

RESEARCH REPORT

The Changing Global Market for Atlantic Manufacturing

December 2015



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The Changing Global Market for Atlantic Manufacturing

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Abbreviations

CETA: Canada-EU Comprehensive Economic and Trade Agreement

EU: European Union

GDP: Gross domestic product

NAICS: North American Industry Classification System

R&D: Research and development

SEPH: Survey of Employment, Payrolls and Hours

Executive Summary

Atlantic Canada's manufacturing sector remains an important contributor to the region's economy. In 2013, this sector sold more than \$37 billion worth of goods, directly contributing almost 7% of the region's GDP (a standard measure of the total value added or net output produced in an economy). About 76,000 workers were employed in almost 4,000 manufacturing plants across the region. Most importantly, manufacturers account for more than 60% of Atlantic Canada's international exports. With a modestly growing domestic economy, the manufacturing sector therefore remains one of the key potential drivers of growth as manufacturers expand into global markets.

In terms of export activity, Atlantic Canada's manufacturing sector is focused on a number of key products (defined in this report as 'large exporters'): refined petroleum, seafood products, forest products, motor vehicle tires, and fruit and vegetable products. Other smaller but important manufacturing industries (defined in this report as 'mid-size export industries') include machinery and equipment, metal products, chemicals and pharmaceuticals, plastics and aerospace. There are also a number of other manufacturing plants that export including video game machines, other food products, textile products, beer, plasterboard and furniture.

Aggregate data show that Atlantic manufacturing firms are smaller than nationally, with exports per plant about 30% lower. Atlantic plants also tend to have lower productivity (measured in terms of output per hour worked), are less likely to innovate and adopt advanced technology, and are less likely to export or be otherwise involved in global business activities.

These performance indicators point to challenges in expanding the region's global reach. A lack of innovation contributes to low productivity and a lack of competitiveness, impeding the ability to succeed in global markets, thereby constraining firm size and the capacity to invest in R&D, market development and other business activities. These indicators may also reflect the business strategy adopted by manufacturers in the region, which are more likely to compete on cost rather than on the positioning of their product within the market. As a result, Atlantic manufacturers are much less responsive to customer requirements.

Despite these aggregate statistics, the region does have a number of firms that are successfully penetrating global value chains. They have repositioned their business and differentiated themselves in global markets through their proprietary technology, specialized competencies or superior quality of their products (e.g. more durable products, better environmental characteristics or faster turnaround). These firms are

continually innovating, investing in R&D or machinery and equipment, and making sure they stay in touch with the latest market trends.

Atlantic manufacturers as a whole have faced a challenging period over the last decade. Output has declined, with a consequent drop in employment and the number of plants. The global recession of 2008/2009 accentuated this decline, but even with a recovery in some indicators in 2010, output (real GDP) in 2013 was still more than 10% below 2004 levels, employment was 24% lower and the number of plants has shrunk by about 30%.

Although the decline in manufacturing has affected producers across the country, on many indicators it has been more severe in the Atlantic provinces, due to the region's greater dependence on two hard-hit industries – forest and seafood products. The lack of a large forest products industry insulated Prince Edward Island from the contraction of this industry, while its exports grew between 2004 and 2013, in large part due to rapid gains in its aerospace and bioscience industries.

The challenges that have faced Atlantic manufacturers are well known. The almost 60% appreciation of the Canadian dollar between 2002 and 2011 impeded the competitiveness of manufacturers; while some firms were able to adjust, others were not. The higher Canadian dollar compounded increasing competitive pressures arising from rising competition from larger and low cost producers and higher energy costs. Weak demand for key products such as lumber and newsprint also played a key role in the decline of specific manufacturing industries. These challenges have not gone away; the depreciation of the Canadian dollar during the second half of 2014, in large part due to a steep drop in global oil prices, still left the average exchange rate in December over 35% higher than in 2002.

In terms of export growth sectors, the value of Atlantic exports of refined petroleum have expanded over the last decade but this is largely due to price changes. Michelin has expanded the production and exports from its three Nova Scotia tire plants over the last decade although it is eliminating most tire production at its Granton facility. This growth partly reflects new investments to modernize production and the introduction of new product lines. It is really the mid-size export industries that have had the best export performance over the last decade with gains in machinery and equipment, metal products, chemicals and pharmaceuticals and aerospace.

Atlantic manufacturing exports (excluding refined petroleum) reached a peak in 2000 and have declined since 2004. Strong export gains during the 1990s was almost exclusively due to growth in the US market, with US exports tripling in value to \$7.6 billion. Similarly, the decline since 2004 has been driven by falling sales in the US, which

remain below \$6 billion. A decade of modest increases helped boost exports to non-US markets from \$2 billion per year in the late 1990s to an average \$2.4 billion since 2007. However, there has been no net growth since that time.

Atlantic Canada's share of exports to the EU (excluding refined petroleum) fell from over 20% in the early 1990s to about 10% in the mid-1990s, due to the rapid increase in exports to the US. The share of Atlantic exports to the EU fluctuated around 10% until 2010 but has since fallen to 7.4%, its lowest share in more than two decades, largely because of a drop in the value of EU exports. Atlantic Canada has traditionally had a higher share of exports to the EU than Canada, but this gap has diminished considerably in recent years; Canada's share of exports to the EU was 6.1% in 2013.

Atlantic exports of refined petroleum to the EU have also increased in recent years. Although large in value terms, the EU accounts for less than 5% of Atlantic Canada's exports of refined petroleum with the US still the dominant market. Aside from refined petroleum, seafood products account for the largest share of Atlantic exports to the EU, valued at \$270 million in 2013. Atlantic firms exported \$46 million of processed fruit and vegetables to the EU in 2013, representing almost 9% of this industry's exports. This largely consisted of frozen blueberries from Nova Scotia. Atlantic exports of wood products (mainly wood pellets) to the EU amounted to \$35 million in 2013, about 6% of total exports from that industry.

In terms of mid-sized export industries, machinery exports to the EU amounted to \$74 million in 2013, led by firms in Nova Scotia. Aerospace exports were also important across the region, amounting to \$27 million (20% of the industry's exports). Chemical and pharmaceutical exports to the EU, largely from Prince Edward Island, were worth \$25 million in 2013.

The EU economy has struggled to recover from the 2008/2009 global recession and the ensuing sovereign debt crisis. It remains to be seen whether the implementation of the CETA will lead to greater interest in the EU on the part of Atlantic exporters. APEC's accompanying reports examine in more detail the broader opportunities in the EU and the opportunities for specific manufacturing industries identified in this report.

Chapter 1

Introduction

This report provides a brief profile of Atlantic Canada's manufacturing sector, focusing on its global reach. Despite a significant contraction in the size of the sector since 2004, the report notes the continued importance of manufacturing to the region's economy, particularly as a source of export revenues.

In order to grow, Atlantic manufacturers must be globally competitive. The report compares the performance of Atlantic manufacturers on several key indicators that are important for success in global markets and identifies which manufacturing industries are experiencing growth. It also analyses the current global market focus of the region's leading exports, paying particular attention to the role of the EU market.

The analysis in this report is also intended to provide the foundation for a closer examination of opportunities for Atlantic manufacturers in the EU, particularly in light of the expected implementation of the Canada-EU Comprehensive Economic and Trade Agreement (CETA). It identifies the key Atlantic industries that will be examined to assess the potential for growth in the EU market.

This report is organized as follows:

Chapter 2 provides a brief profile of Atlantic Canada's manufacturing sector, highlighting its continued importance to the region's economy. It identifies the leading exports of the sector and assesses its competitiveness relative to Canadian benchmarks.

Chapter 3 examines the decline in the region's manufacturing sector over the last decade, highlighting some of the key characteristics that will be important for future growth, and identifying the industries that are experiencing growth in global exports.

Chapter 4 analyses the global market focus of Atlantic manufacturers, focusing on the current role of the EU market.

Based on the preceding analysis, Chapter 5 identifies the industries that merit further examination in terms of potential opportunities in the EU market.

Chapter 2

A Brief Profile of Atlantic Manufacturing

Chapter Summary

- The manufacturing sector remains an important contributor to Atlantic Canada's economy, accounting for more than 10% of GDP and 12% of employment when the indirect impacts of the industry are included.
- The most important role played by the manufacturing sector is as the region's leading source of exports, accounting for more than 60% of Atlantic Canada's international revenues.
- The leading exports from the region's manufacturers are: refined petroleum, seafood products, forest products, motor vehicle tires, and fruit and vegetable products. Other smaller export industries include machinery and equipment, metal products, chemicals and pharmaceuticals, plastics and aerospace.
- While the composition of Atlantic manufacturing is different than nationally, aggregate data show that Atlantic manufacturers are smaller, with lower productivity, are less likely to innovate and adopt advanced technology, and are less likely to export or be otherwise involved in global business activities.

This chapter provides a brief profile of Atlantic Canada's manufacturing sector, highlighting its continued importance to the region's economy, the key manufacturing industries that are globally focused, and providing an assessment of how the region's manufacturing industry performs relative to Canada.

2.1 The Importance of Atlantic Manufacturing

Atlantic Canada's manufacturing sector remains an important contributor to the region's economy. In 2013, this sector sold more than \$37 billion worth of goods, directly contributing almost 7% of the region's GDP (a standard measure of the total value added or net output produced in an economy). About 76,000 workers were employed in almost 4,000 manufacturing plants across the region. In the Maritime provinces average earnings in manufacturing are about 11% above the all-industry average, indicating that overall these are well-paying jobs.¹

¹ In Newfoundland and Labrador high earnings in the oil and mining industry push up overall earnings so average weekly earnings in manufacturing are on par with the all-industry average.

Most importantly, manufacturers account for more than 60% of Atlantic Canada's international exports (and 68% of its exports of goods). With a modestly growing domestic economy, the manufacturing sector therefore remains one of the key potential drivers of growth as manufacturers expand into global markets.

Table 2.1 Manufacturing is An Important Part of Atlantic Canada's Economy

Manufacturing size, 2013 (\$ billions, unless otherwise indicated)

	CA	ATL	NL	PE	NS	NB
GDP	198.8	7.6	1.0	0.5	2.9	3.2
<i>Man. share of total economy (%)</i>	<i>10.5</i>	<i>6.8</i>	<i>2.7</i>	<i>8.4</i>	<i>7.5</i>	<i>10.1</i>
International exports	275.5	21.4	4.2	0.6	3.3	13.2
<i>Man. share of total economy (%)¹</i>	<i>52</i>	<i>61</i>	<i>34</i>	<i>49</i>	<i>63</i>	<i>85</i>
Employment (thousands) ²	1,486.0	75.8	11.2	4.9	30.6	29.1
<i>Man. share of total economy (%)</i>	<i>9.6</i>	<i>7.7</i>	<i>5.2</i>	<i>7.8</i>	<i>7.6</i>	<i>9.5</i>
Wages and Salaries	90.0	3.6	0.5	0.2	1.6	1.3
<i>Man. share of total economy (%)</i>	<i>10.9</i>	<i>7.9</i>	<i>4.3</i>	<i>7.1</i>	<i>9.1</i>	<i>9.4</i>
Plants (number)	85,350	3,900	650	350	1,600	1,300
<i>Man. share of total economy (%)</i>	<i>3.2</i>	<i>2.7</i>	<i>2.3</i>	<i>2.9</i>	<i>2.8</i>	<i>2.9</i>
Sales	590.4	37.5	6.3	1.5	9.5	20.3

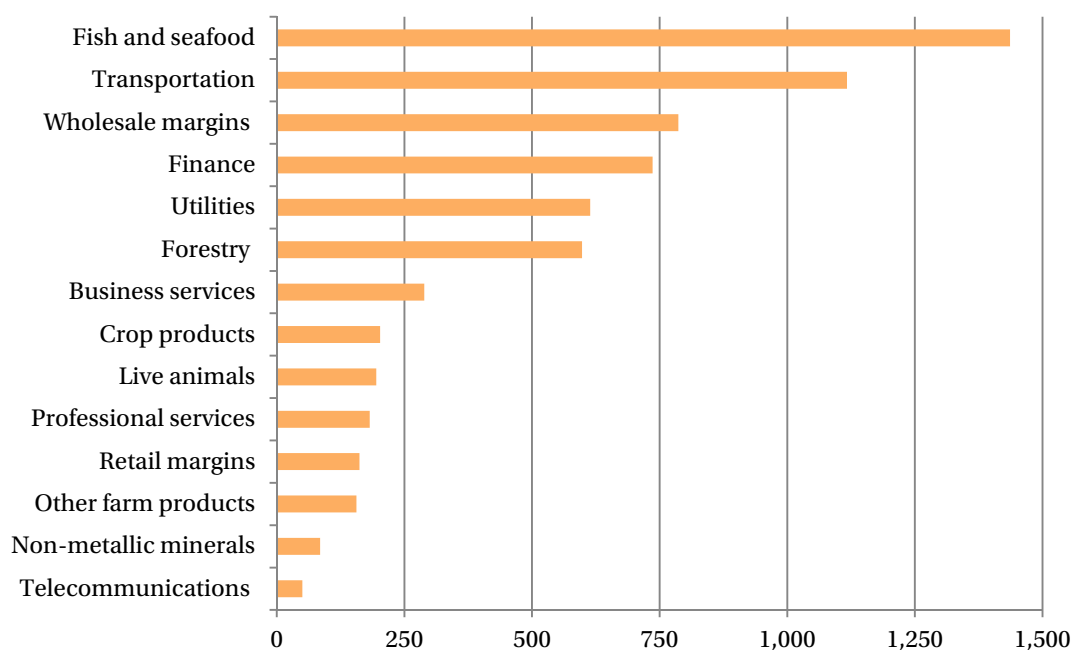
Note: 1. Share of total international exports of goods and services. 2. Based on the Survey of Employment, Payrolls and Hours (SEPH).
Source: Statistics Canada, Trade Data Online, APEC

Within the Atlantic region, New Brunswick is the most dependent on the manufacturing sector, where it represents 10% of GDP. The province still has the largest manufacturing sector in terms of output, but is closely followed by Nova Scotia. Though much smaller, Prince Edward Island's economy is quite dependent on manufacturing, accounting for 8.4% of its total industry output. Manufacturing is much less important in Newfoundland and Labrador, in large part due to its large mining and oil industries.

The manufacturing sector's importance goes beyond its direct impact. Purchases of raw products to be used in processing (including from the fishing, forestry and agricultural industries); purchases of transportation services to move inputs to plants and output to markets; purchases of energy; and purchases of financial, professional and business services mean that the sector's reach touches many other industries. APEC estimates that for every 10 manufacturing jobs, the sector supports six additional jobs in the economy.

Figure 2.1 Manufacturing Sector Impacts a Large Section of the Economy

Indirect impact of Atlantic manufacturing, 2011 (\$ millions)



Source: Statistics Canada, APEC

Table 2.2 Atlantic Manufacturing Supports 10-12% of the Regional Economy

Economic impact of manufacturing, Atlantic Canada, 2013 (\$ billions unless noted)

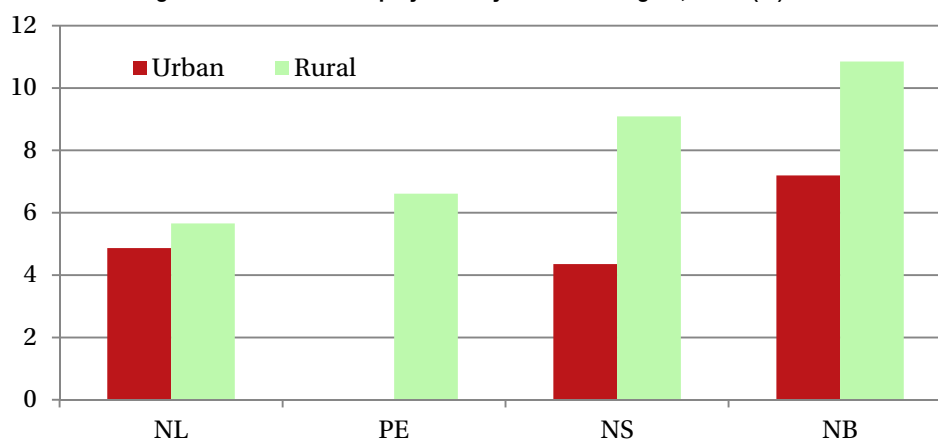
	Direct impact	Indirect impact	Total impact
GDP	7.6	4.0	11.7
<i>Man. share of total economy (%)</i>	6.8	3.6	10.4
Wages and salaries	3.6	1.9	5.5
<i>Man. share of total economy (%)</i>	7.9	4.1	12.0
Employment (thousands)	75.8	45.8	121.5
<i>Man. share of total economy (%)</i>	7.7	4.6	12.3

Source: Statistics Canada, APEC

The manufacturing sector is also particularly important in rural regions, which account for the majority of manufacturing employees (Figure 2.2). The combination of processing and activity in related primary industries (i.e., fishing, forestry and agriculture) means that the sector remains a key source of economic activity in many rural communities.

Figure 2.2 Manufacturing is Particularly Important to Rural Communities

Manufacturing as share of total employment by economic region, 2013 (%)



Source: Statistics Canada, APEC

Note: Prince Edward Island is one economic region in this dataset

2.2 Leading Manufacturing Exporters

In terms of export activity, Atlantic Canada's manufacturing sector is focused on a number of key products (defined in this report as 'large exporters'): refined petroleum, seafood products, forest products, motor vehicle tires, and fruit and vegetable products (Table 2.3). Other smaller but important manufacturing industries (defined in this report as 'mid-size export industries') include machinery and equipment, metal products, chemicals and pharmaceuticals, plastics and aerospace. There are also a number of other manufacturing plants that export including video game machines, other food products, textile products, beer, plasterboard and furniture. Because refined petroleum dominates total Atlantic manufacturing exports, most of the aggregate analysis in this report focuses on manufacturing excluding refined petroleum.

Though large in value, the refined petroleum industry consists of just two refineries, the Irving refinery in Saint John, New Brunswick and the North Atlantic refinery in Come By Chance, Newfoundland and Labrador (recently purchased by SilverRange Financial Partners). Similarly, production of motor vehicle tires are concentrated in the three Michelin plants at Granton, Bridgewater, and Waterville, Nova Scotia.² As a result, the impacts of these industries are largely concentrated in a small number of facilities in their respective provinces.

² Michelin announced in 2014 that it would eliminate most tire production at its Granton plant by mid-2015; the plant will continue to produce a small line of high performance tires.

Table 2.3 Leading Manufacturing Export Industries, Atlantic Canada, 2013

Industry	NAICS	Key products	Exports (\$ millions)	Locations ¹	Employment (000s)
Large Exporters²					
Refined petroleum	3241	Refined petroleum	13,323	32 (2)	2.9
Seafood	3117	Lobster, shrimp, crab, scallops	2,236	431	10.4
Tires	32621	Motor vehicle tires	1,003	12 (3)	3.5 ³
Paper	32212	Supercalendered paper, newsprint	779	8 (3)	< 3.9 ⁴
Pulp	32211	Pulp for textiles, pulp for paper	707	8 (5)	<3.9 ⁴
Wood products	321	Lumber	608	448	8.0
Fruit & vegetables	3114	Frozen french fries, frozen blueberries	532	33	4.0
Mid-Size Export Industries²					
Machinery & equipment	333, 334, 335	Turbo jets, machine parts	521	321	3.5
Metal products	331,332	Lead, wire/rope, structural steel	317	431	5.6
Chemicals & pharmaceuticals	325	Pharmaceutical compounds & diagnostic reagents	226	106	1.6
Plastics	3261	Plastic film, plastic wrap	203	79	2.8
Aerospace	3364	Aerospace parts	134	22	3.4
Other Exporters²					
Miscellaneous manufacturing	339	Gaming machines	138	479	n.a.
Other food	311 excl. 3114, 3117	Miscellaneous food products	133	346	8.2
Textiles	313,314, 315	Paper machine textiles, carpets	94	143	1.9
Beverages	3121	Beer, vodka	67	93	2.1
Gypsum	3274	Plasterboard	30	5	
Other transportation	336 excl. 3364	Motor vehicle parts, armoured vehicles	76	196	3.5
Furniture	337	Furniture parts, wooden furniture	24	250	2.2
All other manufacturing			281	513	8.5
Total Manufacturing	31-33		21,432	3,917	75.8

Notes: 1. The raw location data are based on Statistics Canada's Business Registry but this may not provide an accurate number of the currently producing plants. For some industries (refined petroleum, rubber tires, pulp and paper), APEC has provided the number of known producing plants in parentheses.

2. For this report, large exporters are industries which have at least one product with Atlantic exports greater than \$200 million; Mid-size export industries are narrowly-defined industries with Atlantic exports greater than \$100 million, typically including at least three products with exports greater than \$25 million; other exporters are generally small exporters.

3. Employment for NAICS 3262 (Rubber products)

4. Combined pulp and paper mill employment (NAICS 3221) of 3,900

Source: Statistics Canada, Trade Data Online, APEC

By contrast, seafood production is distributed all across the Atlantic region. Many small and medium-sized facilities process lobster, crab, shrimp, scallops and other fish and shellfish products for export.³ In terms of employment, this industry is the largest manufacturing industry in the region. In fruit and vegetable manufacturing, exports of frozen french fries and frozen blueberries are the key products with production concentrated in a smaller number of manufacturing facilities than for seafood production.⁴

The forest products industry is the other larger manufacturing exporter. This industry has undergone a significant period of contraction and consolidation.⁵ Pulp production for the paper industry is now concentrated in one mill in Nova Scotia (Northern Pulp) and one mill in New Brunswick (Irving Pulp and Paper), with two AV Group mills in New Brunswick producing dissolving grade pulp for the rayon industry in Asia. Paper production is concentrated in one newsprint mill in Newfoundland and Labrador with two mills producing supercalendered paper, one in Nova Scotia (Port Hawkesbury) and one in New Brunswick (Irving Paper).⁶ The wood products industry remains focused on exports of lumber although a number of sawmills and other mills have closed.⁷

2.3 The Competitiveness of Atlantic Manufacturing

How does Atlantic Canada's manufacturing sector compare with manufacturers in Canada? One challenge in making such comparisons is that Atlantic Canada's manufacturing sector has a very different focus than nationally. Refined petroleum dominates Atlantic Canada's manufactured exporters, accounting for 62% of manufactured exports, compared with only 8% nationally.⁸ Examining the remaining exports shows that, aside from Michelin tires, Atlantic exports are more focused on local resource-intensive products (i.e. seafood, fruit and vegetables and forest products) while Canada is more focused on capital-intensive industries such as motor vehicles, metals, chemicals and machinery (Table 2.4). However, detailed analysis on a comparable industry or matched plant basis are limited by the lack of data.

³ In addition to the \$2.2 billion in processed seafood exports, Atlantic Canada also exports \$642 million of fish and shellfish and \$250 million of aquaculture (mainly salmon).

⁴ In addition to the \$500 million in processed fruit and vegetables, Atlantic Canada exports \$107 million of vegetables (mainly potatoes) and \$23 million of fruit.

⁵ APEC (2014). Consolidation in Atlantic Canada's Forest Industry. *Report Card*, January. Halifax: APEC.

⁶ J.D.Irving also produces tissue paper (Irving Tissue) and corrugated packacking material (Lake Utopia Paper).

⁷ Other wood products include fibreboard, wood chips and pellets for energy production and window and door frames.

⁸ Atlantic Canada accounts for almost 60% of Canada's exports of refined petroleum. Excluding Atlantic exports from the Canadian total reveals that refined petroleum accounts for less than 5% of manufactured exports in the rest of Canada.

Table 2.4 Atlantic Manufacturers Focused on Refined Petroleum and Resource-Intensive Industries; Canada Focused on Capital-Intensive Industries**Share of manufacturing exports (excluding petroleum and coal), 2013 (%)**

Industry	NAICS	Atlantic	Canada	Difference
Petroleum & coal products ¹	324	62	8	54
Food	311	36	9	27
Paper	322	20	6	14
Plastics & rubber products	326	16	4	12
Wood products	321	7	5	2
Machinery	333	4	9	-5
Chemicals	325	3	12	-9
Transportation equipment	336	3	29	-26
Primary metal	331	2	11	-9
Computers & electronics	334	2	4	-2

Note: 1. Share of total manufacturing exports

Source: Trade Data Online

Aggregate data show that Atlantic manufacturing firms are smaller than nationally, with exports per plant about 30% lower. Atlantic plants also tend to have lower productivity (measured in terms of output per hour worked), are less likely to innovate and adopt advanced technology, and are less likely to export or be otherwise involved in global business activities.⁹ The one indicator in which Atlantic manufacturing performs on a par with Canada is in terms of capital investment per worker.

These performance indicators point to challenges in expanding the region's global reach. A lack of innovation contributes to low productivity and a lack of competitiveness, impeding the ability to succeed in global markets, thereby constraining firm size and the capacity to invest in R&D, market development and other business activities.

These indicators may also reflect the business strategy adopted by manufacturers in the region, which are more likely to compete on cost rather than on the positioning of their product within the market. As a result, Atlantic manufacturers are much less responsive to customer requirements.

⁹ These findings are consistent with Sharpe, Andrew (2003). *The Canada-Atlantic Canada Manufacturing Productivity Gap: A Detailed Analysis*. Ottawa: Centre for the Study of Living Standards.

Table 2.5 Atlantic Manufacturers are Smaller, Less Innovative and Globally Orientated than Other Canadian Firms**Selected competitiveness indicators, manufacturing, 2013 unless noted**

	Canada	Atlantic	Atlantic as share of Canada (%)
Size			
Exports (\$ billions)	275	21	8
Number of plants	85,000	3,900	5
Number of employees (000s)	1,500	76	5
Plant Size			
Exports per plant (\$ millions) ¹	3.0	2.1	70
Productivity Indicators			
Output per hour worked (\$) ²	57	43	76
Capital investment per worker (\$) ³	12,200	11,900	98
Innovation Indicators			
Innovative firms (%) ⁴	74.8	64.8	87
Advanced technology use (%) ⁴	53.1	38.2	72
Globalization Indicators			
Export intensity (%) ¹	46.3	41.5	90
Produce goods outside of Canada (%) ⁴	21.2	15.9	75
Technical activities outside of Canada (%) ⁴	16.3	10.3	63
Support activities outside of Canada (%) ⁴	26.3	17.1	65
Business Strategy Indicators			
Product positioning	87.9	82.4	94
Low-price and cost-leadership	12.1	17.6	145
Responsive to Customer Requirements			
Implemented specific cost reductions	49.0	31.5	64
Improved quality of product	63.0	49.3	78
Decreased lead time	52.8	34.7	66

Notes: 1. Excluding refined petroleum 2. 2011 3. Maritime provinces only 4. 2012 or 2010-2012

Source: Statistics Canada

Atlantic Canada does have a number of successful global manufacturers, many of them larger firms. The region is home to Canada's largest petroleum refinery. Exports per plant from Michelin' facilities in Nova Scotia are much larger than the average for tire plants elsewhere in Canada and the region's remaining paper producers also have larger exports per plant than the rest of Canada. In the seafood and fruit and vegetable industries, average exports per plant are well above Canadian norms, although it is not clear how much this reflects the impact of a few large producers such as Clearwater Seafoods, High Liner Foods, Ocean Choice International, McCain Foods and Oxford Frozen Foods. These large Atlantic firms would likely score very well on a number of performance indicators but the presence of many smaller firms still impacts the aggregate statistics: output per employee in Atlantic Canada is 5-35% lower than the national average across a range of manufacturing industries, with the exception of the paper industry.

Chapter 3

A Decade of Change in Atlantic Manufacturing

Chapter Summary

- **Atlantic manufacturers have faced a challenging period over the last decade with declines in output and employment. The number of plants has also fallen with the permanent closure of several large plants across the region, particularly in local resource-based industries, namely forest and food products.**
- **The contraction of the manufacturing sector is not unique to Atlantic Canada, although the decline has been larger than nationally. It reflects a number of competitive challenges including a steep appreciation of the Canadian dollar, increased competition from larger, lower-cost producers and rising energy costs along with declining demand for key products.**
- **The value of refined petroleum exports has increased with higher prices and Michelin has expanded tire production from its plants in Nova Scotia. It is the mid-size export industries that have had the best export performance over the last decade with gains in machinery and equipment, metal products, chemicals and pharmaceuticals and aerospace. In terms of smaller export industries, the only clear growth sector is the beverage industry.**

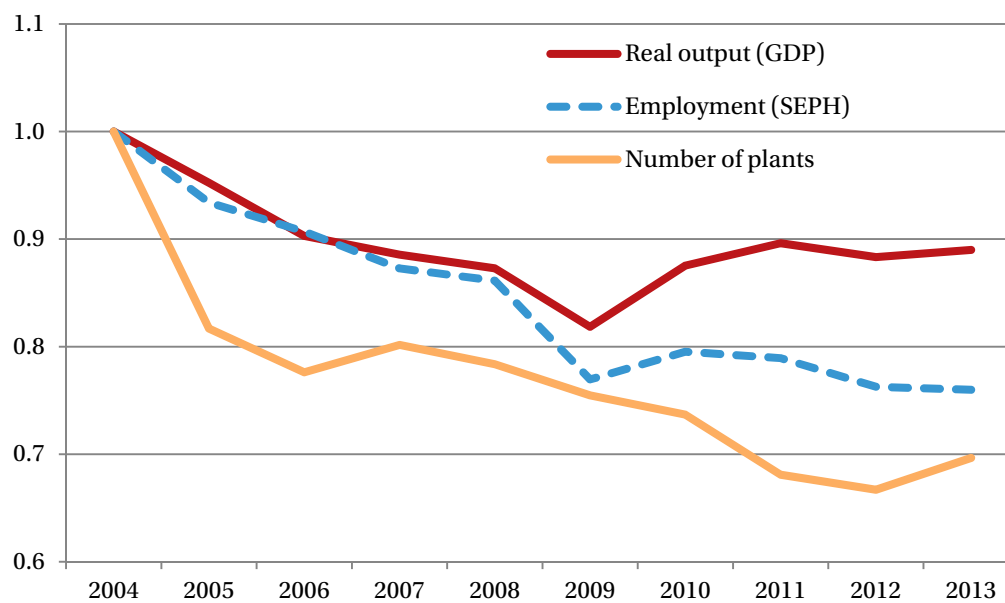
This chapter documents and explains the contraction that has taken place in Atlantic Canada's manufacturing sector over the last decade. It provides important context for understanding the capacity for future growth in the sector and identifies which industries are still growing.

3.1 Decline and Consolidation

Atlantic manufacturers have faced a challenging period over the last decade. Output has declined, with a consequent drop in employment and the number of plants. The global recession of 2008/2009 accentuated this decline, but even with a recovery in some indicators in 2010, output (real GDP) in 2013 was still more than 10% below 2004 levels, employment was 24% lower and the number of plants has shrunk by about 30%.

Figure 3.1 Atlantic Manufacturing Has Contracted Since 2004

Selected indicators, Atlantic manufacturing (Index, 2004=1)



Source: Statistics Canada, APEC

Although the decline in manufacturing has affected producers across the country, on many indicators it has been more severe in the Atlantic provinces, due to the region's greater dependence on two hard-hit industries – forest and seafood products. For example, international exports (excluding refined petroleum) fell by 15% in the Atlantic region between 2004 and 2013, but by only 11% nationally. This is largely because the forest products industry, where Atlantic exports fell by 46% over this period, accounted for 40% of non-refined exports in Atlantic Canada in 2004, compared with only 14% nationally. Similarly, employment in seafood processing fell by 27% in both Canada and the Atlantic region between 2004 and 2013; however, this industry accounted for 19% of manufacturing employment in the Atlantic provinces in 2004, compared with only 1.5% nationally.

Table 3.1 Decline in Manufacturing Not Unique to Atlantic Canada

Change in indicator, manufacturing, 2004-2013 (%)

	CA	ATL	NL	PE	NS	NB
Real GDP	-12	-11	-9	-5	-12	-13
International exports ¹	-11	-15	-38	35	-3	-22
Employment	-21	-24	-32	-16	-22	-23
Number of plants	-10	-30	-31	-25	-28	-34

Note: 1. Excluding refined petroleum

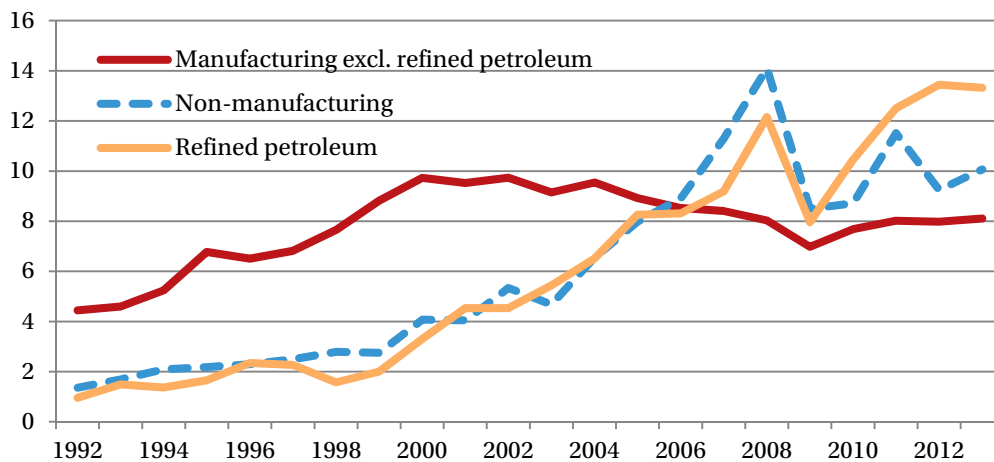
Source: Statistics Canada, Trade Data Online, APEC

The lack of a large forest products industry insulated Prince Edward Island from the contraction of this industry, while its exports actually grew 35% between 2004 and 2013, in large part due to rapid gains in its aerospace and bioscience industries.

The decline in manufacturing largely reflects the challenges faced by Atlantic manufacturers in global markets. Following a period of strong growth in the 1990s, Atlantic manufacturing exports stalled in the early 2000s, and then began to fall after 2004. Despite a modest recovery from the 2008/2009 global recession, Atlantic manufacturing exports have not regained their previous peak. However, exports of refined petroleum and non-manufacturing products (including crude oil and ores) have increased in value since 2004, in large part due to higher commodity prices.

Figure 3.2 Manufacturing Exports Have Declined Since 2004

International exports, Atlantic Canada (\$ billions)



Source: Trade Data Online

The challenges that have faced Atlantic manufacturers are well known.¹⁰ The almost 60% appreciation of the Canadian dollar between 2002 and 2011 impeded the competitiveness of manufacturers; while some firms were able to adjust, others were not. The higher Canadian dollar compounded increasing competitive pressures arising from rising competition from larger and low cost producers (particularly those based in emerging markets) and higher energy costs. Energy, water and fuel costs accounted for 13.3% of total paper manufacturing costs in Atlantic Canada in 2004, compared with 10.3% nationally. Weak demand for key products such as lumber (due to the housing market crash in the US) and newsprint (reflecting the shift to digital media content) also played a key role in the decline of specific manufacturing industries.

¹⁰ APEC (2007). *Competing in the Global Economy: Atlantic Canada's Recent Export Performance and Trade Policy Issues*. Halifax: APEC. APEC (2011). *Atlantic Canada Needs to Boost Its Export Performance. Report Card*. July. Halifax: APEC.

Table 3.2 Major Manufacturing Plant Closures in Atlantic Canada Since 2004¹

Firm or plant name	Industry	Product	Province	Job loss²	Year
Fraser Papers, Edmunston	Pulp & paper	Paperboard	NB	100	2005
Abitibi-Consolidated, Stephenville	Pulp & paper	Newsprint	NL	280	2005
Smurfit-Stone, Bathurst	Pulp & paper	Corrugated paper	NB	270	2005
UPM Kymmene Miramichi	Pulp & paper	Kraft pulp	NB	400	2005
UPM-Kymmene Miramichi	Pulp & paper	Magazine paper	NB	600	2007
Moirs, Dartmouth	Food	Chocolates	NS	580	2007
TrentonWorks, Trenton	Transportation	Rail cars	NS	330	2007
AbitibiBowater, Dalhousie	Pulp & paper	Newsprint, pulp	NB	330	2008
Owens-Illinois Inc., Scoudouc	Glass	Glass bottles	NB	200	2008
AbitibiBowater, Grand Falls-Windsor	Pulp & paper	Newsprint	NL	700	2009
Precision Finished Components, North Sydney	Transportation	Automotive parts	NS	260	2009
Twin Rivers Paper Co., Juniper	Wood products	Lumber	NB	200	2010
Northern Shrimp Company, Jackson's Arm	Seafood	Shrimp processing	NL	150	2010
Ocean Choice International, Souris	Seafood	Lobster processing	PE	300	2011
Ocean Choice International, Marystown	Seafood	Fish processing	NL	240	2011
Ocean Choice International, Port Union	Seafood	Shrimp processing	NL	170	2011
Pacific West, Point Tupper	Pulp & paper	Newsprint	NS	220	2012
Resolute Forest Products, Liverpool	Pulp & paper	Newsprint	NS	320	2012
Imperial Oil, Dartmouth	Petroleum & coal	Refined petroleum	NS	200	2013
McCain, Borden-Carleton	Food	French fries	PE	120	2014

Notes: 1. This table provides a list of the larger, permanent plant closures between 2004 and 2014 to illustrate the range of mill closures in the region; it is not intended to be a comprehensive listing.

2. Estimated job losses based on media and company reports.

Source: APEC

With the contraction and consolidation in a number of global manufacturing industries, the Atlantic region experienced the closure of a number of large manufacturing plants, many of them foreign-owned.¹¹ Although spread across the Atlantic region, the closures were particularly pronounced in the region's leading export industries, most notably forest products and seafood and food manufacturing. The prospects for any of these plants reopening are remote, even if the decline in the Canadian dollar during the second

¹¹ Chaundy, David (2011a). *Atlantic Canada's Changing Competitiveness for International Investment*. Halifax: APEC.

half of 2014 is sustained. One paper plant in Port Hawkesbury, Nova Scotia did reopen under new ownership, but only after extensive concessions to reduce costs; the newsprint mill did not reopen. These closures imply a permanent reduction in the region's manufacturing capacity; future export growth will have to come from the expansion of surviving producers, with little prospect for the entry of new foreign-owned manufacturing plants.¹²

One consequence of the decline in exports and the closure of several large export-focused plants, is that the overall export intensity of the region's manufacturing sector has declined. In 2004, 50% of Atlantic Canada's manufacturing sales (excluding refined petroleum) were generated in export markets; but by 2011 that ratio had fallen to 42%. The decline in manufacturing export intensity in Canada has been much smaller, falling from 49% to 46% over the same period. While some Atlantic industries have seen little only modest changes in export intensity (such as seafood and paper) the decline was most notable in wood products.

Table 3.3 Atlantic Manufacturers Are Less Export-Focused Than in 2004

Export intensity, selected industries, Atlantic Canada (%)

	NAICS	2004	2011
Manufacturing (excluding refined petroleum)		50	42
Seafood	3117	75	70
Wood products	321	58	34
Paper	322	66	73
Machinery	333	57	59
Other manufacturing		32	28

Source: Statistics Canada, Trade Data Online, APEC

The challenges that affected Atlantic manufacturers over the last decade have not gone away;¹³ the depreciation of the Canadian dollar during the second half of 2014, in large part due to a steep drop in global oil prices, still left the average exchange rate in December over 35% higher than in 2002.

Successful Atlantic firms that are penetrating global value chains and that in some cases have repositioned their business, differentiate themselves in global markets through their proprietary technology, specialized competencies or superior quality of their products (e.g. more durable products, better environmental characteristics or faster turnaround).¹⁴ These firms are continually innovating, investing in R&D or machinery and equipment, and making sure they stay in touch with the latest market trends. While there are a

¹² Chaundy, David (2011a).

¹³ APEC (2014).

¹⁴ Chaundy, David (2011b). *Taking on the World: Atlantic Canada's Role in Global Value Chains*. Halifax: APEC.

number of such firms in the Atlantic region, the performance indicators in Chapter 2 point to broad challenges in improving and strengthening the region's manufacturing exports.

3.2 Growth Industries

If some of the region's largest and resource-based manufacturers, such as food and forest products, have not grown over the last decade, which Atlantic industries are achieving success?

Table 3.4 Export Performance of Atlantic Manufacturers

Change in selected global exports¹, Atlantic Canada

	NAICS	2000-2004	2004-2008	2008-2013	2004-2013
Large Exporters²					
Refined petroleum	3241	+	+	+	+
Seafood	3117	+	-	+	0
Tires	32621	-	+	+	+
Paper	32212	-	-	-	-
Pulp	32211	-	0	+	0
Wood products	321	0	-	+	-
Fruit & vegetables	3114	+	0	+	0
Mid-Size Export Industries²					
Machinery & equipment	333, 334, 345	+	+	+	+
Metal products	331, 332	-	+	-	+
Chemicals & pharmaceuticals	325	+	+	0	+
Plastics	3261	+	-	0	0
Aerospace	3364	-	+	+	+
Other Exporters²					
Miscellaneous manufacturing	339	+	-	+	0
Other food	311 excl. 3114, 3117	+	-	+	-
Textiles	313, 314, 315	+	-	-	-
Beverages	3121	+	+	+	+
Gypsum	3274	-	+	+	+
Other transportation	336 excl. 3364	-	-	-	-
Furniture	337	0	-	-	-

Notes: 1. Changes are shown as + or - if more than $\pm 5\%$ over each 5-year period or more than $\pm 10\%$ between 2004 and 2013. 2. Groupings defined in Table 2.3

Source: Trade Data Online, APEC

The value of Atlantic exports of refined petroleum have expanded over the last decade but this is largely due to price changes. One of the three refineries in the region closed in 2013 and the North Atlantic refining industry as a whole remains under pressure.¹⁵

Michelin has expanded the production and exports from its three Nova Scotia tire plants over the last decade. This growth partly reflects new investments to modernize production and the introduction of new product lines.¹⁶

It is really the mid-size export industries that have had the best export performance over the last decade. Most of Atlantic Canada mid-size export industries experienced growth between 2004 and 2013, including machinery and equipment (up \$113 million) and aerospace (\$99 million) with Prince Edward Island and Nova Scotia the prime beneficiaries. Gains in chemicals and pharmaceuticals (\$89 million) were led by firms in Prince Edward Island while New Brunswick companies accounted for the majority of the gains in metal products (\$89 million). Higher plastics exports from Nova Scotia were offset by losses in New Brunswick.

In terms of smaller export industries, the only clear growth sector is the beverage industry. Beer exports were growing consistently to 2005, while recent growth has been largely attributable to growing exports from distilleries (e.g., vodka). Gypsum (wallboard) exports have also grown over the last decade from a two-decade low in 2004. However, at \$30 million, the overall value of Atlantic exports in 2013 was still just below the average level achieved at the end of the 1990s.

¹⁵ Crawford, Todd (2011). *Canada's Petroleum Refining Sector An Important Contributor Facing Global Challenges*. Ottawa: Conference Board of Canada.

¹⁶ Chaundy, David (2011a).

Chapter 4

The Global Market Focus of Atlantic Manufacturers

Chapter Summary

- Atlantic exporters continue to focus on the US market with little evidence of diversification to other markets at the aggregate level.
- Atlantic exports of manufactured products (excluding refined petroleum) to the EU have declined since 2007 and at \$600 million are now at their lowest level in over 20 years, accounting for 7.4% of Atlantic exports.
- The leading Atlantic exports to the EU are refined petroleum, seafood, machinery and equipment, frozen fruit, video game machines, wood products, aerospace, and chemicals and pharmaceuticals. However, exports of seafood and aerospace have declined since the mid-2000s.

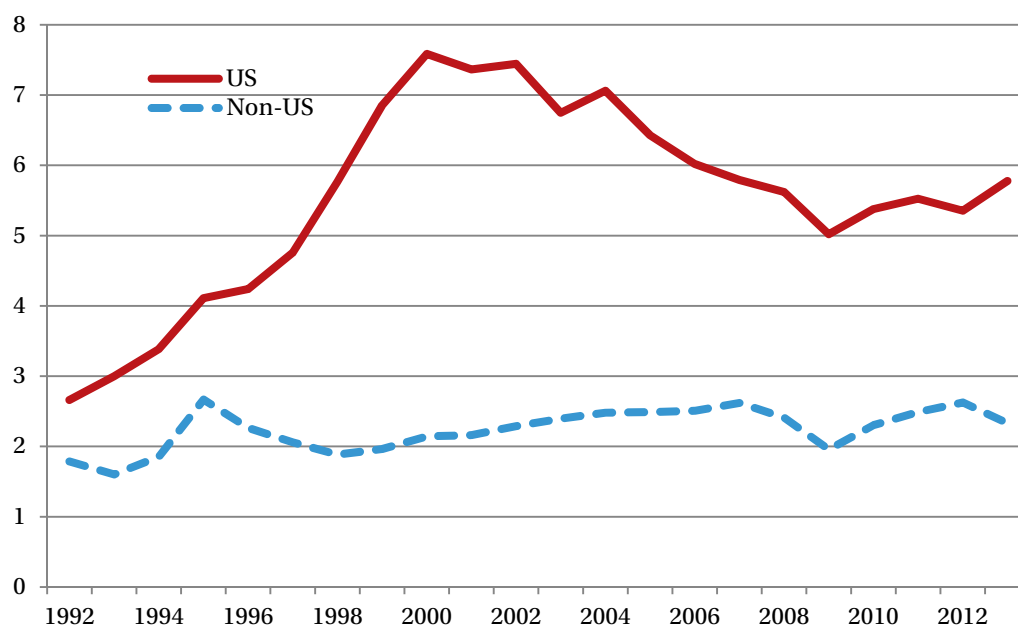
This chapter examines changes in the global market focus of Atlantic manufacturers, identifying the most important current markets and which markets are being targeted for expansion.

4.1 The Role of the EU Market

Atlantic manufacturing exports (excluding refined petroleum) reached a peak in 2000 and have declined since 2004. Changes in Atlantic Canada's exports have been dominated by changes in sales to the US. Strong export gains during the 1990s was almost exclusively due to growth in the US market, with US exports tripling in value to \$7.6 billion. Similarly, the decline since 2004 has been driven by falling sales in the US, which remain below \$6 billion. A decade of modest increases helped boost exports to non-US markets from \$2 billion per year in the late 1990s to an average \$2.4 billion since 2007. However, there has been no net growth since that time.

Figure 4.1 US Market Still Dominates Trends in Atlantic Manufacturing Exports

Manufacturing exports excluding refined petroleum, Atlantic Canada (\$ billions)



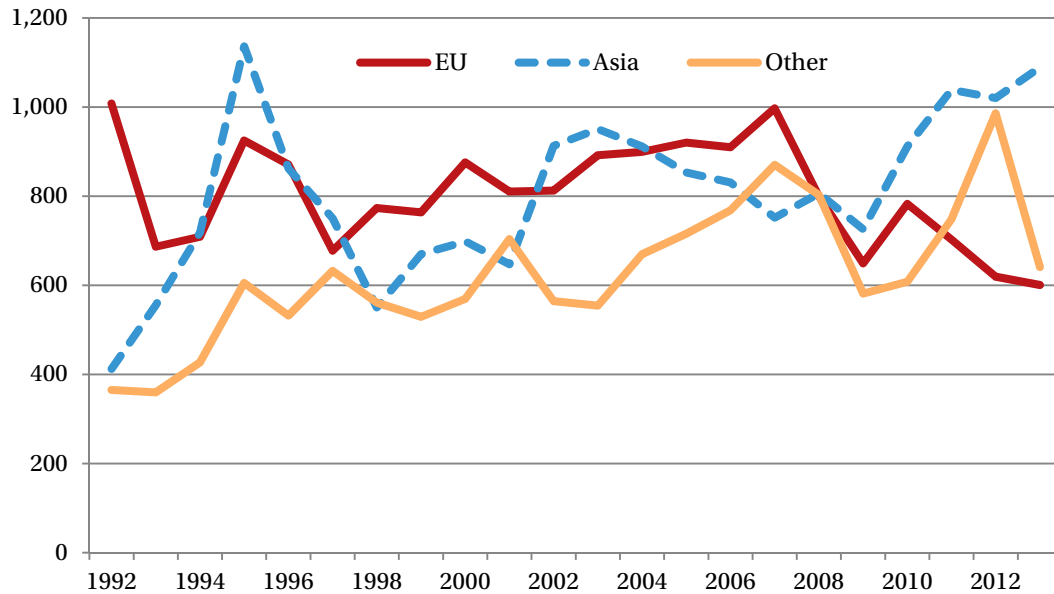
Source: Trade Data Online

Looking closer at the broad non-US markets reveals little clear trend for overall Atlantic exports. Exports to the EU (excluding refined petroleum) have fluctuated between \$700 and \$1,000 million for most of the 1990s and 2000s, with some modest gains in the mid-2000s. However, Atlantic exports to the EU have declined since 2007 and at \$600 million are now at their lowest level in more than 20 years. Exports to Asia have been quite volatile but the last three years have seen the highest sustained level in two decades at over \$1 billion. Exports to other regions (led by Latin America but including the Middle East, Africa and the Pacific Ocean region) did show modest gains until 2007 but have been quite volatile since, with a sharp drop in exports to Latin America.

Atlantic Canada's share of exports to the EU (excluding refined petroleum) fell from over 20% in the early 1990s to about 10% in the mid-1990s, due to the rapid increase in exports to the US. The share of Atlantic exports to the EU fluctuated around 10% until 2010 but has since fallen to 7.4%, its lowest share in more than two decades, largely because of a drop in the value of EU exports. Atlantic Canada has traditionally had a higher share of exports to the EU than Canada, but this gap has diminished considerably in recent years; Canada's share of exports to the EU was 6.1% in 2013.

Figure 4.2 Little Evidence of Export Diversification Beyond the US

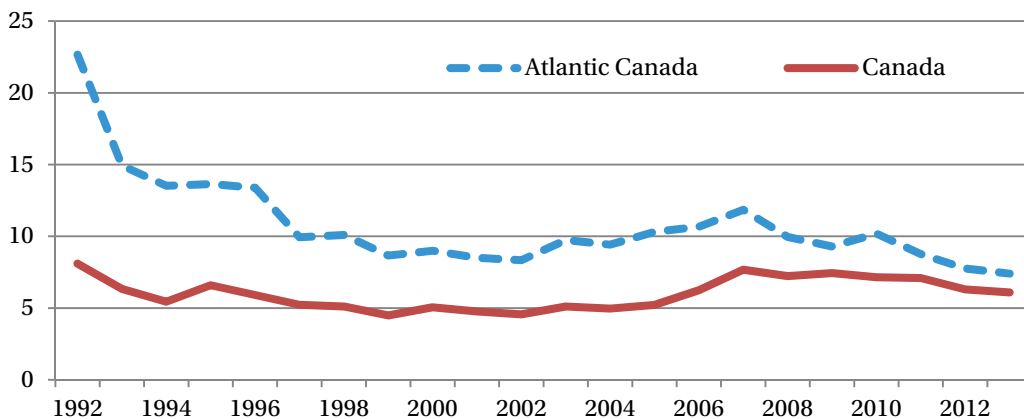
Manufacturing exports excluding refined petroleum to non-US regions, Atlantic Canada (\$ millions)



Source: Trade Data Online

Figure 4.3 Atlantic Canada is More Focused on the EU

EU share of manufacturing exports excluding refined petroleum (%)



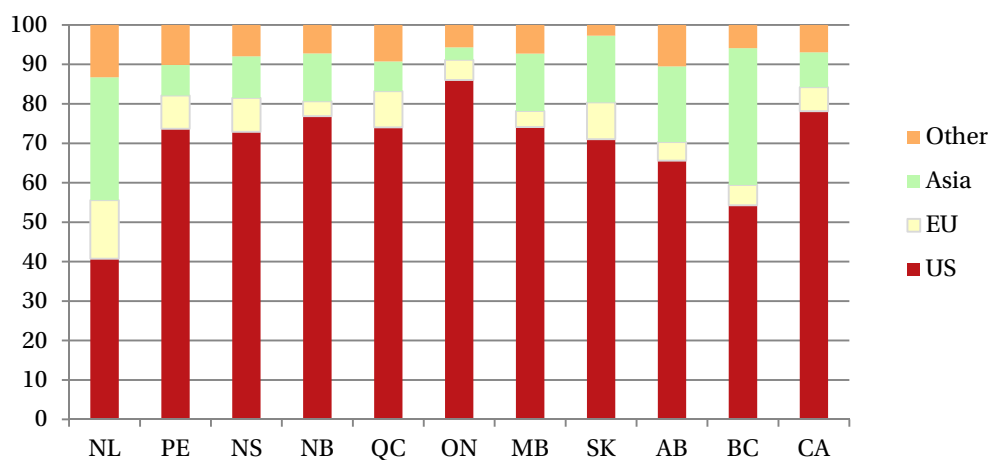
Source: Trade Data Online

While there is a clear geographic pattern across Canada in terms of the importance of exports to Asia – with much higher exports to Asia from western Canada and Newfoundland and Labrador – the same is not true for exports to the EU (Figure 4.4). While Newfoundland and Labrador has the highest share of manufacturing exports

(excluding refined petroleum) to the EU at 14.8%, there is little systematic variation in the relative importance of the EU in other provinces.

Figure 4.4 Little Variation in Exports to EU Across Canada

Manufacturing exports (excluding refined petroleum) by region (%), 2013

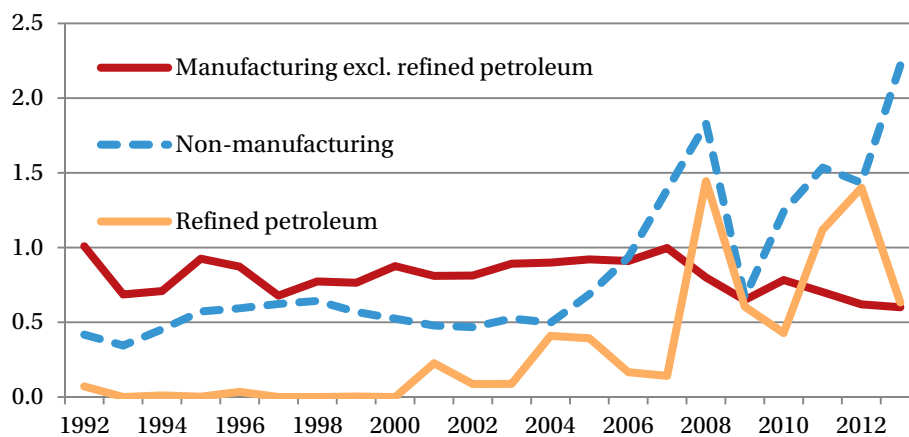


Source: Trade Data Online

4.2 Atlantic Exports to the EU

While Atlantic manufacturing exports to the EU have declined since 2007, non-manufacturing exports have increased since 2004, led by higher exports of iron ore, and more recently crude oil. In 2013, the EU accounted for about 22% of Atlantic Canada's non-manufacturing exports.

Figure 4.5 Atlantic Non-Manufacturing Exports to the EU have Increased
Exports to the EU, Atlantic Canada (\$ billions)



Source: Trade Data Online

Atlantic exports of refined petroleum to the EU have also increased in recent years. Although large in value terms, the EU accounts for less than 5% of Atlantic Canada's exports of refined petroleum with the US still the dominant market. The EU has been a visible destination for exports from the North Atlantic refinery since 2001. But its importance has increased since 2008, accounting for an average 18% of the refinery's international sales. The EU has not been an important market for the Irving refinery, but since 2008 there has also been an increase in exports to the EU, averaging almost 5% of the refinery's international exports.

Table 4.1 Atlantic Exports to the EU Led By a Few Key Industries

Exports to the EU, 2013 (\$ millions unless noted)

	NAICS	EU exports as share of total ATL exports (%)	ATL	NL	PE	NS	NB
Major Exporters¹							
Refined petroleum	3241	4.8	633	541	-	-	92
Seafood	3117	12.1	270	116	10	114	30
Tires	32621	1.5	15	-	-	15	-
Paper	32212	0.6	4	3	-	1	-
Pulp	32211	1.3	10	-	-	9	1
Wood products	321	5.7	35	-	-	17	18
Fruit & vegetables	3114	8.7	46	-	2	44	-
Mid-Size Export Industries¹							
Machinery & equipment	333, 334, 335	14.2	74	3	13	48	9
Metal products	331, 332	5.8	18	5	-	5	8
Chemicals & pharmaceuticals	325	11.2	25	-	19	5	1
Plastics	3261	0.8	2	-	-	1	-
Aerospace	3364	20.5	27	6	8	11	2
Other Exporters¹							
Miscellaneous manufacturing	339	31.0	43	-	-	1	41
Other food	311 excl. 3114 & 3117	1.5	2	-	1	1	-
Textiles	313, 314, 315	1.5	1	-	-	1	-
Beverages	3121	5.8	4	3	-	-	-
Gypsum	3274	-	-	-	-	-	-
Other transportation	336 excl. 3364	1.9	1	-	-	1	-
Furniture	337	0.7	-	-	-	-	-

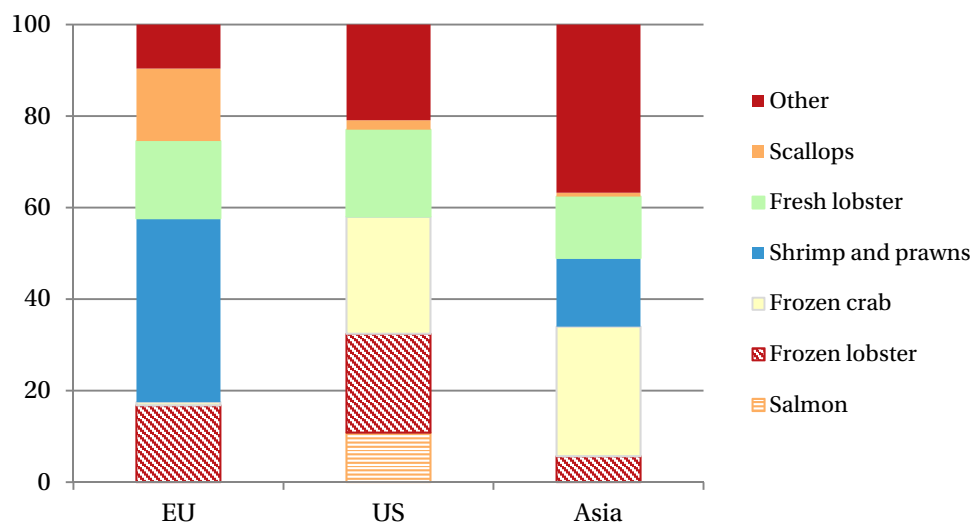
Note: 1. Groupings defined in Table 2.3

Source: Trade Data Online

Aside from refined petroleum, seafood products account for the largest share of Atlantic exports to the EU, valued at \$270 million in 2013. The EU represented 12% of total Atlantic seafood exports in 2013 but was most important for seafood exports from Nova Scotia (21%) and Newfoundland and Labrador (15%). Atlantic seafood exports to the EU primarily consist of shrimp, fresh and frozen lobster and scallops (Figure 4.6). By contrast, Atlantic crab exports are focused on the US and Asia, with little export of scallops to either market and few shrimp exports to the US.

Figure 4.6 Atlantic Seafood Exports Vary by Geographic Market

Atlantic seafood exports by product and market, 2013 (%)



Source: Trade Data Online

Atlantic firms exported \$46 million of processed fruit and vegetables to the EU in 2013, representing almost 9% of this industry's exports. This largely consisted of frozen blueberries from Nova Scotia.

Atlantic exports of wood products (mainly wood pellets) to the EU amounted to \$35 million in 2013, about 6% of total exports from that industry. These exports are split between Nova Scotia and New Brunswick.

In terms of mid-sized exporters, machinery exports to the EU amounted to \$74 million in 2013, led by firms in Nova Scotia. Aerospace exports were also important across the region, amounting to \$27 million (20% of the industry's exports). Chemical and pharmaceutical exports to the EU, largely from Prince Edward Island, were worth \$25 million in 2013.

In terms of other exports, the only notable export to the EU is that of video game machines produced by IGT in New Brunswick (part of miscellaneous manufacturing).¹⁷ These exports, valued at \$43 million in 2013, accounted for 31% of global sales.

4.3 Is the EU a Priority Market?

The US continues to be the prime market for Atlantic manufacturers (Table 4.2), with little evidence of diversification to other markets at the aggregate level. However, at a more detailed industry level, there is evidence of exporters increasing exports in selected markets, including the EU, Latin America, Asia and the Middle East.

Exports to the EU have grown since the early 2000s in refined petroleum, seafood, fruit and vegetables, machinery and equipment, metal products, chemicals and pharmaceuticals, and miscellaneous manufacturing. However, exports to the EU of seafood and aerospace have declined since the mid-2000s.

Despite evidence of some growth in exports to the EU, it still accounts for a small share of Atlantic exports (Table 4.1), exceeding 10% only in miscellaneous manufacturing (31%), aerospace (20%), machinery and equipment (14%), seafood (12%) and chemicals and pharmaceuticals (11%), although the EU share can vary considerably for specific products within these industries. The EU economy has struggled to recover from the 2008/2009 global recession and the ensuing sovereign debt crisis. It remains to be seen whether the implementation of the CETA will lead to greater interest in the EU on the part of Atlantic exporters.

¹⁷ GTECH recently merged with IGT, which became the name of the new company.

Table 4.2 US Dominates Atlantic Exports But Some Growth in Other Markets

	NAICS	Prime market focus	Other growth markets ¹	Comment on EU
Major Exporters²				
Refined petroleum	3241	US	EU, Latin America	
Seafood	3117	US	EU, Russia	EU exports have declined since 2007
Tires	32621	US	Latin America	
Paper	32212	US	-	
Pulp	32211	US, Asia	Middle East	
Wood products	321	US	Middle East	
Fruit & vegetables	3114	US	EU, Latin America	
Mid-Size Export Industries²				
Machinery & equipment	333, 334, 335	US	EU, Asia, other	
Metal products	331,332	US	Asia, EU	EU exports quite volatile
Chemicals & pharmaceuticals	325	US	EU, Latin America	EU exports higher since 2009
Plastics	3261	US	Latin America	
Aerospace	3364	US, EU	Asia, Africa	EU exports have declined since 2006
Other Exporters²				
Miscellaneous manufacturing	339	US	EU, Latin America	EU exports substantially higher since 2006
Other food	311 excl. 3114 & 3117	US	Asia	
Textiles	313, 314, 315	US	-	
Beverages	3121	US	-	
Gypsum	3274	US	-	
Other transportation	336 excl. 3364	US	-	
Furniture	337	US	-	

Notes: 1. Based on change in value and shares between 2000-2003 and 2010-2013.

2. Groupings defined in Table 2.3

Source: APEC

Chapter 5

Summary and Conclusions

Atlantic Canada's manufacturing sector remains an important contributor to the region's economy. In 2013, this sector sold more than \$37 billion worth of goods, directly contributing almost 7% of the region's GDP (a standard measure of the total value added or net output produced in an economy). About 76,000 workers were employed in almost 4,000 manufacturing plants across the region. Most importantly, manufacturers account for more than 60% of Atlantic Canada's international exports. With a modestly growing domestic economy, the manufacturing sector therefore remains one of the key potential drivers of growth as manufacturers expand into global markets.

In terms of export activity, Atlantic Canada's manufacturing sector is focused on a number of key products (defined in this report as 'large exporters'): refined petroleum, seafood products, forest products, motor vehicle tires, and fruit and vegetable products. Other smaller but important manufacturing industries (defined in this report as 'mid-size export industries') include machinery and equipment, metal products, chemicals and pharmaceuticals, plastics and aerospace. There are also a number of other manufacturing plants that export including video game machines, other food products, textile products, beer, plasterboard and furniture.

Aggregate data show that Atlantic manufacturing firms are smaller than nationally, with exports per plant about 30% lower. Atlantic plants also tend to have lower productivity (measured in terms of output per hour worked), are less likely to innovate and adopt advanced technology, and are less likely to export or be otherwise involved in global business activities.

These performance indicators point to challenges in expanding the region's global reach. A lack of innovation contributes to low productivity and a lack of competitiveness, impeding the ability to succeed in global markets, thereby constraining firm size and the capacity to invest in R&D, market development and other business activities. These indicators may also reflect the business strategy adopted by manufacturers in the region, which are more likely to compete on cost rather than on the positioning of their product within the market. As a result, Atlantic manufacturers are much less responsive to customer requirements.

Despite these aggregate statistics, the region does have a number of firms that are successfully penetrating global value chains. They have repositioned their business and

differentiated themselves in global markets through their proprietary technology, specialized competencies or superior quality of their products (e.g. more durable products, better environmental characteristics or faster turnaround). These firms are continually innovating, investing in R&D or machinery and equipment, and making sure they stay in touch with the latest market trends.

Atlantic manufacturers as a whole have faced a challenging period over the last decade. Output has declined, with a consequent drop in employment and the number of plants. The global recession of 2008/2009 accentuated this decline, but even with a recovery in some indicators in 2010, output (real GDP) in 2013 was still more than 10% below 2004 levels, employment was 24% lower and the number of plants has shrunk by about 30%.

Although the decline in manufacturing has affected producers across the country, on many indicators it has been more severe in the Atlantic provinces, due to the region's greater dependence on two hard-hit industries – forest and seafood products. The lack of a large forest products industry insulated Prince Edward Island from the contraction of this industry, while its exports grew between 2004 and 2013, in large part due to rapid gains in its aerospace and bioscience industries.

The challenges that have faced Atlantic manufacturers are well known. The almost 60% appreciation of the Canadian dollar between 2002 and 2011 impeded the competitiveness of manufacturers; while some firms were able to adjust, others were not. The higher Canadian dollar compounded increasing competitive pressures arising from rising competition from larger and low cost producers and higher energy costs. Weak demand for key products such as lumber and newsprint also played a key role in the decline of specific manufacturing industries. These challenges have not gone away; the depreciation of the Canadian dollar during the second half of 2014, in large part due to a steep drop in global oil prices, still left the average exchange rate in December over 35% higher than in 2002.

In terms of export growth sectors, the value of Atlantic exports of refined petroleum have expanded over the last decade but this is largely due to price changes. Michelin has expanded the production and exports from its three Nova Scotia tire plants over the last decade. This growth partly reflects new investments to modernize production and the introduction of new product lines. It is really the mid-size export industries that have had the best export performance over the last decade with gains in machinery and equipment, metal products, chemicals and pharmaceuticals, and aerospace.

Atlantic manufacturing exports (excluding refined petroleum) reached a peak in 2000 and have declined since 2004. Strong export gains during the 1990s was almost exclusively due to growth in the US market, with US exports tripling in value to \$7.6 billion. Similarly, the decline since 2004 has been driven by falling sales in the US, which remain below \$6 billion. A decade of modest increases helped boost exports to non-US markets from \$2 billion per year in the late 1990s to an average \$2.4 billion since 2007. However, there has been no net growth since that time.

Atlantic Canada's share of exports to the EU (excluding refined petroleum) fell from over 20% in the early 1990s to about 10% in the mid-1990s, due to the rapid increase in exports to the US. The share of Atlantic exports to the EU fluctuated around 10% until 2010 but has since fallen to 7.4%, its lowest share in more than two decades, largely because of a drop in the value of EU exports. Atlantic Canada has traditionally had a higher share of exports to the EU than Canada, but this gap has diminished considerably in recent years; Canada's share of exports to the EU was 6.1% in 2013.

Atlantic exports of refined petroleum to the EU have also increased in recent years. Although large in value terms, the EU accounts for less than 5% of Atlantic Canada's exports of refined petroleum with the US still the dominant market. Aside from refined petroleum, seafood products account for the largest share of Atlantic exports to the EU, valued at \$270 million in 2013. Atlantic firms exported \$46 million of processed fruit and vegetables to the EU in 2013, representing almost 9% of this industry's exports. This largely consisted of frozen blueberries from Nova Scotia. Atlantic exports of wood products (mainly wood pellets) to the EU amounted to \$35 million in 2013, about 6% of total exports from that industry.

In terms of mid-size export industries, machinery exports to the EU amounted to \$74 million in 2013, led by firms in Nova Scotia. Aerospace exports were also important across the region, amounting to \$27 million (20% of the industry's exports). Chemical and pharmaceutical exports to the EU, largely from Prince Edward Island, were worth \$25 million in 2013.

The EU economy has struggled to recover from the 2008/2009 global recession and the ensuing sovereign debt crisis. It remains to be seen whether the implementation of the CETA will lead to greater interest in the EU on the part of Atlantic exporters. APEC's accompanying reports examine in more detail the broader opportunities in the EU and the opportunities for specific manufacturing industries identified in this report.

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