





# THE FUTURE OF CANADIAN MANUFACTURING: LEARNING FROM LEADING FIRMS

Public Policies to Support  
Advanced Manufacturing

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# PUBLIC POLICIES TO SUPPORT ADVANCED MANUFACTURING

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In this study we summarize and review leading firms' recommendations about how government policies and programs either support or hinder advanced manufacturing.

Given the valued added by advanced manufacturing firms to economies, it is not surprising that competition among jurisdictions is sometimes fierce. A great number of support programs exist; however, it is not obvious, *a priori*, which programs actually succeed in effectively supporting advanced manufacturing. For that reason, in the structured interviews we asked firms to look across the jurisdictions in which they operate and to outline which government policies and programs were most noteworthy.

In the case of the auto parts firms, we focused on policies and programs in Canada, the United States, Mexico, Germany, Eastern Europe and Brazil. In the case of agri-food firms, we focused on policies and programs in Canada, and to a lesser extent the United States and other countries.

In the case of the other sector-leading firms, we focused on policies and programs in Canada (Canada Goose), the United States, Latin America (Shawcor) and China (Mega Brands). We used the information we gathered in the structured interviews to inform our research by helping us understand the policies and programs in the relevant jurisdictions.

## GENERAL POLICIES AND PROGRAMS SUPPORTING ADVANCED MANUFACTURING

Several themes emerged when leading firms discussed general policies and programs to support advanced manufacturing. We group the themes under five headings: taxation, investment support, skilled labour, infrastructure and trade.

Canada's low general level of taxation was consistently highlighted as an important factor by the firms interviewed. In one case, a firm argued that Canada's lower general taxation was sufficient to offset advantages like lower wages and energy costs possessed by competing U.S. jurisdictions (Table 1).

**TABLE 1 – COMPARING CANADA'S GENERAL LEVEL OF TAXATION WITH OTHER OECD COUNTRIES**

*KPMG Corporate Tax Rates Table*

LOCATION	2011	2012	2013
<b>Canada</b>	28.0	26.0	26.0
<b>United States</b>	40.0	40.0	40.0
<b>China</b>	25.0	25.0	25.0
<b>Germany</b>	29.4	29.5	29.6
<b>India</b>	32.4	32.5	33.9
<b>Korea, Rep. of</b>	22.0	24.2	24.2
<b>Brazil</b>	34.0	34.0	34.0
<b>Singapore</b>	17.0	17.0	17.0
<b>Japan</b>	40.7	38.0	38.0
<b>Mexico</b>	30.0	30.0	30.0
<b>United Kingdom</b>	26.0	24.0	23.0
<b>Australia</b>	30.0	30.0	30.0
<b>OECD Average</b>	24.5	24.4	24.1

The competition for manufacturing jobs among jurisdictions is intense and takes many forms. Canada received high marks from leading firms for programs that provide for duty-free imports of machinery and equipment, and accelerated depreciation.

A number of leading firms make use of the federal government's SR&ED tax credit; although it is not always the deciding factor in going forward on a project, it helps to reduce the cost and risk associated with R&D projects and improves the internal rate of return in capital allocation decisions. Many of Canada's global competitors offer tax-related programs in support of innovation.

In addition to tax-related programs, some jurisdictions, often at the sub-national level, offer direct grants to support the location and upgrading of manufacturing plants. The importance of such grants depends on the specific sector and leading firms weigh these grants against a range of other factors in making location and upgrading decisions. While Canadian jurisdictions offer some assistance of this kind, Canada is not a leader in this area.

Several firms made reference to the quality and availability of skilled labour as one of the key strengths of Canadian manufacturing. The contribution of skilled and industrious immigrants was cited repeatedly as an important element of success. Thus, an immigration program that encouraged a continued flow of skilled workers was deemed essential to Canada. This contrasted sharply with some of Canada's North American competitors, where leading firms say basic skills and strong work ethic are lacking.

Concerns were expressed by several leading firms regarding the future supply of skilled labour for advanced manufacturing in Canada. In part, this concern is related to the availability of appropriate training. More fundamentally, it requires exposing young people to manufacturing job opportunities and helping them choose the training that will prepare them to excel.

Most firms raised some element of Canada's infrastructure assets in the discussion on competitive environment. Logistics infrastructure is critical and truck and rail transportation are important links in firms' supply chains. What was perceived as deteriorating rail service was noted in a number of interviews. For firms located in or near the Greater Toronto and Hamilton Area (GTHA), highway congestion was a key concern. A related concern had to do with border crossings to the United States. While firms generally applauded governments' efforts to streamline border crossings, they argued that much work remains to be done. For southern Ontario firms, the construction of the Detroit River International Crossing (DRIC) was a top priority.

Good energy infrastructure is a key requirement for advanced manufacturers and this point was underlined in a number of interviews. Quebec was seen as having excellent energy infrastructure and low cost power. While Ontario power costs are not the most important cost factor to most advanced manufacturers, a number of concerns were raised regarding rising costs in Ontario and government's use of the rate base to accomplish environmental goals, rather than paying for them directly. Leaders frequently mentioned unfavourable comparisons with energy costs in U.S. locations as a growing concern.

All of the firms in the study are substantial exporters, and in some cases importers of production inputs. Not surprisingly, most interviews touched on the need for continued focus on an expanding set of free trade arrangements with potential customers. It was noted that Canada had fallen behind in the completion of bilateral trade agreements relative to competitors like Mexico. Such agreements can weigh heavily in location decisions by firms and thus are a valuable source of competitive advantage.

## SECTOR-SPECIFIC RESPONSES – AUTO PARTS

Leading firms in the auto parts sector were generally strongly supportive of Canadian federal and provincial tax measures that provide low general rates and specific support for investment in machinery and equipment, and R&D for manufacturing firms. They acknowledged that this was a source of competitive advantage for Canada.

However, Canada is not alone in offering investment and R&D support. For example, Hungary provides an 80 per cent exemption from corporate income tax based on the value of investment and jobs created in the country. Poland is using tax-exempt zones to attract manufacturing investment. Michigan has also created 'Tax-free Renaissance Zones,' where manufacturing firms are virtually free of all state and local taxes for up to 15 years.

By far the most important factor when deciding on location for auto parts firms is the location of assembly plants. With the adoption of lean manufacturing, auto assemblers generally want their suppliers to be within 50 miles of the assembly plant (and preferably closer) in order to minimize the risk of disruption to assembly processes. This, in turn, makes the attraction of assembly mandates a key factor in the location of parts makers. The competition among jurisdictions for these mandates is fierce and Canada must win the competition if the country's auto parts sector is to thrive.

Winning the competition for assembly plants will require superior performance in three areas: government subsidies; coordinated responses across federal, provincial and local governments; and flexible, highly productive labour arrangements, wherein the risks and rewards of success are shared between workers and firms.

With respect to coordination of response across federal, provincial/state and local governments, ProMexico was cited as a best-in-class example. With respect to trade, firms in this sector made specific reference to the value of the Export Development Canada Tooling Finance Program, which provides financing, administrative support and information to firms aiming to export high-value-added equipment like the tooling that is essential to auto parts makers.

Mexico also provides valuable support to companies seeking to manufacture for export. For example, the ALTEX program supports firms by lessening administrative requirements, and reducing taxes and duties for exporters. Similar support is given to imports of machinery and inputs that contribute to manufacturing for export. Together with its large and growing number of free trade agreements, Mexico has become an attractive location for export-oriented manufacturing.

## SECTOR SPECIFIC RESPONSES – AGRIFOOD

In the agri-food sector, the key to global competitiveness is productivity. Improvements are being achieved through scale, and new technology (robotics, automation) and systems. Leading firms pointed to Canada's accelerated capital cost allowance (CCA) and the elimination of important duties on machinery and equipment as critical elements of government support to this sector. The strong Canadian dollar also makes investment in foreign-made machinery and equipment attractive.

Many Canadian plants are too old and too small. Achieving global competitiveness requires investments in facilities upgrading, technology and new systems. There are relatively few programs for upgrading facilities and the small scale of Canadian food manufacturing plants will continue to challenge the industry.

In addition, firms cited Alberta's Agri-Business Automation and Lean Manufacturing Fund, which covers up to 50 per cent of the costs involved in process automation, improvement and technology adaptation. This targeted program provides a simpler avenue for agri-food firms to access support than other, general-purpose programs.

Canada does not have a federal program targeted at improving automation in the agri-food sector. Automation is seen as a way of making Canadian firms more competitive with lower-wage jurisdictions through increasing the productivity of Canadian workers and, in some cases, reducing waste and improving quality. Labour comprises approximately 11 per cent of total production costs.

In the area of R&D, leading firms in agri-food make extensive use of the federal SR&ED tax credit, and believe it compares favorably with support offered in competing jurisdictions. This is important because product and process innovation are key areas of competition in the sector. Canada is fortunate to have a number of R&D centres dedicated to food product testing and development.



An example that enjoys an international reputation is the Richardson Centre for Functional Foods and Nutraceuticals in Manitoba. Firms used programs like the Agri-Innovation Program as providing support for bringing new technologies and products to market.

With growth and changes to the agri-food industry, the size and skills of the labour force are changing. Firms across Canada are using foreign worker programs to broaden skill sets. Foreign worker programs are also seen as an important element in meeting labour requirements in regions like Alberta and Saskatchewan. They use provincial nomination programs to accelerate immigration process and temporary worker programs to fill short term needs at relatively low cost. However, this is becoming controversial. Firms cited the need for more apprenticeship programs to fill the skilled labour needs in the future.

## **SECTOR SPECIFIC RESPONSES – DIVERSIFIED MANUFACTURING**

Firms in this sector cited Canada's low general corporate tax rate as a significant source of competitive advantage. However, Canada does face stiff competition in the area of location incentives — especially in terms of property ownership subsidies and property tax relief.

With respect to skilled labour, firms commented that access to a skilled, highly motivated immigrant population is critical and a reason to stay in Canada despite attractive employment incentives in other jurisdictions. Furthermore, close proximity to universities and colleges in Canada gives some firms access to a large, well-trained talent pool. However, firms also argued that the education system could do more to equip students for careers in manufacturing with additional skills and leadership training.

Firms were also significant users of the SR&ED tax credit to support the R&D that is a major contributor to their competitive advantage. They felt that Canadian support programs for manufacturing could benefit from more clarity and transparency so that firms did not waste effort on programs that they later find they are ineligible for.

Finally, firms identified that trade agreements with the European Union and Asian countries such as China and Japan would provide better access to growing markets where supply has been suppressed by high transaction costs.

## AREAS OF CONSENSUS

Looking across sectors we see a substantial degree of consensus among leading firms, both on where Canada stands relative to its competitors and on areas of strength and concern.

All leading firms pointed to Canada's low general rate of corporate taxation as a source of competitive strength, and noted the contribution made by accelerated CCA and duty-free importation of machinery and equipment to promoting investment in productive capacity in Canada.

Canada is not a leader, however, in location-specific incentives for manufacturing firms, and this is potentially quite important — indeed critical in the case of the auto assemblers that auto parts firms serve.

Leading firms were significant users of the SR&ED tax credit and argued that it encouraged competitiveness both in enhancing R&D and with respect to its location in Canada. Conversely, Canada was not seen as a best-practice example of coordination between federal, provincial and local governments in attracting manufacturing mandates, with Mexico being held up as a successful example.

Skilled, industrious workers were counted as an important source of competitive advantage in Canada. Firms pointed to the role that has been traditionally played by immigration in strengthening Canada's labour force. However, firms expressed concern about the future supply of skilled labour and argued that more needs to be done to attract young people to manufacturing careers and to equip them with the necessary technical and business skills.

Logistics has been a traditional source of competitive advantage for Canada. However, leading firms expressed concerns in three areas. Congestion in the GTHA was cited as a growing problem, especially for auto parts makers. Secondly, firms pointed to a perceived deterioration in rail transport as a growing problem. Thirdly, firms underlined the need to keep border crossings operating efficiently, despite the security concerns that have surfaced in the aftermath of 9/11.

Finally, Canada's performance in negotiating trade agreements relative to competitors like Mexico was noted as an area of concern and loss of competitive advantage.

# ABOUT THE AUTHORS



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Paul Boothe is Director of the Lawrence National Centre for Policy and Management. His work experience has included university research and teaching, independent consulting to Canadian and international

organizations, and serving as a senior public servant in Canada's provincial and federal governments. At the provincial level, he served as Saskatchewan's Deputy Minister of Finance and Secretary to Treasury Board. At the federal level, his appointments included Associate Deputy Minister of Finance and G7 Deputy, Senior Associate Deputy Minister of Industry and, most recently, Deputy Minister of the Environment.



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Richard Dicerni served as Deputy Minister of Industry Canada from 2006 to 2012. He started his career with the federal government in 1969. In the 1970s and 1980s, he held executive positions in the federal public service,

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In 1996, he was appointed President and CEO of the newly established Canadian Newspaper Association. He left this position in 1998 to become Senior Vice President at Ontario Power Generation (OPG) and led the company between 2003 and 2005. Prior to rejoining the Canadian government, he was a partner at Mercer Delta, a management consulting firm. He has served on the boards of Trent University, Credit Valley Hospital, Atomic Energy of Canada Ltd. (AECL) and the Public Policy Forum.

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The Centre was established in 2001 with a generous gift from Canadian businessman, Jack Lawrence, HBA '56, who was a strong proponent of business playing an active role in Canadian public policy.

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