



Report May 2008

Stuck in Neutral Canada's Engagement in Regional and Global Supply Chains



TRADE, INVESTMENT POLICY AND INTERNATIONAL COOPERATION

767.89	0.01	▲	0.00%	1787.63	8.49	▲
778.33	1.34	▲	0.17%	1791.97	4.83	▲
443.87	7.63	▲	0.23%	1295.09	-0.54	▼
6.60	-4.89	▼	0.16%	767.89	0.01	▲
11	-0.73	▼	0.05%	700.33	1.34	▲
63	8.49	▲	0.38%	443.83	5.63	▲
1791.97	4.83	▲	0.27%	416.60	-6.89	▼
1295.09	-0.54	▼	0.13%	412.11	-0.73	▼
767.89	0.01	▲	0.10%	795.63	8.49	▲
700.33	1.34	▲	0.17%	791.97	4.83	▲
0.33	-1.34	▲	0.23%	795.09	-0.54	▼
63	8.49	▲	0.06%	767.89	0.01	▲
416.60	-6.89	▼	0.15%	778.33	1.34	▲
412.11	-0.73	▼	0.48%	1295.09	-0.54	▼
443.83	5.63	▲				



Stuck in Neutral: Canada's Engagement in Regional and Global Supply Chains

by *Danielle Goldfarb* and *Doris Chu*

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Preface

Companies today are increasingly spreading out their activities globally, focusing on what they do well and seeking global talent or parts in areas that other regions do better. Yet traditional measures and analyses of trade do not adequately take these trends into account. This study from the Conference Board's International Trade and Investment Centre takes a fresh approach to capture some of these trends. The study examines Canada's trade with key regions from a supply-chain perspective, which is more aligned with the realities of global and regional production. The result is a timely assessment of the stage Canadian goods are at when they are used in other regions' supply chains, as well as at what stage Canada uses other regions' goods in its production. The data and conclusions can help Canadian public and private leaders understand the implications of how global and regional production takes place today.

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EXECUTIVE SUMMARY

Stuck in Neutral Canada's Engagement in Regional and Global Supply Chains

At a Glance

- ◆ Analysis of trade from a supply-chain perspective reveals that Canada has scaled back its involvement in regional and global supply chains in recent years.
- ◆ This reflects stagnation in Canada–U.S. regional supply chains over 2000–06, but it conceals recent growth between Canadian supply chains and those in Asia, Europe, and South America, albeit from a modest base.
- ◆ To capitalize on untapped potential with the United States and other regions, policy-makers need to reduce barriers to engagement in global and regional supply chains, and businesses need to identify their strengths *and* take advantage of those of other regions.

This report aims to shift Canadians' thinking about trade to a supply-chain perspective more aligned with how global and regional production operates today. Products and services are increasingly broken down—with different activities carried out in different locations. All trade does not take place strictly between two countries: those different activities tend to be traded within regions, and then between those regions.

The ability to specialize and trade for what other regions do better boosts Canadian living standards. Yet we know little about how Canada fits into the global and regional supply-chain picture.

This report aims to shift Canadians' thinking about trade to a supply-chain perspective more aligned with how global and regional production operates today.

To improve our understanding, the Conference Board's International Trade and Investment Centre takes a fresh approach. We evaluate at what stage of their supply chains other regions source from Canada, and at what stage Canada sources from other regions into its own supply chains. And our approach differs in several other ways from previous work. For example, we examine developments in the most recent years (what really matters to decision makers today), we exclude price fluctuations to enable us to draw conclusions about changes to the trade structure, and we look at trade through the eyes of the buyer's supply chain rather than the producer's.

The findings combine the sum of many individual businesses' decisions to improve their competitive position by sourcing from—or to—other regions' supply chains. The results show a scaling back of Canada's involvement in global and regional supply chains in

recent years, after a dramatic increase over the 1990s. However, stripping away Canada's trade with its North American partners shows that Canada has become more integrated—especially in recent years—in other regions' supply chains. Still, in some regions, such as Asia, Canada is doing a much better job of tapping into their inputs than tapping into their supply chains. Moreover, the overall amounts of integrated trade remain modest and may represent important untapped potential.

Canadian government and business leaders need to take stock of the changes documented in this report and develop strategies to enable Canadian businesses to succeed in the face of rapid global economic change. Despite the plateau in Canada–U.S. supply-chain integration, Canada–U.S. trade will continue to dominate the picture. Policy-makers must therefore make it a priority to remove remaining cross-border barriers that are impeding companies' access to efficiency gains through specializing and trading cross-border. These barriers include

regulatory differences where regulatory goals are similar. But since recent growth between Canadian and other regions' supply chains has been rapid, policy-makers should also remove barriers to globally imported inputs to enable companies to take further advantage of those inputs. Government should also remove barriers to domestic competition, which may be reducing Canada's attractiveness as a location for other regions to buy high-value activities.

Businesses need to better identify areas in which they are globally competitive. They also need to assess how to take full advantage of other regions' strengths—both expertise and inputs—to improve their competitive position. They may be able to capitalize on the recent growth in trade in advanced inputs in Europe, South America, and Asia. Furthermore, to succeed in this rapidly changing environment, companies need to remain open to new ideas and technologies and think broadly about the range of companies that could use their inputs or expertise.

CHAPTER 1

Trade From a Supply-Chain Perspective

Chapter Summary

- ◆ Traditional trade analyses generally fail to take into account that companies are breaking down activities into smaller parts and sourcing them globally.
- ◆ This study examines trade in a different way: from the perspective of the importing region's supply chains.
- ◆ Canada's role in global and regional supply chains matters: increases in global engagement, productivity, and living standards go hand in hand.
- ◆ Since much supply-chain activity is regional, we study Canada's trade with regions rather than with specific countries, which can be misleading.

INTRODUCTION

Toronto-based Samco Machinery Limited supplied \$3 million worth of steel-bending machines that India's Tata Motors uses to manufacture parts for its new Nano car¹—an example of a Canadian goods export used in an Indian supply chain. Montréal-based Cirque du Soleil tours its

shows in Europe, Latin America, North America, and Asia, using Canadian and global performers and local workers at each location—an example of a Canadian services export that draws on global talent as a key input. Waterloo-based Research In Motion designs its BlackBerrys in Canada, manufactures them here until it has worked out any design flaws, then sources the rest of the manufacturing globally.² Californians design Apple's iPod, Japan's Toshiba supplies the iPod hard drive and display screen, and Chinese workers assemble the final product.³

Companies today are breaking their activities into smaller segments, focusing on what they do well, and seeking global talent or parts that others are relatively better at.

These are examples of how companies today are breaking their activities into smaller segments, focusing on what they do well, and seeking global talent or parts that others are relatively better at. In recent years, exports and their imported inputs have risen together, increasing the share of components in total trade. There has also been a significant increase in global foreign direct investment, sales from foreign affiliates, and trade in services. Lower trade barriers, transport costs, and

1 Gee, "Looking Beyond America."

2 Robert Crow of Research In Motion, presentation to Industry Canada *Global Value Chains Conference*.

3 Linden, *Who Captures Value*, p. 6.

communications costs; the ability to digitize production; and the rapid economic growth of large, low-wage developing economies have accelerated this trend.

Despite the significant and dynamic restructuring of global production, we know little about—and generally pay little attention to—Canada’s role in this restructuring process. Although we know parts and services inputs are increasingly traded, conventional trade data and analyses tend to treat trade as being in final goods. The mercantilist notion that “exports are good and imports are bad” is still common among policy-makers and the general population. But today, imports are integral to the competitiveness of domestic supply chains and to the competitiveness of Canada’s exports.

By buying information technology components globally, U.S. companies lowered their prices by 30 per cent, raised the country’s productivity, and significantly boosted U.S. gross domestic product.

To address the gap between traditional analyses and globally integrated realities, this study takes a fresh approach to describing Canada’s role in global production. It examines at what stages other regions use Canadian goods, at what stages Canadian companies use those regions’ goods, and how this has changed over time. Due to limited services trade data, we are restricted to an analysis of goods. The findings present the sum of many individual businesses’ decisions to buy and sell into and from global and regional supply chains to maximize their competitiveness. The results also point out areas of weakness and opportunity, and they inform policy and business discussions about how to leverage Canadian competencies in future.

The analysis builds on earlier Conference Board research on Canada’s trade with large, rapidly growing developing countries from a global supply-chain perspective.⁴ This report shifts the attention to Canada’s trade with regions

rather than countries. This approach more accurately reflects the reality that the production of goods and services is highly integrated within regions.⁵ Countries increasingly trade inputs within their region for consumption in that region or export globally. If we examine trade between Canada and China, for example, as many analyses do, we may falsely attribute to China activities that take place in Japan or South Korea, simply because the final assembly took place in China en route to North America. By examining trade with regions, we can more accurately describe interactions between regional and global supply chains.

WHY ENGAGING IN GLOBAL SUPPLY CHAINS MATTERS

Canada’s role in global and regional supply chains matters. According to the evidence, slicing production into smaller pieces and producing each part wherever in the world it is most efficient to do so tends to improve productivity. Organisation for Economic Co-operation and Development (OECD) research finds that international engagement and productivity go hand in hand. Internationally engaged firms, whether through importing, exporting, sourcing globally, or having affiliates abroad, tend to have higher productivity.⁶ Higher productivity does not mean working harder, it means working smarter: producing more for each hour worked. Productivity, in turn, raises living standards.

A few examples illustrate the link between international engagement, productivity, and living standards. By buying information technology (IT) components globally from where they were most efficiently produced, U.S. companies lowered their prices by 30 per cent, raised the country’s productivity, and boosted gross domestic product by more than US\$230 billion from 1995 to 2002.⁷ In Canada, Canadian plants became more specialized after the Canada–U.S. Free Trade Agreement eliminated

4 Goldfarb and Beckman, *Canada’s Changing Role*; Hodgson and Shannon, *Mission Possible*, pp. 16–17.

5 Alan Rugman’s work has documented this extensively. See, for example, *The Regional Multinationals*.

6 OECD, *Moving Up the (Global) Value Chain*, p. 5.

7 Mann, *Globalization of IT*, p. 3.

the remaining tariffs.⁸ Companies then traded across the border for parts that could be made more efficiently on the U.S. side. Although some short-term adjustments took place, the long-term result was a 14 per cent increase in plant-level labour productivity, translating into an enormous compound annual growth rate of almost 2 per cent.⁹ And the OECD provides corroborating evidence, estimating that, within the OECD area, an increase in openness by 10 percentage points translates over time into an increase of 4 per cent in per capita income.¹⁰ Statistics Canada finds that the use of imported goods inputs in Canadian supply chains over 1961–2003 was associated with improved productivity.¹¹

There is some evidence that global sourcing moves developed economies toward higher value-added activities. Martin Baily has found, for example, that U.S. companies' global sourcing has led to a shift toward higher value-added jobs in software and IT services in the United States.¹² It is less clear whether global sourcing by Canadians has led to a shift toward higher value-added activities. The use of imported services inputs over 1961–2003 is associated with shifts to higher value-added activities, but the use of imported goods inputs is not.¹³ This could reflect the predominance of parts imports from the United States, and may have changed after 2003 as the use of parts imports from developing economies accelerated.

Engaging in global supply chains is about more than reducing costs. A 2007 OECD study¹⁴ found that smaller companies that engaged in global networks were able to expand their businesses, increase their stability, and gain exposure to new learning opportunities, technologies, and ideas. Other recent interviews revealed that Canadian companies buy global inputs and services, not only to save money but also to tap into expert skills, create additional capacity, and take advantage of innovation in business

processes.¹⁵ Sourcing globally might allow Canadian companies to regain some of the competitiveness they lost due to the Canadian dollar's appreciation in recent years. In addition, it could help offset some of the expected slowdown in economic growth potential due to our aging population. And, of course, Canadian companies that do not diversify their input sources will continue to face competitive pressures from their counterparts that do.

Not all international forays are successful, however. Companies need to weigh the benefits against costs. And if they choose to go global, they must do their due diligence to ensure they have the best chance of reaping the benefits.

Politicians and media often point to jobs lost in Canada due to buying of inputs from global markets. To be sure, some companies and individuals will suffer difficult adjustments in the short term, and the mix of jobs will change. But the balance of evidence finds that imported inputs have not caused net job losses. For example, a 2007 Statistics Canada study found that, over 1961–2003, the use of imported inputs in both goods and services had no effect on net Canadian employment.¹⁶ Bank of Canada Governor Mark Carney points to the recent loss of Canadian manufacturing jobs' being more than offset by jobs in other goods-producing industries and massive increases in services jobs.¹⁷ Although not all of this can be attributed to globalization, it is clear that the use of global sourcing has not caused overall Canadian employment to suffer.

OUR APPROACH

To what degree are Canadian companies involved in global and regional supply chains? Are companies in Canada taking advantage of inputs produced globally—in the United States, Asia, Europe, and Latin America—to reinforce their competitive position? Are companies in those regions looking to Canada for inputs to help them stay globally competitive?

8 Baldwin et al., *Responses to Trade Liberalization*, pp. 6–7.

9 Treffer, "The Long and Short," p. 31.

10 OECD, *Moving Up the (Global) Value Chain*, p. 17.

11 Baldwin and Gu, *Outsourcing and Offshoring*, p. 4.

12 Baily, "The Emerging Global Labor Market," slide 25.

13 Baldwin and Gu, *Outsourcing and Offshoring*, p. 4.

14 OECD, "Enhancing the Role," p. 65.

15 CORE, *State of Canadian Outsourcing*, p. 9.

16 Baldwin and Gu, *Outsourcing and Offshoring*, p. 5.

17 Carney, Remarks to the B.C. Chamber.

To get a complete picture of Canada’s role in these complex global linkages, one would need to track the economic links between Canada and all countries for all components and services inputs from conception through production and delivery. Because no such data exist, we have to use creative approaches, such as the one in this paper.

IMPORTING REGIONS’ POINT OF VIEW

To start creating a picture of these activities, we examine internationally traded goods according to the stage at which the buyers or importers of those goods would normally use them in their supply chains or as final products. This is different from traditional trade analysis, which either categorizes all trade as final goods or examines the stage of production from the producer’s perspective. And, unfortunately, we are limited to analyzing goods trade. Though services play a critical role in global supply chains (see box “The Growing Importance of Services Trade”), services trade data are limited, undercounted, and highly aggregated, as previous Conference Board research shows.¹⁸ Our analysis forms only a starting point for examining Canada’s place in global and regional supply chains.

We examine trade with entire regions, rather than with specific countries, to reflect the reality that most trade takes place within regions.

Our source is trade data collected by customs officials and provided by Statistics Canada through Industry Canada’s Trade Data Online. Official data are not without problems. For example, they overstate Canada–U.S. trade and under-report Canada’s trade with the rest of the world.¹⁹ However, we are interested in the composition of trade and how it changes over time. Therefore, assuming that the composition of any overstated or understated trade is similar to the composition of the true trade, this should not affect our analysis. In any case, these data are the best available source at present. We use “domestic exports,” which exclude re-exports (goods that have previously entered a country and are leaving in the same condition as they entered).

18 For more discussion on why services trade is likely to be undercounted, see Goldfarb and Thériault, *Canada’s “Missing” Trade*.

19 Ibid.

The Growing Importance of Services Trade

While goods still account for the largest share of international trade, services trade is growing rapidly. Supply chains break down without strong services links. These include transportation, market research, engineering, design, and packaging. Due to greater product diversity and customization, goods have higher and growing services content. And imported services inputs are an increasingly important input into Canadian goods, associated with a move to higher value-added production.¹

Moreover, the role of services in international trade is expanding. Lower communications costs and technological advances mean that services that were previously considered untradable are now traded, and often in non-traditional ways. Examples include music downloads and Internet telephone calls.

Unfortunately, it is difficult to get a detailed handle on Canada’s services trade performance. This is because services trade is notoriously difficult to measure. In contrast to goods, many services sold or purchased globally do not physically cross a border. Since officials cannot collect services trade data at the border as they can for goods, Statistics Canada therefore must draw primarily on regular surveys of businesses, supplemented by administrative records, to create these estimates. Still, it is difficult to capture all traded services—including Internet transactions—using current methods. Related Conference Board of Canada research finds that current statistics on services trade are likely underestimating Canadian services trade by at least one-third and probably much more.²

1 Baldwin and Gu, *Outsourcing and Offshoring*, p. 4.

2 Goldfarb and Thériault, *Canada’s “Missing” Trade*, p. 16.

CANADA’S TRADE WITH REGIONS

This study deliberately examines trade with entire regions, rather than with specific countries as is common in media and many analyses. We use Industry Canada’s regional groupings for North America, Asia, Europe, and South America. Our approach better reflects the reality that most supply chains are still regional, with those regional chains interacting with other regions. Recent World Trade Organization research confirms that most trade takes place in regions—with Germany increasingly sourcing from Europe, the United States from the Americas, and Japan from Asia.²⁰

20 Nordås, *International Production Sharing*, p. 37.

Given the extent of this integration within regions, country-to-country trade statistics can be misleading.²¹ For example, when an iPod is shipped from China to North America, officials record it as an import from China into North America. But only a few dollars of its value is created in China, and some of the highest value components were created in Japan.²² So such trade statistics would miss Japan's contribution and overstate China's. Capturing Canada's trade with each region as a whole—as we do in this study—limits this problem.

RECENT ACTIVITIES

We examine trade in 1990, 2000, 2003, and 2006 to get a sense of activity just after the signing of the Canada–U.S. Free Trade Agreement compared with activity in recent years. (Although a full annual time series would be ideal, we limit our analysis to those four years, due to the highly labour-intensive nature of our approach.) Our method, established in recent Conference Board research,²³ may be less precise than other available methods.²⁴ However, it allows us to measure what really matters to decision makers today: recent changes in Canada's trade structure as a result of rapid changes in the global economy.

GROUPING ACTIVITIES BY SUPPLY CHAIN ENTRY STAGE

We classify goods according to three stages from the importing region's point of view:²⁵

1. Entry into the supply chain at the beginning, or *entry*, stage of the manufacturing process.

2. Entry at a more advanced, or *middle*, stage of the process.
3. Final or *end-stage* goods that do not enter into the buyer's production process at all.

We consider all raw materials trade as entry-stage. This stage, however, is not confined to raw materials. Goods that have been initially processed are intermediate goods in the eyes of an exporter, but they might enter an importer's supply chain at an entry-point stage. For example, making a steel plate requires conversion of iron ore into steel and then into steel plate, so the producer would consider the steel plate as an intermediate product. But the buyer might use the steel plate at the earliest stage of building a car—which would make it an entry-point good in that supply chain.

Similarly, an exporter would classify a two-by-four wood stud constructed from raw lumber as an intermediate good. An importer would use the two-by-four in an early stage of production, making it an entry input in this study. We classify a car bumper as a middle-stage good, since it is a component used in the advanced stages of building a car. We consider the car itself an end-stage good from the importer's perspective, recognizing that someone will still need to market, distribute, and perhaps provide at-sale and after-sales service for the good before it truly is at the end stage of the entire supply chain. All references to components, parts, or inputs in this report refer to middle-stage trade and some entry-stage trade—they exclude end-stage trade.

What do these classifications tell us about Canada's role in global supply chains? A large share of entry-stage trade suggests a high level of integration in others' supply chains at the raw-materials or basic-input stage. If the data show a large share of middle-stage trade, Canada may be highly integrated in other regions' supply chains, and other regions may be tightly integrated into Canada's supply chains, at a more advanced input stage.

This is consistent with companies dividing production into smaller parts. Canadian companies then specialize in the parts of the process that they can carry out most efficiently, and trade internationally for the rest, boosting productivity and therefore living standards. An increase in middle-stage imports in particular may suggest that

21 See Goldfarb and Thériault, *Canada's "Missing" Trade*.

22 Linden, *Who Captures Value*, p. 6.

23 Goldfarb and Beckman, *Canada's Changing Role*, pp. 3–5.

24 The other approach would be to use Statistics Canada's input-output tables. However, such data are available only with a several-year lag, whereas, with our approach, we can use the most recent year of trade data (2006 in this case). Since the Canadian currency began to appreciate in 2003, if we relied only on input-output data, we might miss any shifts in the trade structure associated with the currency appreciation.

25 Our classifications of exports and imports into entry, middle, and end stage are available on request from the authors. We classified goods at the four-digit level of the Harmonized System of commodities, which is a relatively fine-grained level of analysis. While most classifications were straightforward, some required judgment on our part.

Canadian companies are moving away from such activities at home. A key difference between middle-stage inputs and many entry-stage inputs is that raw materials extraction is bound by geography, whereas producers can theoretically buy other entry-stage and middle-stage inputs anywhere—though in practice such activities may still take place close to their source.

If neighbouring countries rely heavily on middle-stage trade in both directions, this suggests that much trade takes place within the same industry. An increase in middle-point trade could also reflect increased trade within multinational companies, either through foreign direct investment or by buying inputs from the cheapest global supplier. It is also possible that middle-stage trade is capturing replacement parts—which could be important for Canada–U.S. trade—rather than new parts, but we have no way of telling which is which.

A large share of middle-stage trade would suggest that Canada is highly integrated into other regions' supply chains and other regions may be tightly integrated into Canadian supply chains.

Finally, end-stage trade suggests that goods are traded as final products and consumed without being part of the receiving country's supply chain (unless the receiving country supplied inputs that were used to make the final product). In other words, a high degree of end-stage trade could suggest that the supply chains of the two regions are not very integrated.

The relationship between imports and exports at various entry stages may give us further clues about the degree of Canada's global integration. For example, if Canada's end-stage export shares have gone up, we might conclude that other countries are less involved in Canada's supply chains. If, however, imported inputs and end-stage exports move in parallel, this could be consistent with (though not proof of) more integrated supply chains.

One might be tempted to conclude that an entry-stage good adds little value to the supply chain, and that middle- and end-stage goods add more. But just because a good is classified as entry-stage does not always mean that it adds little value to the supply chain, nor does an end-stage good necessarily represent a higher value-added part of the process. (See box "Entry Stage and Value-Added.") Unfortunately, there is no easy way to assign values representing value-added to each of our categories. And trade data have not been set up to measure how much value is created where, leaving this question for future research.

Entry Stage and Value-Added

Some raw materials—such as oil and gas—represent higher value-added than many middle- and end-stage goods.¹ Other entry-point goods, such as primary metal, represent lower value-added than more processed fabricated metal that enters supply chains at a more advanced stage. Furthermore, production of an end-stage good may represent only a very small amount of the total value-added. Car assembly in Canada, for example, represented a value-added of less than one-fifth in 2003, while car parts—which arrive at an earlier stage of entry into cross-border supply chains—represented close to one-third of value-added. There is also some variation in value-added within each of the entry, middle, and end categories.

Commentators frequently argue that developed countries, such as Canada, should "move up the value chain" to generate increases in living standards. Their rationale is that if relative prices do not change, it takes more lower value-added exports than higher value-added exports to generate the same increases in living standards. But higher value-added trade is not the only way to improve living standards through trade. Canada's wealth also rises when the price of what the country exports increases relative to the price of what it imports—or what economists call changes in the "terms of trade." So if Canada primarily exports commodities and imports manufactured goods and the price of commodities rises relative to the price of manufactured goods, then the country is better off, even if trade volumes do not change. Commodity exports could play an important role in generating increases in Canada's future living standards, especially given the increasing demand for commodities from large, rapidly growing developing economies.

1 To calculate value-added, we divided gross domestic product by its value-added components from the Statistics Canada input-output tables.

TOP 25 EXPORTS AND IMPORTS

To capture most of Canada's goods trade, we examined Canada's top 25 exports and imports to and from major regions.²⁶ In 2006, these accounted for 85 per cent of Canada's total goods trade with the world and an even greater share of Canada's trade outside North America. Because the figures were for the top 25 goods traded in each period, the list varied during the different periods, although the variations were small. However, the variations do alert us to major changes in the structure of Canada's involvement in global supply chains (which is, after all, the aim of the study).

26 While we categorize goods by stage of entry into supply chains at the Harmonized System's four-digit level in order to be as precise as possible, we select the top 25 export and import categories at the two-digit level (i.e., broader, more aggregated commodity categories) in order to capture more of total trade. The top 25 trade categories are available on request from the authors.

CHANGES IN TRADE STRUCTURE, NOT PRICE EFFECTS

Since our goal is to observe changes in the mix of Canada's goods trade by stage of entry into the supply chain, we convert trade data from nominal or current terms into real or constant terms, which takes out price movements.²⁷ The advantage of this approach is that it removes large and frequent price movements of raw materials in particular, thus providing us with a truer picture of the changes in volumes and shares of such goods. We are not suggesting that price effects are irrelevant: decision makers should certainly care about changes to Canada's prosperity arising from changes in the price of what Canada exports relative to the price of what it imports. However, our focus in this paper is on changes to Canada's trade structure.

27 To convert the data into real terms, we use export and import price deflators closely associated with each commodity at the Harmonized System four-digit level.

CHAPTER 2

Canada in Regional and Global Supply Chains

Chapter Summary

- ◆ The overall trade data suggest that Canada's involvement in global and regional supply chains has scaled back in recent years, reflecting the dominance of Canada–U.S. trade—this is at odds with the global trend of increased use of imported inputs.
- ◆ Stripping away Canada's trade with North America shows that Canada has become more integrated—especially in recent years—in other regions' supply chains.
- ◆ Still, the overall amount of efficiency-enhancing trade in inputs with these regions remains modest and has not offset the scaling back of Canada–U.S. trade in parts.
- ◆ Recent growth in Canada's parts trade with Asian, European, and South American supply chains suggests untapped potential.

CANADA'S TRADE WITH THE WORLD

We start with Canada's goods trade volumes with the world by entry stage into the importer's supply chain. (See Table 1 and charts 1 and 2.) The first thing to notice is that Canada's global trade grew in all three categories (entry, middle, and end) from 1990 to 2006. Most of the growth, however,

was during the 1990s, with only marginal growth in the post-2000 period—and since 2003, most of this growth has been on the import side. Most import and export categories even fell slightly during the 2000–03 period, before bouncing back in 2003–06.

This pattern likely reflects the dominance of Canada–U.S. activity in Canada's overall trade. The 1990s was a period of strong U.S. economic growth that followed the signing of the Canada–U.S. Free Trade Agreement. And the post-2001 period came on the heels of the technology bust and a slowdown in U.S. economic growth.

TRADE IN ENTRY-STAGE INPUTS

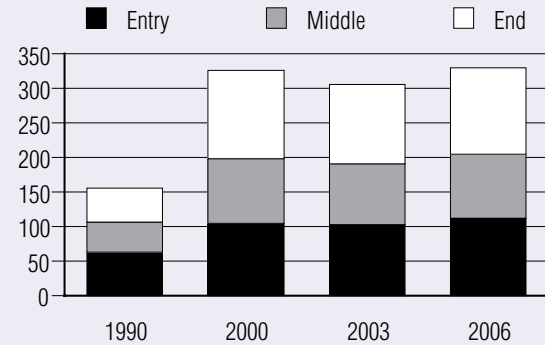
Are Canadians “hewers of wood and drawers of water”? According to our analysis, the share of Canada's trade that is in raw materials—in both directions—has diminished over 1990–2006 (see Table 2), though the trade volumes did grow in the 2003–06 period. The recent rise in trade volumes comes from increased trade with both the United States and Asia. Still, entry-stage exports—mostly oil and minerals—were, and are, much more important than entry-stage imports. Recall that these shares take out the effects of huge swings in commodity prices to provide a truer picture of changes in volumes.

TRADE IN MORE MOBILE INPUTS

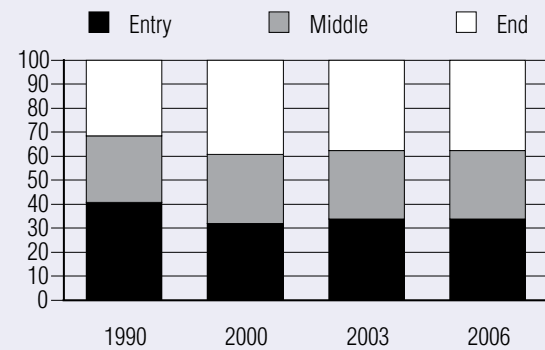
Most entry-stage trade is not mobile, so Canada is not at significant risk of having its commodities sourced from other locations. However, inputs that enter others' supply chains at a later stage are not necessarily bound by

Chart 1
Canada's Exports to the World, Top 25 Goods

Volumes (billions of real 2002\$)



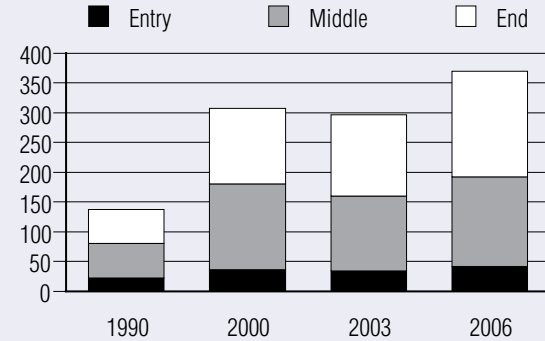
Shares of Top 25 Goods (per cent)



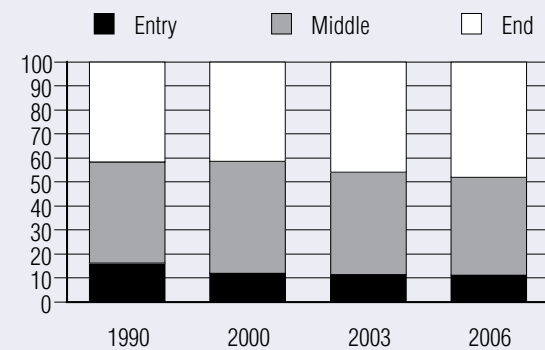
Source: Authors' calculations from Industry Canada's Trade Data Online.

Chart 2
Canada's Imports From the World, Top 25 Goods

Volumes (billions of real 2002\$)



Shares of Top 25 Goods (per cent)



Source: Authors' calculations from Industry Canada's Trade Data Online.

geography, and they may be easier to break down into smaller, efficiency-enhancing activities that can be supplied from different places. Looking at middle-stage trade from the buyer's perspective, we find that over 1990–2006, import volumes almost tripled and export volumes doubled, but their shares did not change. They started the period at 28 per cent (exports) and 42 per cent (imports), and ended in essentially the same place.

Looking at the entire period, however, obscures the important increase in middle-stage trade over the 1990s, followed by the fallback since 2000. The rise in middle-stage trade over the 1990s makes sense, given that was the post-free trade agreement period. Other research confirms that Canadian plants became increasingly

specialized in that decade.¹ Companies appear to have restructured to focus on inputs they produce relatively more efficiently. They then trade for parts that others can make relatively more efficiently.

After 2000, Canada's overall trade data show a drop in Canadian companies' engagement in global and regional supply chains.

The rise in middle-stage exports and imports is also consistent with a significant increase in the import content of Canadian exports over the 1990s (a characteristic that has since tapered off). Statistics Canada research

1 Baldwin et al., *Responses to Trade Liberalization*, p. 1.

Table 1
Canadian Trade With the World and Selected Regions, Top 25 Traded Goods*
(volumes in real terms, 1990, 2000, 2003, 2006)

Importer Stage of Use		Volumes (billions of real 2002\$)							
		Canadian Exports to				Canadian Imports from			
		1990	2000	2003	2006	1990	2000	2003	2006
World	Entry	63	104	103	112	22	36	34	42
	Middle	43	94	88	93	58	144	126	150
	End	49	128	115	124	57	127	136	177
North America	Entry	39	84	82	88	12	17	18	22
	Middle	39	84	77	80	39	94	84	93
	End	44	119	107	110	44	105	97	109
Asia	Entry	12	11	11	14	0	2	2	3
	Middle	3	4	4	5	5	18	17	29
	End	2	3	3	4	13	26	33	52
Europe	Entry	9	7	9	10	6	11	9	9
	Middle	2	3	4	5	6	11	12	15
	End	2	6	6	9	10	18	21	26
South America	Entry	1.0	1.4	1.1	1.4	2.0	3.9	4.0	6.0
	Middle	0.7	1.3	0.8	1.7	0.5	0.9	1.2	2.0
	End	0.6	1.1	0.8	1.4	0.8	1.2	1.2	2.0

*Regional categorizations are from Industry Canada's Trade Data Online.
Source: Authors' calculations from Industry Canada's Trade Data Online.

shows that the import content of Canadian exports rose over the 1980s and 1990s until it peaked at 32 per cent in 1998 and 1999. It then fell every year from 2000 to 2003 to reach a low of 27 per cent in 2003.²

The tapering off of Canada's share of middle-stage trade post-2000 comes at a time when most international measures indicate that the fragmenting of global production is accelerating and new opportunities are being created by the rapid growth of large developing economies. Moreover, the shrinking trade in inputs appears to be widely spread across industries, rather than reflecting a change to a specific industry. The Statistics Canada research finds that 48 of the 59 Canadian industries reduced their import content of exports from 2000 to

2004. Of particular note was the downward trend in the import content of auto exports since the late 1990s, with a slight uptick post-2003—reflecting an increase in output from Asian-owned factories in Canada. According to our analysis, the loonie's appreciation in 2003 and onwards coincided with a slight increase in middle-stage trade thereafter, but the middle-stage share of imported inputs still declined.

The post-2000 tapering off of middle-stage goods trade appears to reflect trends in Canada's trade with the United States. Later, we will discuss the underlying regional trends that the aggregate data may obscure.

TRADE IN FINAL GOODS

Goods trade that does not enter supply chains but goes to consumers represented the most significant share of Canadian trade in 2006, with almost 40 per cent of exports

2 Cross and Ghanem, "Tracking Value-Added Trade," pp. 3.3–3.4.

Table 2
Canadian Trade With the World and Selected Regions, Top 25 Traded Goods*
(shares in real terms, 1990, 2000, 2003, 2006)

Importer Stage of Use		Shares of Top 25 Goods (%)							
		Canadian Exports to				Canadian Imports from			
		1990	2000	2003	2006	1990	2000	2003	2006
World	Entry	41	32	34	34	16	12	11	11
	Middle	28	29	29	28	42	47	43	41
	End	31	39	38	38	42	41	46	48
North America	Entry	32	29	31	32	12	8	9	10
	Middle	32	29	29	29	41	44	42	41
	End	36	42	40	40	46	48	49	49
Asia	Entry	72	62	60	62	1	4	3	4
	Middle	16	23	23	21	29	39	32	34
	End	12	15	16	17	70	57	64	61
Europe	Entry	68	43	50	43	29	28	22	19
	Middle	16	20	20	21	27	27	28	29
	End	16	36	30	36	44	45	50	52
South America	Entry	45	36	40	31	60	65	62	60
	Middle	30	35	30	37	16	16	19	20
	End	25	29	30	31	24	20	19	20

*Regional categorizations are from Industry Canada's Trade Data Online.
Source: Authors' calculations from Industry Canada's Trade Data Online.

and almost half of imports. This represented a large increase in both shares from 1990, at the expense of both early-stage imports and exports. This could suggest lack of integration in other regions' supply chains, or it might suggest higher growth in value-added in the final production stages. However, in the case of Canada–U.S. trade, it likely captures final goods that make use of Canadian inputs at an earlier stage.

SUMMARY OF CANADA'S TOTAL TRADE

Overall, Canada saw large increases in middle-stage trade over the 1990s, as well as important efficiency gains from specialization. However, after 2000, Canada's overall trade data show a drop in Canadian companies' engagement in global and regional supply chains. That did not pick up in any significant way by 2006. This could suggest that Canadian companies are doing less global sourcing to increase their competitiveness, and that foreign

companies are doing less sourcing of Canadian inputs. This is at odds with the global trend of acceleration of global sourcing activities.

CANADA'S TRADE WITH REGIONS

NORTH AMERICA

Since much trade is regional, and goods going to Mexico often get recorded as exports to the United States,³ we look at Canada's trade with the United States and Mexico together to assess Canada's trade within the region.

Two-way trade between Canada and its North American partners taken together nearly tripled between 1990

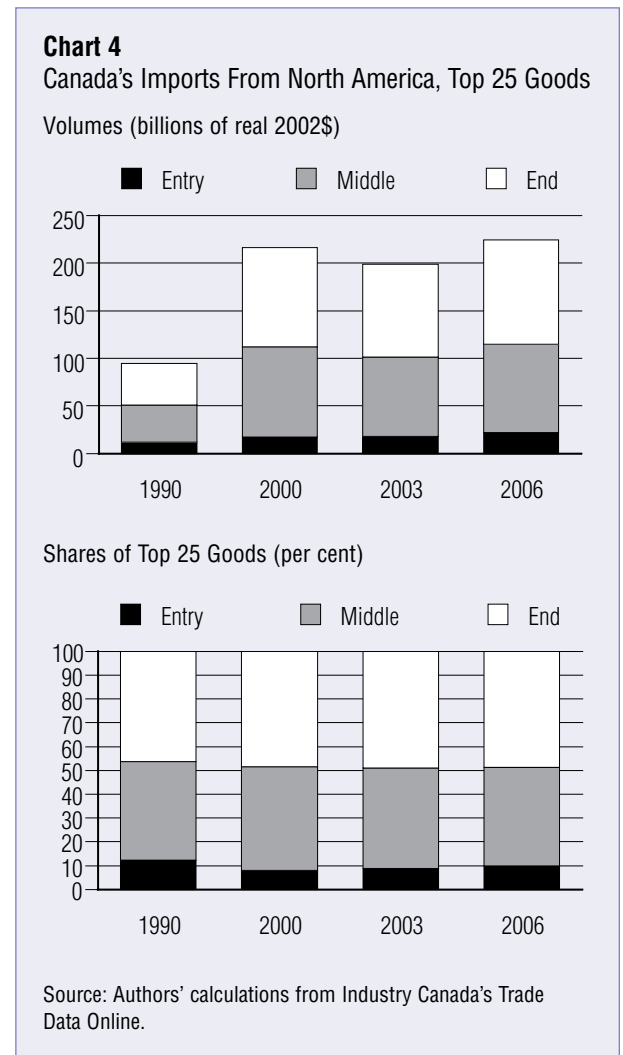
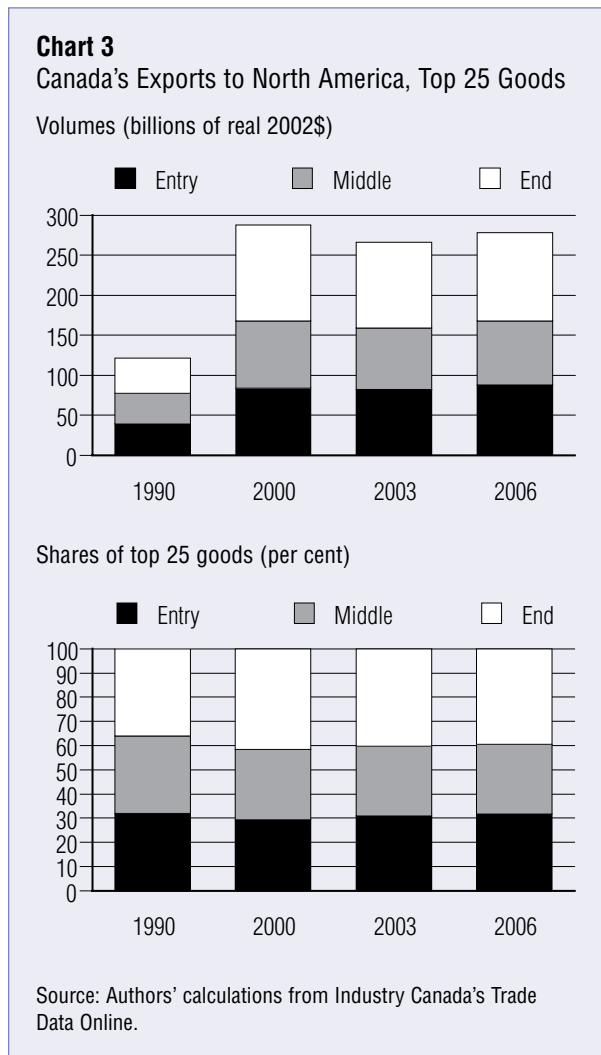
3 Statistics Canada, *Canada–Mexico Merchandise Trade Reconciliation*.

and 2006. The most dramatic increases took place over 1990–2000 (the post-free trade agreement period), with import and export volumes both growing at a 9 per cent compound annual average. Export volumes did not grow at all over 2000–03, and import volumes grew only 1 per cent. They rebounded—to a compound annual average of 2 per cent for exports and 4 per cent for imports—over 2003–06. The business cycle likely explains some of this trend.

Canadian exports that entered North American supply chains at an early stage doubled over the 1990s and then did not grow much over the post-2000 period. (See Chart 3.) Keep in mind that we removed inflation—notably higher oil and gas prices—from the calculation in order to focus on shifts in the trade structure.

Trade in inputs or middle-stage trade volumes between Canada and its North American partners skyrocketed over the 1990s. (See charts 3 and 4.) They fell over 2000–03 and then gained much of the lost ground over 2003–06. The Canadian dollar appreciation that started in 2003 would not account for the drop in volume of trade in inputs in both directions. By 2006, imported input volumes were at the same level as they had been by the end of the 1990s, and exported input volumes had fallen.

End-stage goods followed the same pattern of a huge boost in both import and export volumes over the 1990s, a fallback over 2000–03, and then some regained ground in 2003–06. Imports and exports of final goods and inputs moved in parallel throughout. All this is consistent with the highly integrated nature of Canada’s trade with the



United States. Parts go back and forth across the border at various stages of production, with each country specializing in what it can make most efficiently.

How might we interpret the lack of significant growth in trade in efficiency-enhancing inputs? The post-9/11 border security environment is not the culprit. Conference Board research demonstrates that it does not explain the current slowdown in trade volumes, contrary to popular wisdom.⁴ Another explanation is that businesses have fully reaped the gains from North American integration. More likely, there are still important gains to be had from increased trade in inputs, but various non-tariff barriers stand in the way of businesses' taking advantage of these opportunities. For example, there are a host of regulations—currently in place or in development—that differ slightly between Canada and the United States, not to mention Mexico.

North America clearly dominates the overall results reported earlier. The region represented 84 per cent of Canada's exports and 60 per cent of its imports in 2006 (with inflation removed). Mexico accounts for only a small fraction of this trade.

In the next sections, we look at Canada's trade with other regions. This will help us assess whether Canada has been able to take advantage of opportunities to specialize and increase production efficiencies in trading with certain regions, or whether the aggregate data truly reflect a geographically widespread scaling back in Canada's involvement in global and regional supply chains.

ASIA

Canada's goods exports to Asia represented just over one-20th of total Canadian goods exports, and a much larger one-fifth of goods imports in 2006—with price effects removed. There is clear evidence from Statistics Canada that Canada's export volumes to the United States are overstated, while export volumes to the rest of the world are understated.⁵ Therefore, Canada's export volumes to Asia likely represent a larger share than these numbers show. And Canada's trade volumes with Asia

have grown faster than its trade volumes with North America in the post-2000 period—with dramatic growth on the import side. However, other Conference Board research suggests that the export growth is weaker than official statistics show.⁶

The majority of Canada's goods exports to Asia enter importers' supply chains at an early stage (see Table 1 and Chart 5) and are mostly commodities such as pulp and paper and cereals. Their volumes increased by a rapid 8 per cent compound annual average over 2003–06, despite the exclusion of price fluctuations from our analysis. Still, the entry-stage share of total trade declined to 62 per cent in 2006 from about 72 per cent in 1990. The faster growth in trade in parts and final goods exports over the 1990s accounted for this, suggesting more tightly linked Canada–Asia supply chains. Canada did not, however, appear to increase or even maintain the pace in the post-2000 period. This suggests that Canada may not have been taking sufficient advantage of opportunities to supply inputs into Asian supply chains, despite the rapid growth in this region post-2000.

Although Canadian companies do not appear to be well represented in Asian supply chains, they appear increasingly to be using Asian inputs, such as machinery parts, to make Canadian supply chains more competitive. Over 2003–06, the use of imported Asian inputs at a middle-stage grew by a massive one-fifth annually, following weak growth in 2000–03. (See Chart 6.) Still, imports from Asia are dominated by end-stage imports, such as electronics. This likely reflects Asian supply chains in which goods are made with parts and services throughout Asia, for shipping directly to consumers outside of the region.

In sum, Canada–Asia supply chains are not tightly linked, but they appear to have moved toward becoming more linked over 1990–2006. However, Canada is doing a much better job of using Asian inputs in its supply chains than in selling inputs into Asian supply chains. Note also that examining trade alone does not represent the full picture: much trade likely take place with Asia through foreign affiliate sales, driven by foreign direct investment. For

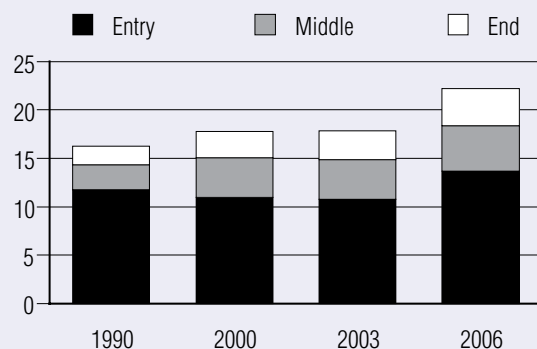
4 Burt, *Tighter Border Security*.

5 Goldfarb and Thériault, *Canada's "Missing" Trade*, p. 11.

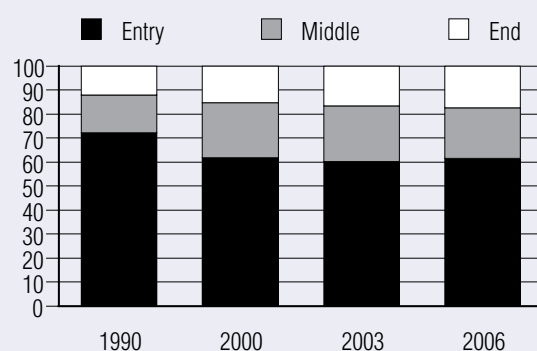
6 *Ibid.*, p. 17.

Chart 5
Canada's Exports to Asia, Top 25 Goods

Volumes (billions of real 2002\$)



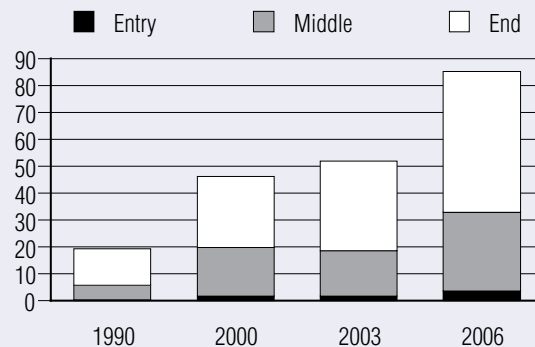
Shares of Top 25 Goods (per cent)



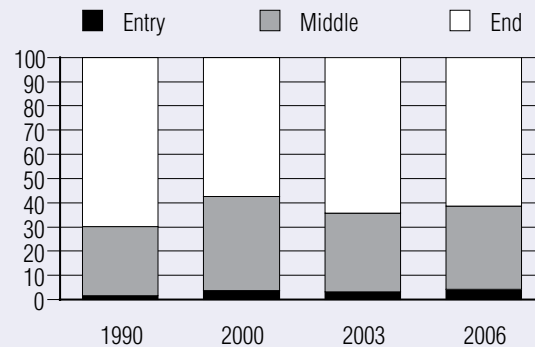
Source: Authors' calculations from Industry Canada's Trade Data Online.

Chart 6
Canada's Imports From Asia, Top 25 Goods

Volumes (billions of real 2002\$)



Shares of Top 25 Goods (per cent)



Source: Authors' calculations from Industry Canada's Trade Data Online.

example, the Asia Pacific Foundation of Canada recently found that more Canadian companies are investing in Asia to service other markets, but Canadian companies are still slow—relative to peer countries—to plug into Asian production chains.⁷

EUROPE

Western and Eastern Europe combined bought 7 per cent of Canada's exports in 2006, and 13 per cent of Canada's imports came from that region. Again, as related Conference Board research shows,⁸ the export share is likely understated due to overcounting Canada–U.S. trade and undercounting Canada's trade with the rest

of the world. In contrast to the Canada–U.S. pattern, in which trade fell off post-2000, export volumes to Europe grew by more in the post-2000 period (8 per cent compound annual average) than in the 1990s (3 per cent). Import volumes also grew at a steady rate (about 5 per cent) over both the pre- and post-2000 periods, and from a higher starting point than exports.

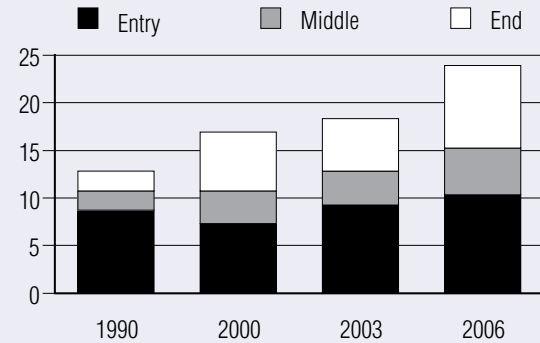
Canada's entry-stage export volumes dominate the mix at 43 per cent of exports in 2006. (See Chart 7.) But this represents a considerable change since 1990. Canada has shifted substantially away from selling goods into European supply chains at this early stage in favour of more sales of advanced inputs and final exports. More than half of all imports, by contrast, are of final goods, a steady increase since 1990. (See Chart 8.)

7 Asia Pacific Foundation of Canada, *More Canadian Companies Moving Operations to Asia*.

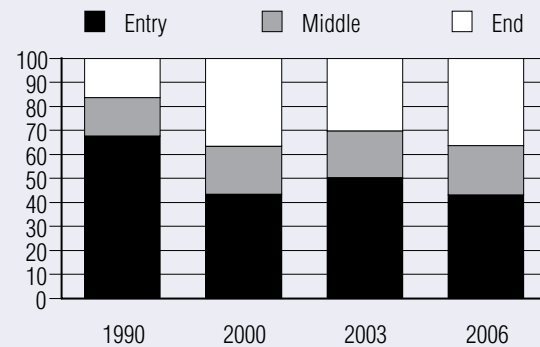
8 Goldfarb and Thériault, *Canada's "Missing" Trade*, p. 11.

Chart 7
Canada's Exports to Europe, Top 25 Goods

Volumes (billions of real 2002\$)



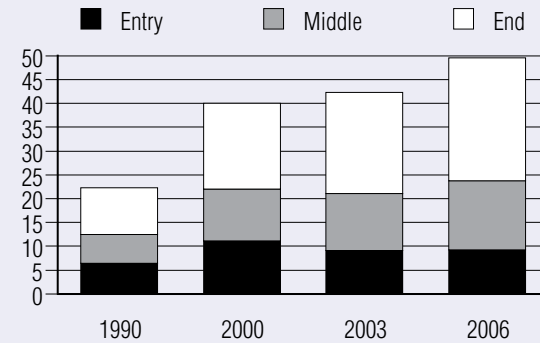
Shares of top 25 goods (per cent)



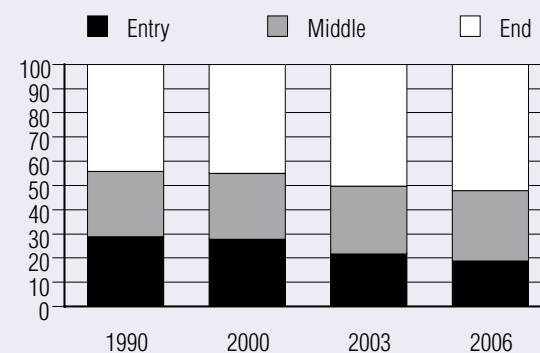
Source: Authors' calculations from Industry Canada's Trade Data Online.

Chart 8
Canada's Imports From Europe, Top 25 Goods

Volumes (billions of real 2002\$)



Shares of Top 25 Goods (per cent)



Source: Authors' calculations from Industry Canada's Trade Data Online.

Two-way trade in more advanced inputs with Europe increased steadily both pre- and post-2000. In fact, middle-stage exports destined for European supply chains accelerated in recent years—at 11 per cent compound annual average growth over 2003–06—with import volumes at this same stage growing at 7 per cent during that period. This is consistent with increasingly tightly linked supply chains, even though these amounts are still relatively small. This continued growth suggests that efficiency gains may still be had from greater specialization and trade in parts between Canada and Europe.

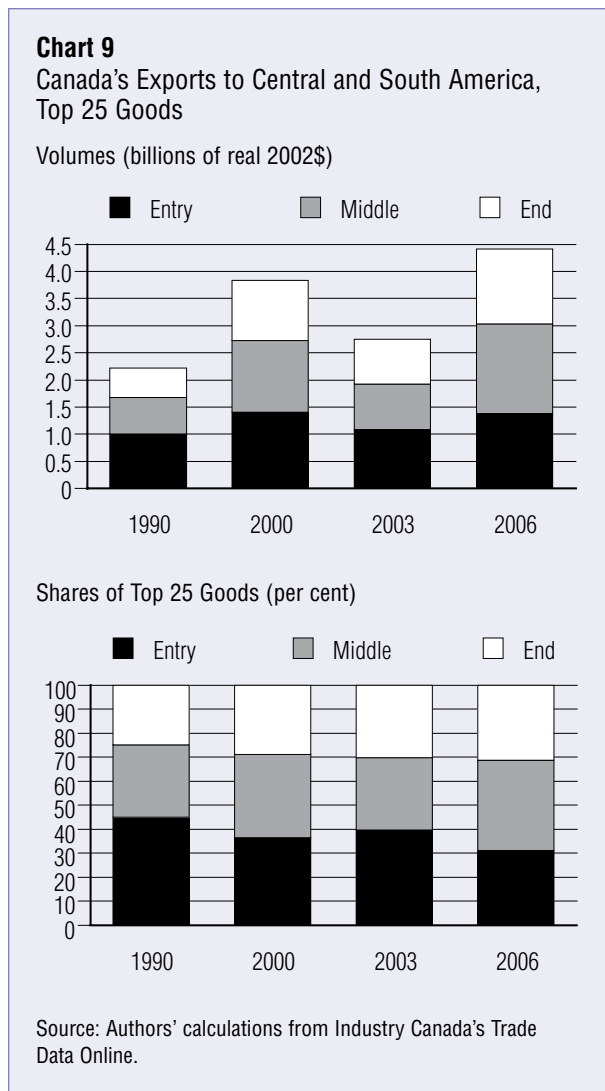
Canada also saw large relative growth in its end-stage import volumes from Europe, particularly in the more recent period. This might mean that Canada is uninvolved in European supply chains for these products, though it

is not clear whether Canada supplies related inputs at an earlier stage. Again, this trade-focused picture does not capture the important role of direct investment and foreign affiliate sales in Canada's interactions with Europe.

CENTRAL AND SOUTH AMERICA

Canada's goods exports to Central and South America represented only 1 per cent of total Canadian goods exports and 3 per cent of goods imports in 2006. As discussed above, the official figures understate Canada's non-U.S. goods exports. In this case, Canadian exports that get shipped to South America through the United States could be mistakenly recorded as exports to the United States. Keeping this in mind, the export share is likely slightly higher, though still very modest.

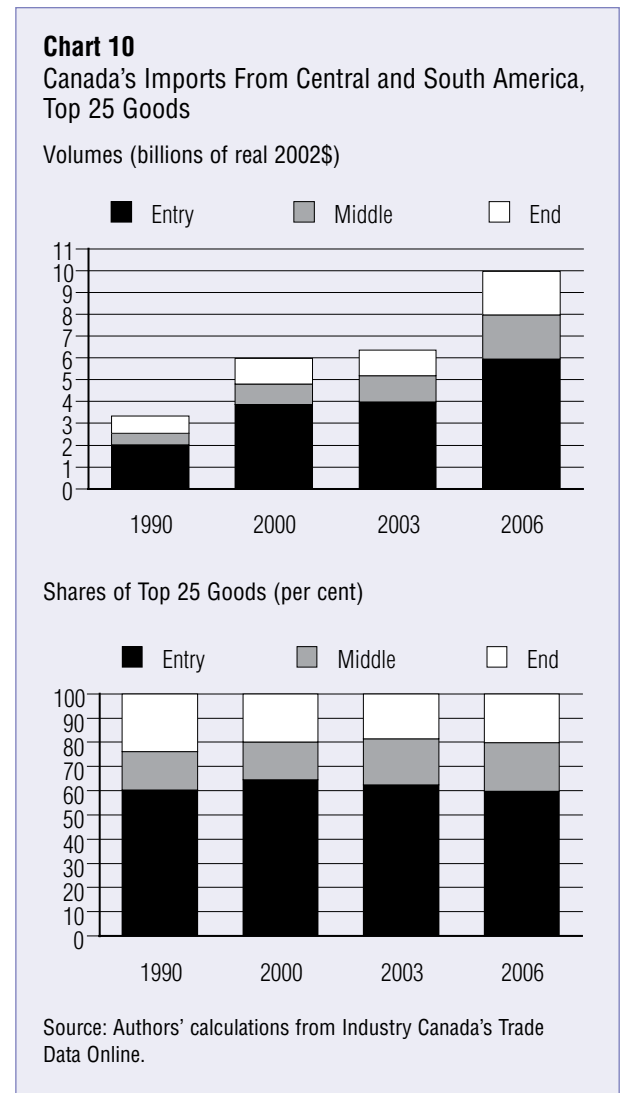
Export volumes are split fairly evenly among the three stages, from the South American supply-chain perspective. (See Chart 9.) Imports are dominated, however, by early-stage inputs into Canadian supply chains (see Chart 10), even with price fluctuations removed. Although the amounts are small, Canada’s middle-stage inputs supplied to South American supply chains grew dramatically—by over a quarter on average annually—from 2003 to 2006. Imported middle-stage inputs also grew by about one-fifth on average in the most recent period. Again, this contrasts with stagnant Canada–U.S. trade during that same period. The increase in traded inputs may suggest potential to capitalize on more Canadian inputs into South American supply chains, and vice versa. End-stage import and export volumes also grew significantly—but from a low base—in the more recent period.



In sum, trade with Central and South America is relatively modest, but recent dramatic growth in traded inputs suggests increasing supply-chain integration, with perhaps untapped potential.

SUMMARY OF CANADA’S TRADE WITH REGIONS

The overall trade data suggest a scaling back of Canada’s involvement in global and regional supply chains in recent years. However, stripping away Canada’s trade with North America shows that Canada has become more integrated—especially in recent years—in other regions’ supply chains. Still, the overall amounts remain modest and may indicate important untapped potential.



CHAPTER 3

Implications for Business and Government

Chapter Summary

- ◆ Since the evidence is clear that integration within North America has stagnated but trade with the United States continues to dominate Canadian trade, governments need to remove remaining Canada–U.S. non-tariff trade barriers.
- ◆ But for businesses to take full advantage of opportunities elsewhere, governments also need to remove impediments to globally imported inputs.
- ◆ Businesses must do better at taking full advantage of other regions' strengths—both expertise and inputs—to improve their competitive position, capitalizing on the recent growth in trade in advanced inputs with Europe, South America, and Asia.
- ◆ Countries and companies likeliest to succeed in the face of rapid global economic change are those that are committed to new ideas and technologies and flexible in their thinking about how to contribute to and utilize global supply chains.

SEIZING FULL ADVANTAGE OF OPPORTUNITIES

Our analysis shows that Canadian companies boosted their use of imported inputs over the 1990s. But they have been more cautious in doing so in recent years, even with the dollar's appreciation. A recent Statistics Canada analysis suggests this reluctance may have contributed to the post-2000 slowdown in Canadian productivity growth.¹ If correct, this is a worrisome development.

Our analysis shows that Canadian companies boosted their use of imported inputs over the 1990s. But they have been more cautious in doing so in recent years, even with the dollar's appreciation.

The analysis also shows, however, that the overall plateau in Canada's two-way use of imported inputs largely reflects decreased Canada–U.S. trade in inputs. Trade in inputs with other regions has been increasing. Unfortunately, it is not increasing fast enough to compensate for the drop-off in Canada–U.S. activity. Further, trade in inputs is dominated—especially in the case of Asia—by the use of imported inputs, with Canadians not supplying significant inputs into regional supply chains elsewhere.

¹ Cross and Ghanem, "Tracking Value-Added Trade," p. 3.9.

The summary finding of a downturn in the use of imported inputs could suggest that Canadian companies are not taking full advantage of imported inputs from all regions, including North America, to improve their competitive positions.

Our results reflect the sum of many individuals' profit-maximizing decisions to trade and invest, and governments cannot change those decisions. We therefore recommend that businesses focus on what they need to do to fully seize opportunities, and that government prioritize the removal of barriers to efficient business decisions.

Businesses need to do the following:

- ◆ Identify and focus on activities in global and regional supply chains in which they can be globally competitive and work to create a strong global reputation.
- ◆ Take full advantage of other regions' strengths—both expertise and inputs—to improve their competitive position, capitalizing on the recent growth in trade in advanced inputs with Europe, South America, and Asia.
- ◆ Although Canada–U.S. trade will still dominate opportunities, businesses need to seek opportunities to provide inputs into other regional supply chains, where future rapid gains in parts trade seem likeliest to occur.

Governments need to do the following:

- ◆ Prioritize the elimination of remaining barriers to Canada–U.S. trade. These include regulatory differences between Canada and the United States in areas where regulatory goals are similar. The stagnation of Canada–U.S. trade in inputs is likely due to such barriers, which impede businesses from taking advantage of these opportunities.
- ◆ Eliminate remaining tariff and non-tariff barriers to globally imported inputs. One example is country-of-origin rules. These rules—under which companies must meet certain criteria as to the origin of the materials in their goods to qualify for duty-free treatment—no longer make sense in such a highly integrated world. They simply penalize the competitiveness of smaller companies and those that use imported inputs. Eliminating remaining tariffs—which are no longer an important policy tool nor an important revenue source—would eliminate the need for origin rules.

BROADER IMPLICATIONS

The broader context of accelerating use of global and regional supply chains by companies across the globe has important consequences for Canadian living standards, public policies, and business strategies. With competition intensifying for each activity along a global supply chain, Canadian businesses compete for contracts, not just against businesses in other provinces or states, but with global competitors. And all jurisdictions and their policy-makers are trying to attract the same high value-added parts of supply chains. Decision makers need to take that broader context into account as they consider the findings in this paper.

EXPECT AND PREPARE FOR RAPID CHANGE

We found significant shifts in both the trade structure and its geographic breakdown over the 1990–2006 period, including in the most recent few years. This is set against the backdrop of recent dramatic and rapid global economic shifts, which do not seem likely to stop. Countries, companies, and individuals that are the most flexible are likeliest to succeed in the face of these rapid changes.

The stagnation of Canada-U.S. trade in inputs is likely due to remaining Canada-U.S. non-tariff barriers.

Businesses need to do the following:

- ◆ Frequently reassess how they allocate production within Canada and across national borders, in response to quickly changing conditions.
- ◆ Constantly learn, adapt, innovate, and use new technologies. A recent OECD study finds that the smaller companies that were the most successful in carrying out activities in global supply chains were open to new ideas and technologies and worked with global partners to take advantage of information flows and learning opportunities.²
- ◆ Focus not on a particular industry, but on activities and technologies that apply to several industries.

2 OECD, "Enhancing the Role," pp. 41–60.

Governments need to do the following:

- ◆ Adopt policies that enable individuals and companies to adapt quickly. This includes education that prepares people for more job changes, and elimination of barriers to interprovincial labour mobility. This way, policy-makers can help ensure that the benefits of globalization are widely shared.

The overall amounts of Canada’s integrated trade with other regions remain modest and may indicate important untapped potential.

ATTRACT HIGH-VALUE MOBILE ACTIVITIES

A key difference between middle-stage inputs and most entry-stage ones is that raw materials extraction is bound by geography, whereas producers can theoretically buy other entry-stage inputs and middle-stage inputs anywhere. The results in this paper suggest we are falling short in taking advantage of opportunities in parts of the supply chain that are mobile. This will be even more important in the event of a drop in commodity prices or other changes that reduce demand for entry-stage inputs.

Businesses need to do the following:

- ◆ Move to higher-value activities within each supply-chain stage. A clear identification of a company’s globally competitive activities, combined with a heavy emphasis on constant learning, should encourage this.

Governments need to do the following:

- ◆ Remove barriers to services competition in Canada, to ensure that the appropriate clusters of supporting services are available to attract and retain high-value activities here.
- ◆ Invest in life-long learning to ensure that Canada can benefit from high-value activities locating here. Companies will continue to most efficiently source standardized tasks from low-wage economies, and so Canadian workers must be prepared to move to other types of activities.
- ◆ Make significant investments in Canada’s currently inadequate infrastructure, including virtual or technological infrastructure.

CONCLUSION

This paper aims to shift Canadians’ thinking about trade to a global and regional supply perspective. Our approach recognizes that much global production and trade takes place within regions and also between regions. It also recognizes that trade is not strictly in final goods, but increasingly is in inputs into others’ supply chains. Our study asked at what stage of their supply chains other regions source from Canada, and at what stage Canada sources from other regions into its own supply chains. And we examined what matters to decision makers today: recent changes in Canada’s trade structure as a result of rapid changes in the global economy. (To focus on changes to the trade structure, we took out the effects of price fluctuations.)

The overall results suggest that Canada’s involvement in global and regional supply chains has scaled back in recent years, after a dramatic increase over the 1990s. However, stripping away Canada’s trade with North America shows that Canada has become more integrated—especially in recent years—in other regions’ supply chains. Still, in some regions, such as Asia, Canada is doing much better at tapping into their inputs than tapping into their supply chains. Moreover, the overall amounts of integrated trade remain modest and may indicate important untapped potential.

In the face of rapid global economic change and the changes in Canada’s role in global supply chains documented here, Canadian leaders need to do a better job of seizing opportunities, adapting to rapid change, and attracting high-value mobile activities. Since the results in this report reflect the sum of many individuals’ decisions, the onus is on businesses rather than governments to seize opportunities. Businesses need to identify areas in which they are globally competitive, and take full advantage of other regions’ strengths—both expertise and inputs—to improve their competitive position. They may be able to further capitalize on the recent growth in trade in advanced inputs in Europe, South America, and Asia. Furthermore, to succeed in this environment, companies need to remain open to new ideas and technologies. They also need to think more broadly about the range of companies that could use their inputs or expertise.

Governments need to adopt policies that enable individuals and businesses to adapt quickly. To address the plateau in Canada–U.S. parts trade, they should remove remaining cross-border barriers, such as regulatory differences where regulatory goals are similar. To capitalize on potential gains in other regions' supply chains, they should remove barriers to globally imported inputs. This will allow businesses to make efficient decisions—to specialize in what they make most efficiently and to buy globally that which others make more efficiently.

Global engagement and trade in inputs considerably benefit Canadian living standards. Yet the full implications of global and regional supply chains are unclear. Our results represent only a part of the picture, particularly given limitations in services trade data. Investigating the ramifications of these global and Canadian trends should be a research and policy priority.

APPENDIX A

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APPENDIX B

Related Products and Services

The International Trade and Investment Centre (ITIC)

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