

Which sectors are best suited for repatriation to North America? There is no consensus on this question. The answers differ among the various American studies published to date. Table 1 presents an overview. For some analysts, repatriation of manufacturing is not necessarily appropriate for industries that are labour-intensive, but calculations are worth doing in other sectors. According to BCG, seven types of activity are close to the tipping point at which production in the U.S. might win out: transportation equipment, electrical devices and equipment, furniture, plastic and rubber products, machinery, metal products and computers and electronic products. If 10% to 30% of the products currently imported from China in these seven sectors were produced in the United States by the end of this decade, this would add from US$20 to US$50 billion to the U.S. economy, along with two to three million jobs.

According to PricewaterhouseCoopers, three industries would be better off repatriating their production, besides maintaining their activities and investing more in the United States: chemical products, primary metal manufacturing and machine manufacturing. Clearly, there is no consensus.

FROM INTENTIONS TO EXECUTION

According to studies carried out in the United States in 2011 and 2012, manufacturers do not share the same intentions as far as repatriation is concerned. The Hackett Group took a look at those that were considering moving their operations from low-cost countries, nearer to regional markets in industrialized countries. Twenty-seven percent (27%) had discussed the idea without acting upon it, 46% were engaged in cost/benefit analyses, 7% had drawn up formal action plans and 20% were at the implementation stage. BCG conducted a survey of 106 companies in 2012 and found that 37% of manufacturing decision-makers whose sales were above US$1 billion planned to repatriate production from China to the United States. Among those whose revenues were over US$10 billion, that percentage was around 50%.

Here at home, the Business Development Bank of Canada (BDC) surveyed 447 entrepreneurs; 35% of those that engaged in outsourcing mentioned that they had repatriated some operations that were formerly contracted out to third parties. Furthermore, in another survey of 140 manufacturers conducted in the spring of 2013, 23% of respondents mentioned the repatriation of operations to Canada as an opportunity for growth.

However, there can be bumps in the road to repatriation of manufacturing production. The supply chain is not necessarily appropriate, and the components might not all still be available in North America. In addition, it is sometimes necessary to redesign a product to adapt to new manufacturing processes.

3D PRINTERS: FROM POSSIBILITY TO REALITY

Many people claim that 3D printing, or additive-layer manufacturing, is the key to a renaissance in manufacturing in industrialized countries. While this technology offers unheard-of flexibility, greatly accelerates the design and development of new parts, and is particularly useful for prototyping and modelling, it has not yet reached the point where it can replace all existing machinery.

Costs of use tend to diminish as the number of users increases. Right now, this technology is used on a small scale. It offers undeniable advantages, since it allows custom work, considerably reduces losses of materials, and reduces the number of steps in the production process. In short, it has the potential to save time and money.

If this technology could be deployed on a broad scale, it would change the face of the manufacturing sector. But is it synonymous with the repatriation of production? That much is not clear. Furthermore, some people claim that this technology could reduce the numbers of workers in factories and increase those of designers, engineers, information technology specialists and software experts in particular. Developments along those lines are expected, and we will have to keep a watchful eye.

THE NEXT TREND

While in recent years the repatriation of manufacturing has been the focus of large North American research firms and manufacturing industry associations, some players are already thinking beyond "reshoring." The McKinsey & Company group is proposing "next-shoring." To put things in a nutshell, the manufacturing industry must now consider two questions: 1) What must be produced close to the demand? 2) What must be produced close to innovative supply sources, in order to adopt new technologies and train the workers?

According to them, this is what will drive decisions about where to locate manufacturing operations in the years to come. Is this a promise of success in repatriating production to North America? If the first option wins out, it should promote the repatriation of certain activities whose products are intended for North America, a market of slightly over 465 million consumers in 2013 (Canada, United States and Mexico combined). If industry is obliged to move closer to a source of innovation, that is also a choice that can promote the repatriation of manufacturing operations. However, the cost issue cannot be covered up, and it may be the factor that carries the day.

QUEBEC AND THE REPATRIATION OF THE MANUFACTURING SECTOR

How does this line of thinking apply to Quebec? We need to ask ourselves whether a repatriation of manufacturing is around the corner, and whether it will give a boost to Quebec's manufacturing industry. At first glance, we cannot deny that there are examples of repatriation; MEGA Brands, the toy manufacturer, is the one that is best known. We also know that certain niche activities in garment and metal product manufacturing have returned. However, there are not huge numbers of such examples. For anyone thinking about repatriating manufacturing operations, work needs to be done to evaluate the costs involved. Given all the factors that must be taken into account, this work should be entrusted to multidisciplinary teams.

Furthermore, if the pendulum is leaning towards "meeting local (or regional) demand with local production," Quebec could take advantage of greater proximity to the American and Canadian manufacturing sectors, given the sizes of their respective markets and the potential for repatriation and outsourcing that they might offer.

However, coasting on the American comet's tail is not enough to ensure the sustainability of Quebec's manufacturing sector. Such a strategy could even be dangerous, given the unfavourable productivity gap between Quebec and its southern neighbour. Original and innovative production can be another, equally attractive option. The example of the German manufacturing industry, with its high wages and high-quality products, offers food for thought.

In Quebec, the issue continues to arouse concern. Some initiatives were announced in the fall of 2013 as part of the Quebec Industrial Policy 2013–2017. Additional effort will be made to modernize businesses, support innovation and promote new flagship businesses.

Regardless of whether Quebec businesses decide to focus on repatriating their operations, innovating or finding a place in North American supply chains, they will in any case be obliged to invest time and money in increasing their productivity. The vitality of the industry depends on it.

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