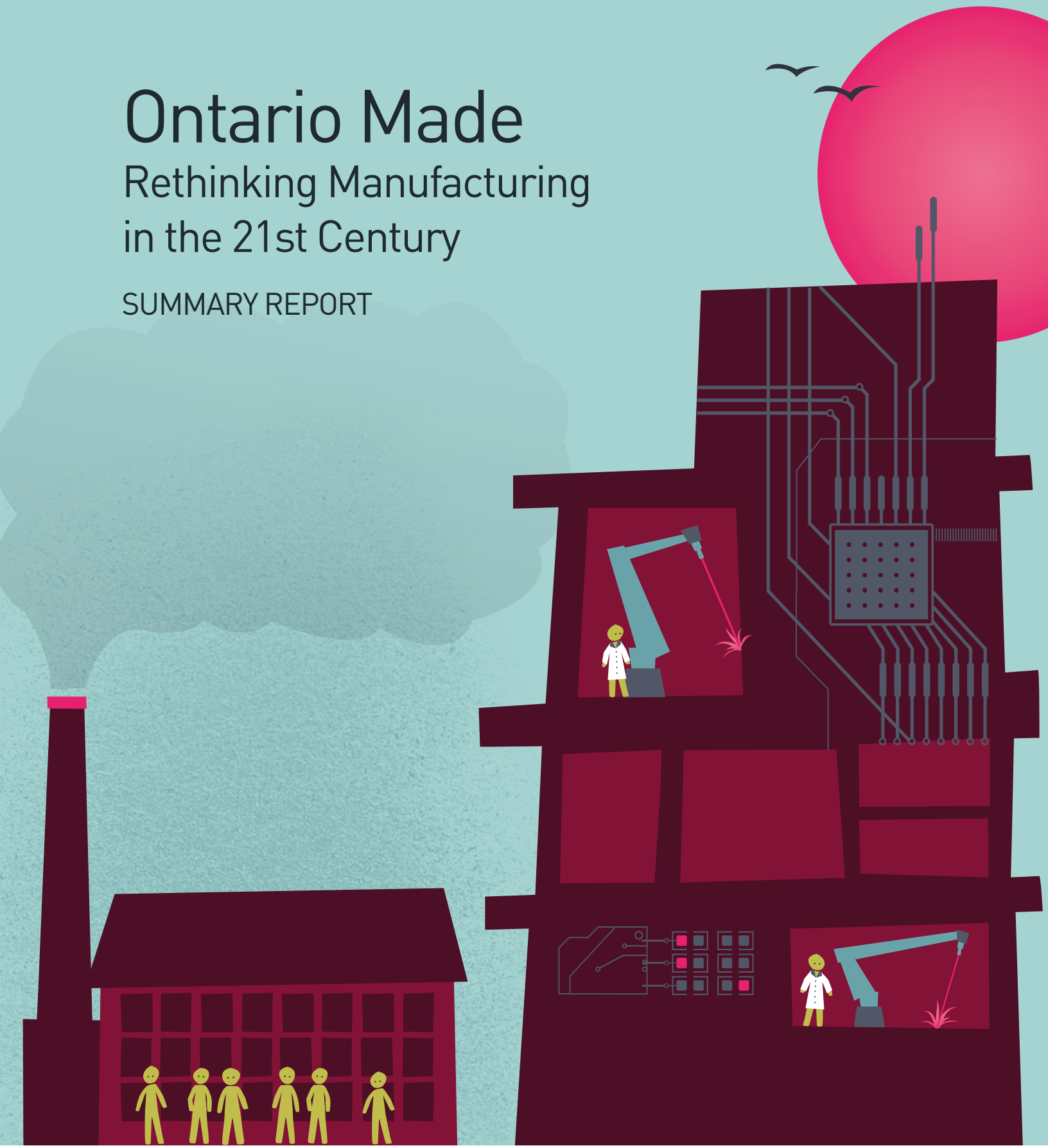
Ontario Made

Rethinking Manufacturing in the 21st Century

SUMMARY REPORT



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School of Public Policy & Governance
UNIVERSITY OF TORONTO

Ontario Made: Rethinking Manufacturing in the 21st Century

This summary report provides an overview of a longer, one-year research effort on the future of the manufacturing sector in Ontario (see Ontario Made: Rethinking Manufacturing in the 21st Century-Full Report). The purpose of this summary brief is to describe the current state of the manufacturing sector in Ontario, to explain why it has been experiencing challenges and to outline a strategy for renewal. To do so, we need a clear understanding of why Ontario has experienced job losses and where manufacturing is headed globally.

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Ontario's manufacturing sector was once the bedrock of the province's economy. But over the past decade the sector has lost some 300,000 jobs and its share of GDP has declined sharply. Whereas in 2002 the sector accounted for 8.9 per cent of Canada's GDP and 21.7 per cent of Ontario's, it now accounts for just 4.9 per cent and 12.7 per cent respectively. Many communities across the province have felt the hardship of factory doors closing for good.

Ontario is not alone among developed economies in having a manufacturing sector that faces significant challenges. Compared to peer jurisdictions in the US, the decline in employment has been similar, while the decline in output in Ontario over the past 15 years has been steeper (Figures 1 and 2 below depict the drop in employment share and total output, respectively).

Even though there has been modest recovery in some American states in recent years, these gains are too small to signify a 'renaissance' in US manufacturing employment (see Figure 3).

Some of the decline in employment and output is to be expected and merely reflects the ongoing shift from goods-producing to service industries being experienced across OECD countries. But there are other explanations for the challenges in the Ontario manufacturing sector.

The composition of Canada's exports has changed dramatically. We were once net exporters of manufactured goods. Today, our exports are more likely to be natural resources and Canada's overall balance of trade tells a striking story (see Figure 4).

Ontario's "terms of trade" are no longer favourable. The rapid increase in the value of the Canadian dollar over the past decade has represented an enormous challenge to many Ontario manufacturers, as their goods became more expensive to foreign customers. The rise in global competition means that maintaining a competitive cost structure is crucial to attracting new investments and retaining current plants. Although the recent drop in the value of the Canadian dollar will help somewhat, there are other forces that need to be addressed.

Manufacturing is going through an enormous global transformation. Many industries in Ontario have not kept up. Unless governments and the private sector understand and appreciate the forces at play and act quickly, it is likely that Ontario's manufacturing sector will continue to suffer.

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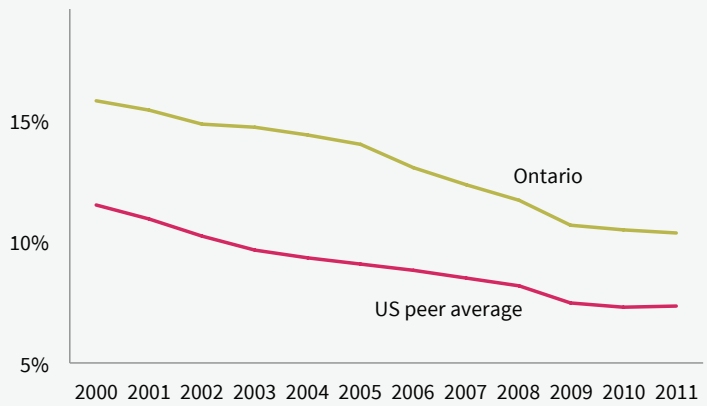
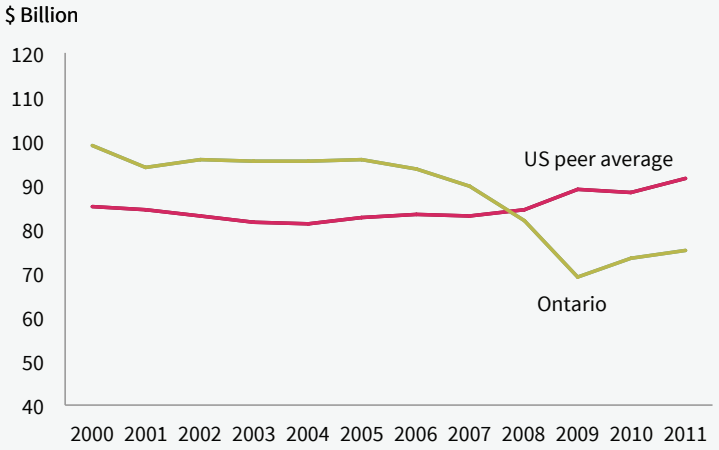
FIGURE 1
Manufacturing Employment Shares in Ontario and US peers, 2000-2011



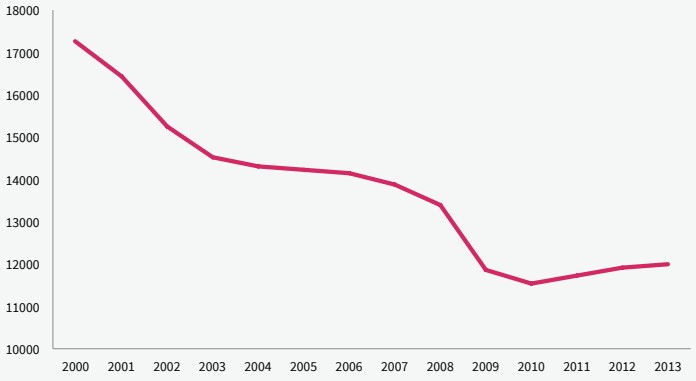
Source: Statistics Canada CANSIM Table 383-0010; and U.S. Bureau of Economic Analysis.

FIGURE 2
Total manufacturing output in Ontario vs. US peers, 2000-2011. Source: Statistics Canada CANSIM Table 379-0025; and US Bureau of Economic Analysis



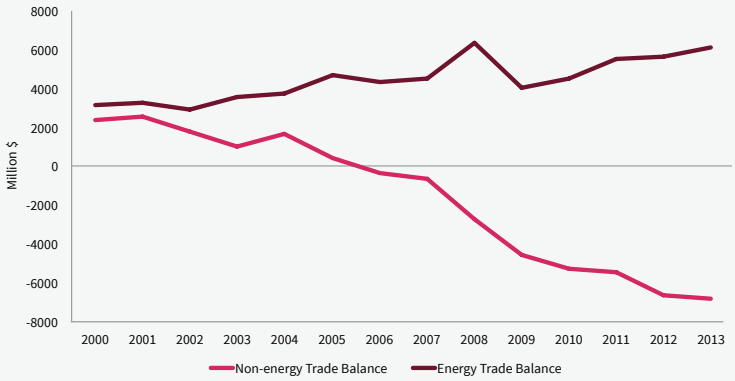
Note: Output measured as real value added in 2005 dollars.

FIGURE 3
Total manufacturing employment in the US, 2000-2013



Note: Total Employment in 1000
Source: Bureau of Labour Statistics

FIGURE 4
Canada's trade balance for energy and non-energy goods, 2000-2013



Source: Statistics Canada, Cansim Table 228-0059

sector in Ontario, to explain why it has been experiencing challenges and to outline out a strategy for renewal. To do so, we need a clear understanding of why Ontario has experienced job losses and where manufacturing is headed globally.

While the Ontario manufacturing sector is at a crossroads, many of the crucial elements for success are already present in Ontario. It should be pointed out that even referring to the "manufacturing sector," while necessary, is in part a misnomer because the sector is very diverse with different sub-sectors experiencing different opportunities and challenges. Part of the choice facing Ontario will be what kind of manufacturing sector we seek to cultivate. This paper will outline strategies and policy instruments for building a healthy sector based on Ontario's comparative advantages.

How did we get here?

For over a decade, the Ontario government has implemented policies advocated by many business leaders. Corporate tax rates were cut, the provincial sales tax was harmonized with the GST, and the capital tax was eliminated. Business called on the federal and provincial governments to create tax incentives for research and development, as well as accelerated write-offs for capital investments. Yet despite government actions on these demands for a more attractive business environment, challenges in the manufacturing sector have only grown more severe.

As measured by employment or share of GDP, the size of Ontario's manufacturing sector has declined over the past two decades. However, while the size of the sector and levels of employment have political salience—and powerful consequences for individuals and communities affected by factory closures, they may not be the most appropriate way to measure the health or competitiveness of the sector. If the overall Ontario economy is producing good quality employment and growing at a sustainable rate, whether the share of manufacturing employment is higher or lower than it was five or twenty-five years ago is not particularly relevant. Nor is every job loss or factory closing an indication of larger structural problems within the Ontario manufacturing sector. In fact, declining employment can sometimes be a sign of the sector's high productivity, competitiveness and long-term viability.

For Ontario, the shrinkage in the manufacturing sector is in part a delayed response to shifts in the global economy that began more than thirty years ago. Ontario was insulated from some of this restructuring due to the low value of the Canadian dollar. Many peer jurisdictions saw far steeper declines in manufacturing employment through the 1980s and 1990s. In some ways, Ontario's manufacturers were as productive and innovative as they needed to be, given the environment—a low dollar and a healthy US economy that created ready buyers for what Ontario was producing. But the environment has changed dramatically.

Regardless of one's political positioning on the issue of exchange rates and the debate about Dutch Disease—i.e. whether manufacturers' challenges are the result of the rapid escalation of their comparative costs or their own complacency and failure to invest in productivity-enhancing innovation—the conclusion is the same. Increased exchange rates have damaged one of the Ontario manufacturing sector's major advantages (Figure 5 below illustrates employment losses in Ontario's manufacturing sector in the wake of a rising Canadian dollar).

Although the value of the dollar has moderated in recent months, relying on an artificially low exchange rate is not a long-term, sustainable strategy. The recent drop in the value of the Canadian dollar helps competitiveness to some extent, but the Ontario manufacturing sector will need to rediscover other advantages.

Manufacturing in a Global Economy

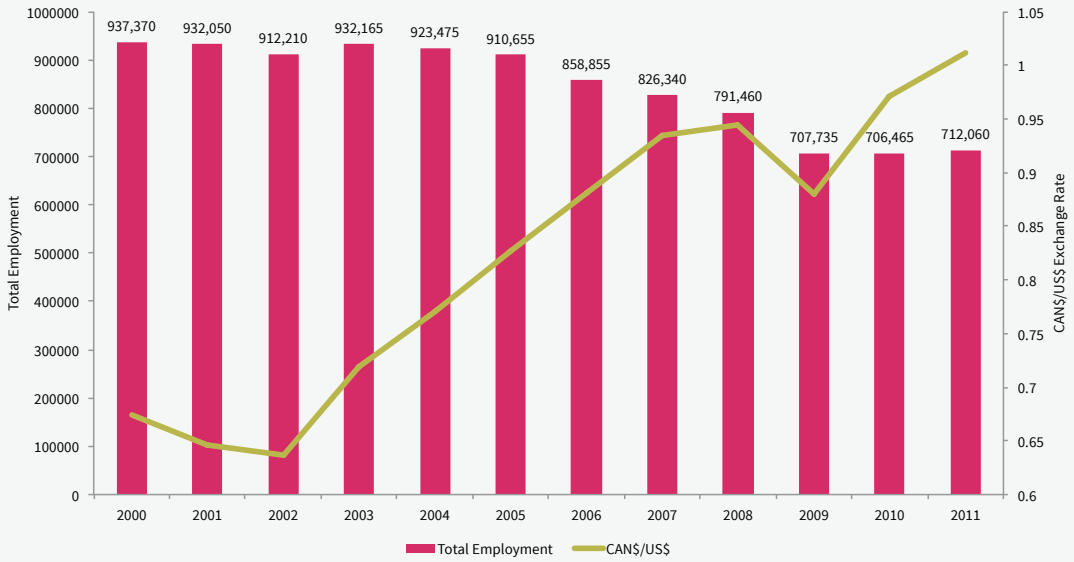
Some suggest that it doesn't matter whether a jurisdiction has a healthy manufacturing sector or not (see Bhagwati 2011). But those who suggest it is irrelevant whether Ontario continues to make things underestimate the importance of the manufacturing sector to the overall economy.

The evidence is clear that a healthy manufacturing sector is important to the overall economy. A healthy manufacturing sector provides positive spillovers in the form of research and development, skills training and service sector employment. Manufacturing firms tend to pay higher wages to skilled labour and purchase higher valued-added services locally. A healthy mix of SMEs and larger firms in the manufacturing sector, coupled with easy market entry, increases competitive pressure in the sector and is an incentive for firms to innovate, invest and conduct R&D. It is clear that a healthy Ontario economy must contain a vibrant manufacturing ecosystem that includes a large number of globally successful manufacturing firms.

But developing a manufacturing ecosystem that turns SMEs into global leaders and attracts major new foreign direct investment in plants requires an understanding of the new global realities facing manufacturing. Among these new realities, the rise of global value chain (GVC) processes has been the most important and a key factor leading to job losses in Ontario.

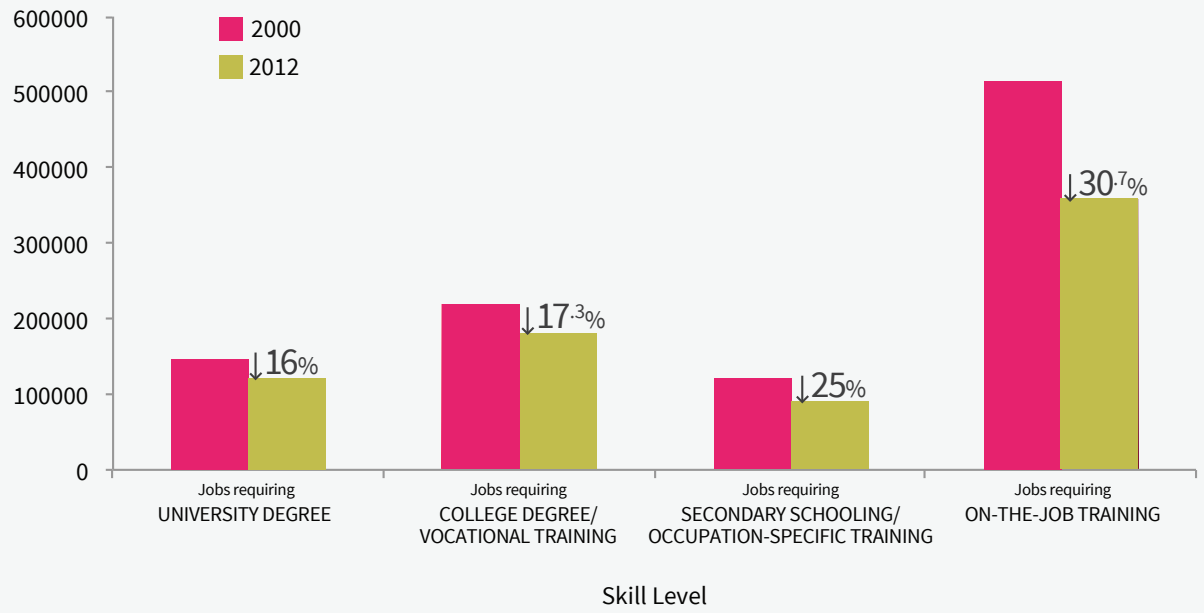
GVCs can be understood as the growth in global manufacturing characterized by specialization in tasks, with the process of production broken up into specific, discrete operations along the value chain. In a GVC, goods are no

FIGURE 5
Employment drops in Ontario's manufacturing sector in an environment of a rising dollar



Source: Statistics Canada, CANSIM Table 383-0010.

FIGURE 6
Employment Change in Ontario's manufacturing sector by skill level



Source: Statistics Canada, Labour Force Survey.

longer produced in one country or region. Different tasks are undertaken in different regions, driven by comparative advantages. A manufactured good becomes, in essence, a bundle of different products and services. In general, more advanced economies have comparative advantages at the higher end of the global value chain, in areas like R&D, design and marketing, while emerging economies have comparative advantages in more labour-intensive areas like production and assembly.

Many firms have relocated lower skilled and labour-intensive portions of the production process outside of Ontario and our research has confirmed that it is these jobs that have been more likely to disappear in Ontario (see Figure 6). The highest job losses have been experienced in categories like assembly and processing, which are lower on the value chain, require less education and training, and on average pay 60-80 per cent of the average Ontario wage.

The accompanying full report includes a more detailed examination of global productivity trends in different manufacturing sub-sectors. Our research found that low productivity sub-sectors are more likely to rely on labour-intensive production techniques with competitiveness dependent on low labour costs. While job losses between 2000-2012 occurred in virtually all sub-sectors of manufacturing, losses in the higher productivity sectors (like automotive manufacturing, chemical products manufacturing and computer and electronics) were mainly due to productivity gains and the impact of the 2008 recession.

On the other hand, job losses in the lower productivity sectors (like apparel and leather products, textile and wood product manufacturing) were mainly due to the relocation of production to lower-cost jurisdictions. It is these latter jobs that were more affected by the cost of labour and the increased exchange rates. Those jobs that were lost in the higher productivity sectors were more likely to occur at lower levels of the GVC in those firms. Figure 7 depicts changes in employment by sub-sector.

It should also be noted that the sub-sectors enjoying higher productivity continue to have competitive and favourable labour costs when compared to our peer jurisdictions. This makes these higher productivity sub-sectors all the more likely to compete and grow in the coming decade.

Although job losses are never welcome, it would be more troubling to the overall Ontario and Canadian economies if most of the job losses were concentrated in higher wage

jobs higher in the value chain. But they are not. In fact, Ontario is unlikely to compete with Mexico on the cost of low skilled labour—and likely doesn't want to. A strategy for the Ontario manufacturing sector must be focused on future opportunities. Many of the plants that have closed in recent years were older and could not compete with more modern plants that had invested more heavily in Information and Communication Technology (ICT) and machinery and equipment (M&E).

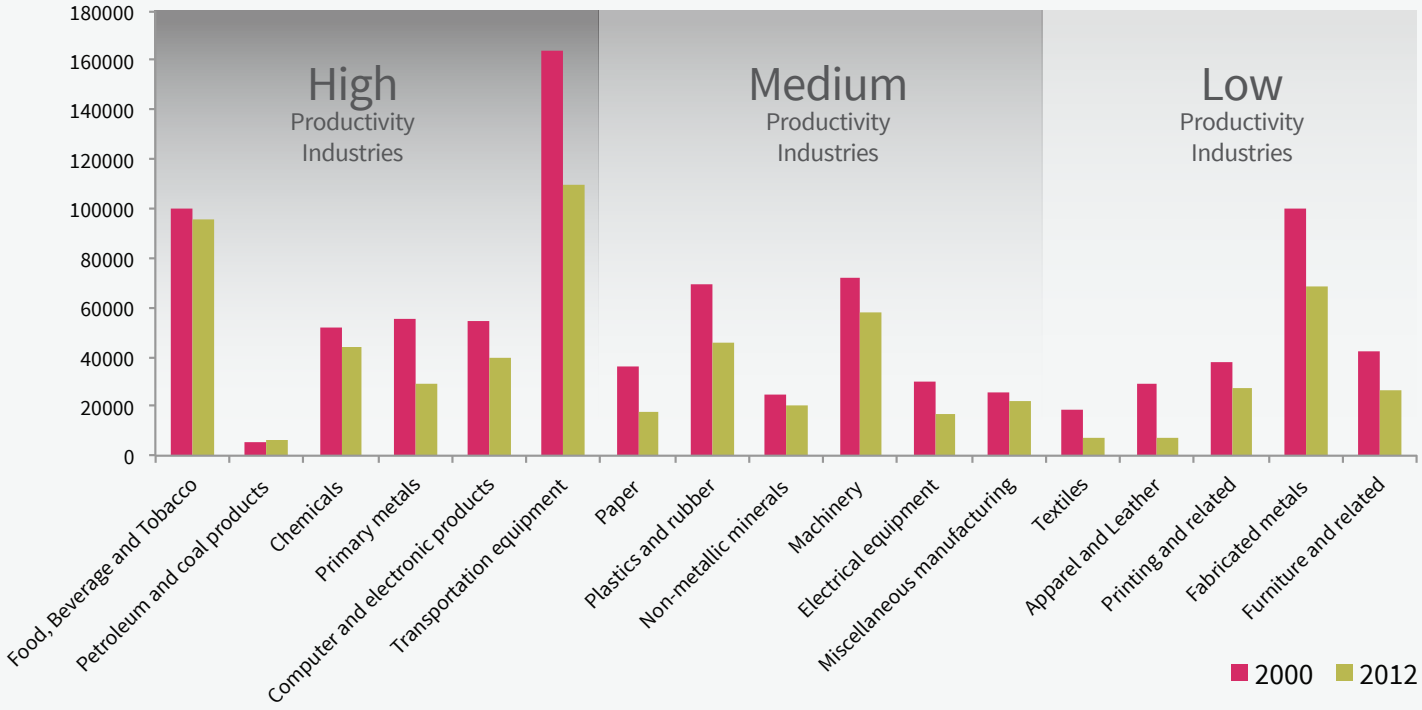
The global trends causing some job losses and plant closures in Ontario—the growing integration of the global economy, the importance of GVC, and the rise of emerging markets—also present an opportunity for Ontario's manufacturers. Not only can successful firms invest and acquire abroad, they can also export goods to the emerging global middle-class of consumers.

While many Ontario companies remain entirely dependent on exports to the United States, more are beginning to take advantage of their expertise, comparative advantages and diaspora networks to diversify their exports and increase their exposure to emerging markets. Ontario may also have unique comparative advantages that can attract increased foreign direct investment in the sector. But to profit from our comparative advantages, Ontario manufacturing firms must have global—not just Canadian or North American—business strategies and governments must support this historical pivot toward the rest of the world. As others have noted, Canadian firms need greater exposure to emerging markets and Canada needs to be a real trading nation, not just a junior partner in North American value chains.

A Bleak Picture?

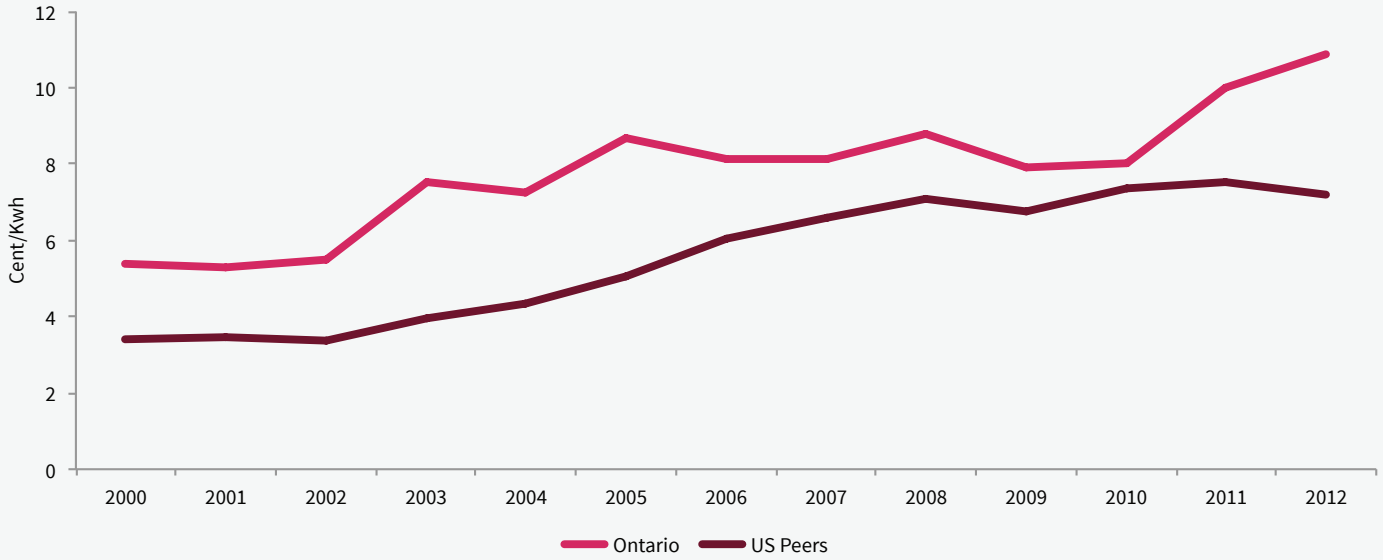
Stories in the media often depict a dismal future for the manufacturing sector in Ontario. Ontario's apparent advantages over our American competitors have vanished. Our dollar is no longer significantly lower. The border is more challenging for exporters. And the oft-cited cost advantage for Ontario manufacturers associated with our public health care system will decline significantly with the implementation of the Affordable Health Care Act in the United States.

FIGURE 7
Employment changes in manufacturing sub-sectors in Ontario between 2000 and 2012



Source: Statistics Canada, CANSIM Table 281-0024.

FIGURE 8
Electricity prices for industrial consumers in Ontario and US peers, 2000-2012



Source: NEB; and U.S. Energy Information Administration (EIA).

Much of the environment that shapes our advantages and disadvantages is beyond the control of governments or the private sector. A high dollar and rising energy prices are unlikely to change drastically. Although there are policy instruments that could be used to influence both of these drivers, (for example, see Spiro 2013) it is unlikely that the days of the low dollar and cheap energy are about to return anytime soon. A successful manufacturing strategy needs to look elsewhere for remedies.

The list of US advantages is also seemingly long. In many of Ontario's US peer jurisdictions manufacturers can count on lower energy costs, fewer regulations, government-driven tax incentives and subsidies to attract new plants, and greater labour market flexibility, particularly in those states that have adopted "Right to Work" legislation.

In fact, when you document the decline of Ontario's traditional advantages and the growing list of advantages in peer jurisdictions in the US, it is a wonder we have any plants left at all. Why would a firm set up a plant in Ontario and why do those that are here choose to stay?

Manufacturing at a Crossroads

Two broad options are open to Ontario. It is possible that neither will be successful. It may also be possible to combine elements of both. But it is useful to sketch out these two options to help clarify our choices.

The first option would be to employ a strategy similar to a number of Ontario's peer jurisdictions, who are relying on lower labour costs, deregulation, financial incentives like subsidies and tax breaks, and reduced energy costs to grow their manufacturing sectors. This approach is part of a coherent strategy to attract jobs and investment in those areas that are labour-intensive at lower ends of the GVC. In North America, Mexico is benefiting significantly from re-shoring of some of these jobs due to rising labour costs in Asia and increased costs of transportation. The approach may be yielding benefits in some US states as well, although employment growth in labour-intensive sub-sectors has been modest or non-existent in most US states.

The strategy is likely to produce spillovers for the overall economy and improve GDP growth. Increased employment in communities with traditional strength in manufacturing will help the economy in these communities. It is an attractive strategy because it mirrors the approach of some of our closest neighbours.

The jobs that might be generated by following this path, however, are likely to be lower paid, lower skilled jobs at the lower end of the GVC. In fact, this approach explicitly relies on Ontario building a competitive advantage on these variables—lower labour costs, decreased regulation, lower energy costs and increased business subsidies and incentives. It is unclear why this approach would succeed. Ontario is unlikely to be able to present a more compelling offering than Mexican or American competitors on these measures. It would require a wholesale re-making of the culture of Ontario's manufacturing sector and may also undermine some of our existing strengths, such as our ability to deploy a highly skilled labour force to attract investments at higher ends of the GVC.

There is another option worth considering, one that focuses on ensuring Ontario is an attractive jurisdiction for innovative, high-tech, advanced manufacturing at the upper end of the GVC. One of the possible downsides of such a strategy is clear: it would likely mean that many of the jobs that have disappeared over the past decade will not return.

If this strategy were successful, it would lead to a more productive sector that generates both product and process innovation, producing attractive products at competitive prices. This path would produce more positive spillover and multiplier effects for other sectors. This will mean higher-paying manufacturing jobs, more profitable firms, more large firms, more export-orientation, and greater diversity of export markets—all of which will generate more jobs and more GDP for the overall Ontario economy, not just in the manufacturing sector. As we will see, such a strategy is also more aligned with Ontario's existing comparative advantages.

This approach is also in line with the current trajectory of manufacturing—a shift towards greater use of technology and robotics rather than labour-intensive modes of production. Large, state-of-the-art plants, supported by robotics and ICT and a small labour force, are fast becoming the new normal in manufacturing. The Internet of Things (i.e. machine-to-machine communication, including the use of smart grid sensors) creates vast potentials to boost productivity in the production process and supply chains.

New public and private sector strategies are necessary to ensure that Ontario is an important player in this new manufacturing reality.

Pre-Conditions for Success

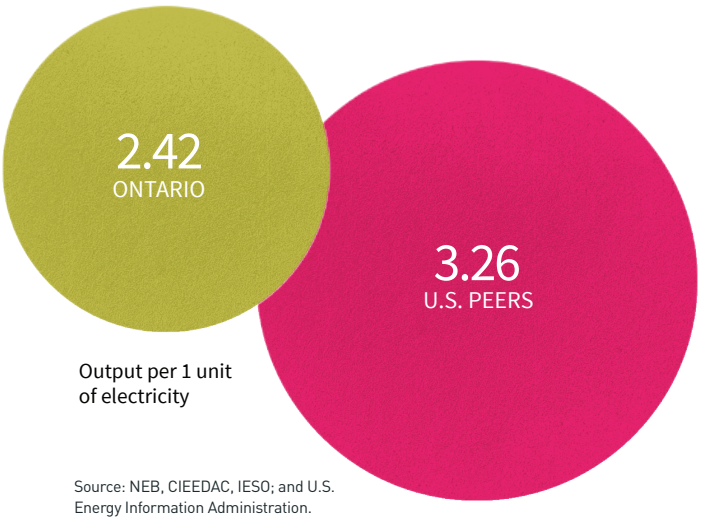
The proposed strategy would have as its core objective increased exports as a result of increased productivity, innovation and the sustainable growth of firms. These goals can be encouraged by a more relentless focus on supporting investments in four key areas: skills training, research & development, machinery & equipment, and information & communications technology. Without more of these productivity-enhancing investments, Ontario and Canada cannot maintain the level of prosperity to which we've become accustomed or close the productivity deficit with peer jurisdictions in the US.

The history of under-investing in the capital that supports competitive, growth-oriented productive firms can be reversed. If governments and the private sector better align their efforts to improve investments in skills, M&E, R&D, and ICT, we can expect increased productivity, firm growth, and growing and diverse exports to follow. Individual firms' investments, in skills and R&D in particular, leak (i.e. trained workers move to other companies and R&D investments benefit other firms) and so there is a role for government to support these investments in some way.

Success on these measures would lead to a diverse, successful manufacturing sector that produces spillovers for the rest of the economy. The strategy would focus on supporting Canada's global leaders and supporting growth and increased exposure to emerging markets for SMEs. It would put aside the sterile discussion of whether Canada's entrepreneurial culture is too ossified by a branch plant mentality; instead, it would acknowledge that a strong manufacturing sector would include a healthy mix of Canadian firms that manufacture here in Canada, Canadian firms that manufacture abroad, and foreign multi-nationals that choose to produce goods in Canada. All of these contribute value to the Canadian economy.

Success requires an accurate understanding of the challenges we face. While much public debate has focused on the costs of energy to Ontario's manufacturers, what has been ignored is that our manufacturers in fact demonstrate lower levels of energy efficiency compared to our peer jurisdictions (see Figure 9). We do not wish to weigh in on the political debate around the competitiveness of Ontario's energy pricing, but would note that there is some validity to both sides of this argument: Ontario's energy prices have in fact been going up, but Ontario's energy prices have historically been higher than those of our main American competitors and the cost of energy represents only a small input into the overall competitiveness of Ontario's manufacturing sector.

FIGURE 9
Efficiency of electricity use in manufacturing production—Ontario vs. US peers.



Source: NEB, CIEEDAC, IESO; and U.S. Energy Information Administration.

But while energy prices may be beyond the control of private sector firms, the efficiency of their plants is something they do control. How they use energy—and how much—more than its cost per kilowatt hour is an issue that manufacturers can control, and that a strategic government can support.

Investing in energy efficiency would only be one of many investments that Ontario manufacturers should make, but have not to a sufficient extent. Under-investment in R&D, ICT, M&E and labour force development explain why Ontario has a productivity gap with its peer jurisdictions. And these under-investments represent obstacles to increased exports and the growth of small successful firms into large, thriving global companies. Obviously, capital is necessary to make such investments. But, while many firms have very healthy balance sheets, they have chosen not to invest as much as their global competitors.

Ontario's Comparative Advantage

Where we don't have a comparative advantage has become quite clear as Ontario continues to shed jobs to many US states and Mexico. Our regulations are more strict, we don't have "right to work" legislation, our energy costs are going up, our dollar is likely to remain higher than it has been for the past two decades, and our governments tend not to pay firms to set up shop in Canada.

But we do have many other advantages that can be used to generate, attract and retain manufacturing firms. These advantages require careful stewardship if they are to be maintained and leveraged as strategic differentiators against peer jurisdictions. These advantages include those specific to manufacturing and those more general comparative advantages that Ontario and Canada offer.

Ontario's Comparative Advantage in Manufacturing

Ontario has implemented the major recommendations from business groups and economists as they related to the corporate tax system. Lower corporate tax rates, elimination of the capital tax and the adoption of the Harmonized Sales Tax all make Ontario a very competitive jurisdiction when it comes to business taxation.

Ontario remains geographically well-situated in the heartland of North America. As logistics and transportation costs increase, Ontario is ideally located in proximity to major North American markets. Federal and provincial investments in the Detroit River International Crossing to facilitate the flow of goods across the Canada/US border will only enhance this advantage.

Canada has free trade agreements with a growing number of jurisdictions. Canada will soon be the only jurisdiction with free trade agreements with both the United States and the European Union. Canada also has free trade

agreements with Mexico and other Latin American countries and is actively pursuing participation in the Trans-Pacific Partnership.

Ontario has an economic ecosystem favourable to manufacturing. It has a legacy in the manufacturing sector, is highly diversified, possesses many clusters in important sub-sectors of the manufacturing sector, and also has clusters of expertise in a variety of business, professional, marketing and research services, including access to financial services and capital.

Ontario's workforce is diverse, well-trained and highly skilled and its education system provides the skilled labour necessary for advanced manufacturing jobs. In addition to a strong K-12 education system, our higher education system produces creative problem-solvers and many STEM graduates. Ontario possesses an ecosystem of skilled professionals performing research and development and other high-value services that are increasingly important to the manufacturing sector. Many manufacturing jobs at higher ends of the GVC do not ask workers to perform repetitive tasks but require a combination of creative thinking and execution.

Ontario also continues to have a cost advantage in some sub-sectors, particularly those that require higher productivity and at higher ends of the GVC. This is an important nuance that too often gets overlooked in public discussions of the cost of Ontario labour. The cost of our highly skilled labour is actually very competitive.

Ontario's Foundational Comparative Advantages

We should not underestimate the attractiveness of Ontario and Canada as places for investment. But our foundational advantages require careful attention and stewardship if they are to be leveraged as comparative advantages that can continue to attract manufacturers—and other firms—to Ontario. What is striking about these foundational advantages is how many of them are tied to Canada's overall brand and value proposition.

Canada possesses political stability and certainty, as well as an independent judiciary and the rule of law. The knowledge that investments are safe, and that when economic and political change does occur it is managed competently, predictably lowers risks for investors.

High standards of safety and trust are important to many manufacturers exporting into global markets. Issues ranging from environmental to worker safety matter for many consumers and exporters. Canadian products are trustworthy products. From food products to children's safety equipment to clothing, consumers have confidence that Canadian products are of high-quality, safe and produced in a manner that is not exploitative. We should not underestimate the potential impact on many Ontario manufacturers if Canada's global brand deteriorates.

Ontario has an enviably high quality of life in many respects, which is attractive to investors. For many global firms seeking to attract highly skilled labour and management expertise, Ontario is a significantly more attractive locale in which to locate personnel than many of our peer jurisdictions. Safe streets; good quality public schools; a healthy environment, clean water and breathable air; and vibrant communities and cities all make Ontario an attractive location to live and invest for businesses and people from around the world.

Another important strength that will only become more important in attracting investment is Ontario's diversity. A diverse population, possessing cultural fluency and literacy, is a strategic asset for many firms. The presence of many diaspora networks makes Ontario more welcoming of—and attractive to—investors and workers from abroad. These diaspora networks help reduce information asymmetries and transaction costs when entering new markets or developing products for export.

Recommendations: Sector-Specific

It has become clear that Ontario does in fact have a highly attractive value proposition to offer existing and potential manufacturers, and it has everything necessary to strengthen its manufacturing sector. Canadian manufacturers will continue to make things in Ontario, global companies will continue to invest in Ontario and successful Ontario firms will continue to invest in production abroad. All three of these activities are good for Ontario.

Ontario's manufacturing sector is likely to employ fewer people than it has historically. This is an inescapable reality regardless of which strategy the province chooses. Nonetheless, a strong manufacturing sector with export-oriented global firms has benefits for the overall economy in terms of spillovers in research and development, services and high-quality employment. Realizing the vision for Ontario's manufacturing sector requires concerted action by governments, the private sector and other partners.

Our recommendations are designed to strengthen our comparative advantages and build on our existing value proposition. Many of the recommendations build on and synthesize existing suggestions from studies by other organizations, including the Jobs and Prosperity Council (JPC) and the Institute for Competitiveness and Prosperity, but we also add others with the goal of sketching out a comprehensive agenda.

When strengthening Ontario's value proposition, it is important to identify those policy tools that will encourage greater investments in those things that will lead to greater productivity: R&D, M&E, ICT and training.

Before outlining the recommendations in detail, an umbrella recommendation is in order.

The federal and provincial governments must make a real commitment to the future of the sector. This requires federal leadership and engagement. Concrete steps would include:

» Working with the province of Ontario to develop a next generation manufacturing strategy that would include aligning policy and spending priorities. In consultation with stakeholders, the strategy should focus on encouraging those investments that will increase productivity and innovation, encourage growth of firms and diversify exports (Jobs and Prosperity Council 2012). This strategy should be formalized in an agreement between the two governments on how to attract and retain manufacturing investments.

» As part of this strategy, the federal government should establish a fund to attract new assembly mandates in areas consistent with Ontario's value proposition and to level the playing field with other jurisdictions bidding for similar mandates.

» As part of this strategy, governments and the private sector need to leverage and align their resources to improve the export capacity of SMEs (some examples include: creating a one-window online portal for SMEs to access government export information and support, undertaking reverse trade missions focused on emerging markets, and making export insurance more readily available for small deals).

Enhancing Ontario's Comparative Advantages in Manufacturing

Ontario is a good place to invest in manufacturing. In particular, for those firms that require highly skilled labour and/or firms producing inputs at the higher end of the GVC, Ontario is an exceptionally attractive place to invest. Ontario's value proposition to existing and potential investors must be protected and continuously enhanced.

Competitive Tax System

Federal and provincial changes to the tax system over the past decade have given Ontario a very competitive tax system. Governments can continue to build on this strength.

» The corporate tax structure currently favours small business activity but creates a distortionary incentive for Ontario's businesses to stay small ('taxation wall') (Institute for Competitiveness and Prosperity 2012). Preferential tax rates for small businesses should be phased out.

» Increase the incentives within the tax system to make productivity enhancing investments in skills, ICT and M&E, so long as these incentives do not unduly distort behavior in other areas. Reforms to the corporate tax rate structure to encourage capital investments could include:

»» Encourage more investment by providing firms with the ability to expense capital investments up to a certain limit (Chen and Mintz 2011). The JPC suggests that this should be done by increasing the existing accelerated capital cost allowance (ACCA) rate to 100 per cent for a limited time and consider making the current 50 per cent rate permanent.

»» Adopting capital gains tax relief for firms that convert into a publicly-owned entity.

»» Introducing a formal capital gains deferral account to reduce the existing 'lock-in' effect of capital gains taxes and therefore allow firms to modernize their existing capital assets on a deferral basis.

Ideal Geographic Location

The federal and provincial governments have shown real leadership by investing in the Detroit River International Crossing. The federal government in particular was willing to expend political capital to ensure that the flow of goods across the Canada-US border at Windsor was improved. Continued vigilance around border stickiness has been important. But more can be done.

Manufacturers from across Quebec and Ontario regularly highlight congestion, particularly in the Greater Toronto Area (GTA), as a significant obstacle to delivering their goods to clients in a timely and predictable manner. The impacts of congestion on increased commute times also mean that many employers are having more concerns about getting their employees to work on time and predictably (Toronto Region Board of Trade 2013). Unless we act, we are diluting our significant locational competitive advantage.

» The federal government must participate in the creation of a real transit strategy for the GTA and invest significantly more in vital infrastructure to facilitate the free movement of goods and people (including workers) and reduce the costs of congestion.

» A more significant investment in infrastructure renewal is needed. Although the Building Canada Fund provides some infrastructure support, it is not enough to address aging infrastructure challenges that threaten Ontario's long-term prosperity. A significant investment in infrastructure would also support crucial economic activity that will need manufactured inputs.

» Federal, provincial and municipal governments should continue to explore opportunities to leverage private capital and innovative financing tools to bring additional funds to the transit and infrastructure tables.

Participation in Free Trade Agreements

Canada's participation in a growing number of international trade agreements is a useful platform from which manufacturers can increase exports. But the trade agreements are not enough. Firms must seek out more trading opportunities globally and reduce their dependency on the United States. Increased competitive pressure will be helpful for Canadian manufacturers.

» The federal government should continue ongoing trade negotiations with regions such as the EU, India, China and Korea as well as the Trans-Pacific Partnership (TPP) and work to finalize these.

» Expand access to capital for small firms through initiatives such as the partnership between the Export Development Corporation and Canadian Manufacturers and Exporters to offer smaller manufacturing firms a credit insurance policy. Allowing small firms to access the kind of insurance that large firms are offered should increase the protection against non-payments by clients, minimize risk, increase working capital and encourage more SMEs to explore exporting to new markets. This new initiative should be monitored and evaluated to see how it can be improved or expanded.

» As part of ongoing Canadian-US regulatory cooperation initiatives (Beyond the Border and the Regulatory Cooperation Council), create a new Provincial-State Regulatory Caucus to help contribute to public understanding of why differences in regulation matter and

to help focus efforts on areas where harmonization at the sub-national level are possible. Underneath the umbrella of these federal processes, state-provincial work could be focused on manufacturing standards.

» A number of ongoing efforts are important and need to be undertaken with increased urgency:

»» The federal government should modernize and clarify the intent of the Net Benefit Test in the Investment Canada Act and its relevant considerations. This should include clarifying guidelines around the participation of State-Owned Enterprise in investments in Canada (Assaf and McGillis 2013).

»» Continue to lower inter-provincial trade barriers, increase labour mobility and improve credential-recognition to address issues of skill shortages in some manufacturing industries.

»» Encourage partnerships between Central Canadian manufacturers and those with demands for products in the resource sector.

Supportive Economic Ecosystem

Manufacturers in Ontario have a supportive economic ecosystem, which includes professional and business service firms, access to capital, a legacy of manufacturing expertise and many successful clusters in a wide array of sub-sectors. Manufacturers looking for ICT support, asset management advice, a government that understands the importance of manufacturing, or potential partners in most sub-sectors can find them in Ontario. Additional steps could also be taken to further improve the current ecosystem.

» The federal and Ontario governments should re-examine business development programs with an eye towards realignment and collaboration. This could be undertaken through a process of both vertical and horizontal program review within and between both governments. Outcomes would include strategically supporting successful sectors and clusters, adopting place-based economic and community development strategies and investing political capital in supporting anchor firms (Johal et al. 2013, Bradford and Wolfe 2010).

» If this alignment moves forward, it will be possible to streamline business financing resources into one central source. Although headway has been made in creating an online portal for advisory services and sources of information and financing support, these resources are fragmented and lack visibility. Multi-level government collaboration is critical to streamline all resources into one recognizable outlet and brand, similar to the successful transactional service delivery, Service Canada and Service Ontario.

» Create an innovation hub similar to the Boston Bolt, which provides a launch pad for innovative manufacturing hardware start-ups. The facility would help address scalability issues for manufacturing start-ups to commercialize their products by providing 24/7 access to in-house prototyping equipment and capital. This facility would likely be self-financing after an initial start-up phase, which could be funded by the recently announced federal Advanced Manufacturing Fund.

Skilled Workforce

Ontario's workforce is a huge comparative advantage. Skilled labour will be crucial to success in the next generation of manufacturing. Workers will need sophisticated training. We have a great foundation, but we need to do more.

» Ontario manufacturers pay high Employment Insurance premiums to support job training programs. A significant majority of these funds go to support workers outside Ontario rather than inside. The most important change that governments can implement to improve access to skilled labour in Ontario is to develop a real national human capital strategy that would include a reduction in EI premiums directed toward supporting training, accompanied by a revenue neutral increase in general revenue funding for training for those who are not eligible for EI. This would significantly increase the available pool of funds for Ontario manufacturers. Increased funding for training from general revenues could be paid for by a payroll tax supplement that replaces part of the employer's EI premium for training.

» Vocational and workplace training should be encouraged through the use of "contract clauses". These contractual agreements provide commitments from employees that they would return to the same firm following employer-funded training—or reimburse the employer for the training. This would help minimize uncertainty and risk for employers who are apprehensive about investing in employee training.

» The federal government should develop credible alternatives to the Canada Job Grant proposal that would ensure appropriate skills training for Canadians and engage employers. Some potential alternatives include a federal training tax credit or a skills grant.

» The Ontario Government should work with the private sector to promote entrepreneurship in the education system. This could include building an entrepreneurship focus in the Specialist High Skills Major program curricula in Ontario, providing all teachers and guidance counselors with an entrepreneur "toolkit" to assist youth in their entrepreneurial ideas and aspirations, and including an entrepreneurship section in the Grade 10 Career Studies course (Jobs and Prosperity Council 2012).

» Private sector firms and colleges should collaborate more closely on particular skills. Experiential learning is important for equipping students with up-to-date workplace skills and business must play a bigger role in offering more co-ops, work placements and apprenticeships for Ontario students (Jobs and Prosperity Council 2012). This should include training students on computer assisted fabrication processes and preparing them for the "Internet of Things" movement and other cyber-physical systems.

» The Ontario government should place more emphasis on skilled trades in a variety of ways, including for example, by increasing the effectiveness of local Business-Education Councils so that students better understand the skilled trades, by reducing journeyperson-to-apprentice ratios, and by increasing the number of compulsory trades (Jobs and Prosperity Council 2012, Institute for Competitiveness and Prosperity 2013).

» The federal government should simplify access to information on job candidates for employers by providing a 'one-stop-shop' service. This could involve building out from the EI Universal Job Board and making it more widely available. This would help smaller manufacturing firms who often lack the capacity or resources to draw the necessary talent to be competitive in the industry.

» The federal government should hasten existing efforts to fast-track credential assessments as part of the immigration process (including instructing new immigrants about these processes prior to their departure from their home countries); and harmonize certification of professions vital to manufacturing across Canada and US jurisdictions.

Existing Cost Advantages

Ontario's labour costs are very competitive at higher ends of the value chain and in high productivity sub-sectors—areas we have argued are key to Ontario's manufacturing future. These competitive labour costs must be maintained.

Debates about the cost of energy in Ontario have become highly political. We will not weigh in on those debates. What we would highlight, however, is that costs of production could be brought down if manufacturers use less energy. Our research has shown that Ontario manufacturers are less energy-efficient than our peer jurisdictions. Policy must encourage this to change.

» Governments should increase supports for energy efficiency investments using the tax system or alternative vehicles, such as Green Bonds.

» Canada could boost energy efficiency through the adoption of a carbon rebate. This rebate would take a two-pronged approach, combining the UK carbon model and the accelerated depreciation mechanism similar to the Dutch VAMIL or EIA approach. Those firms that were able to bring down their carbon and energy usage would see a reduction in their tax bill. Unlike a carbon tax, where those who use energy inefficiently must pay more, a carbon rebate allows those who increase their efficiency to pay less.

Recommendations: Ontario's Foundational Advantages

Canada is, simply put, a very attractive place to invest. Canada has an enormously attractive value proposition tied to its foundational advantages, such as stability, prosperity and quality of life. Unlike in the previous section, where we outlined many detailed policy recommendations, this section contains few specific recommendations. What we do, however, is highlight the many attractive qualities that Canada offers current and potential investors in an effort to remind readers and policy-makers that these should not be overlooked.

Economic and Political Stability

Canada's position on the World Bank's global 'Ease of Doing Business' indicators has generally been among the best in the world. In recent years, our standing has been falling. In addition, for the past five years Canada has been slipping in the global corruption standing. In the recently published Corruption Perception Index, Canada fell from 6th place to 10th place, displaying its worst ranking in five years. This is a serious problem and governments should increase their efforts to ensure that Canada's reputation as a safe, trustworthy, and predictable place in which to invest does not erode further.

Governments should continue their focus on initiatives to improve regulatory predictability and certainty (e.g., increased transparency regarding cost-benefit analysis of regulatory proposals, predictable enactment dates for regulations), and also renew efforts to identify areas for regulatory harmonization and reduction of overlap and duplication, both from a regulatory development and enforcement perspective.

Canada should continue efforts to become a leading jurisdiction where companies can create and control their own IP—and know that protections will be enforced.

High Regulatory and Safety Standards

Although regulatory standards are sometimes a source of complaint for some manufacturers, they also provide an enormous brand advantage for others. The Canada brand is meaningful and valuable. Canada has an enormous opportunity to take advantage of our reputation and offer goods to the world. To an emerging global middle class looking to purchase new processed food stuffs or other products, "Canada" is a safe, trustworthy, healthy brand. The consequences of losing Canada's reputation for very high environmental and food-safety standards would be dire. And reputation, once lost, is difficult to regain.

Some steps to protect our brand and enhance our reputation could include:

» Developing world leading health or safety standards for a variety of products.

» Strengthening rather than weakening environmental, worker and consumer protections—and marketing these strengthened standards as comparative advantages.

» Canadian firms applying higher safety and health standards across their assembly plants, including those in countries where protections are weaker.

High Quality of Life

For an investor thinking of establishing a new sophisticated manufacturing operation in a community, Ontario communities offer a great deal. For European or Asian firms, relocating managerial and executive personnel to Ontario—as opposed to many of our competitors—is very appealing.

Safe communities, access to health care, good quality public schools, liveable cities, breathable air, diverse populations—these should not be underestimated when encouraging a firm to locate a new operation in Ontario. As such, investments in public transit, public safety, education and other social services are in fact investments in our economic value proposition.

Diversity and Diaspora Networks

As we know, the global economy is undergoing a re-balancing, with the rise of emerging economies and new structural economic challenges in OECD countries, including Canada. Diaspora networks–that is, international communities of shared identity–provide Canada with an enormous potential to pivot toward emerging economies in our trade relations.

Diaspora networks are playing a larger role in the global economy. Recognizing and acting on this trend should be part of a thoughtful policy response to the shifts in the manufacturing sector. Given Canada's successful history with diversity and accommodation and the high concentration of immigrants in Ontario, the province is well-placed to become a centre for global manufacturing.

The policy agenda is clear. Ontario needs more economic class immigrants, quicker recognition of skills and credentials, increasing the number of international students and more bridge training. The private sector needs to do a better job leveraging diverse talent. The Mowat Centre outlined actions that governments and the private sector could take in an earlier publication (Tan and Bitran 2013) and we will not repeat that agenda here. But what should be highlighted is that Canada is a Diaspora Nation and this is an advantage in the new world of global manufacturing.

Conclusion

The manufacturing sector in Ontario is at an important crossroads. There is great turmoil in the global manufacturing sector and many Ontario communities and firms have experienced the discomfort of this profound change. Many of the province's traditional advantages are gone. Some public commentary has suggested that manufacturing is either not important or that Ontario cannot compete. Our research suggests neither of these two speculations is well-founded. Ontario has many comparative advantages and manufacturing produces more positive spillovers for the rest of the economy than other sectors.

The sector is changing—and needs to continue to change if it is going to continue to be a source of prosperity for the country and economic opportunity for individual Canadians. Simply retaining what we have or protecting firms and sectors that cannot compete is not a pathway to success. But neither is abandoning manufacturing an attractive option.

Governments and the private sector need to appreciate, invest in, and steward our comparative advantages. A sustained, strategic focus by government is necessary. Ontario has a great deal to offer—including a competitive tax environment and a skilled workforce—but these are not enough. This paper has mapped out what governments and the private sector need to do to ensure that the manufacturing sector continues to provide prosperity and economic opportunity to many communities and people in Ontario.

Federal leadership and engagement is necessary. The Ontario manufacturing sector represents 46 per cent of Canadian manufacturing. This isn't just an Ontario issue—it has national implications, and successive federal governments have failed to develop an advanced manufacturing strategy for the country.

The goals for government are clear: increase productivity and innovation within the sector so that firms can grow larger and be more successful global exporters. Encouraging investments in Machinery & Equipment, ICT, Research & Development and job training is crucial. These actions must be taken while protecting and building on Ontario's attractive value proposition and many comparative advantages.

We are at a moment of historic global change and Ontario manufacturers are facing an existential threat. For many, their traditional business models have been made obsolete. For many, their traditional advantages have eroded. They are beginning to pivot towards the world. Most are adapting but it is part of government's job to help support this historic realignment. This document has outlined how such strategic support can be deployed.

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