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Table of Contents

Foreword

Patricia Fuller .. i

Part I: Issues in Trade and Investment Facilitation

Is There a Case for Trade and Investment Promotion Policy?
Brian R. Copeland1

Integrated Trade Services Models: Best Practices in
E Trade Finance
Gilles Moran and Peter Cowan ... 65

Part II: Regional Trade Agreements

Assessing the Impacts of FTAs: Issues for the Small, Open
and Regionally Integrated Country
Dan Ciuriak 101

The Strength of Cross-Border Linkages between U.S.
and Canadian Industry
Joseph Francois and Laura M. Baughman 123

Canada-Chile Free Trade Agreement @ Ten:
Beyond the Numbers
William Dymond .157

Preliminary Assessment of the Economic Impacts of a
Canada-Korea FTA
Dan Ciuriak and Shenjie Chen .. . 187

Report of the Canada-Japan Joint Study on
Benefits and Costs of Further Promotion of
Bilateral Trade and Investment235

Foreword

This volume brings together the results of some of the trade-related policy research undertaken within, on behalf of, or in collaboration with Foreign Affairs and International Trade Canada over the past year. Launched in 2001 as part of the response to the Government of Canada's *Policy Research Initiative*, a government-wide effort to re-create and expand its research capacity, the *Trade Policy Research* series is now in its seventh edition.

Previous volumes have traced the debate in trade policy circles since the watershed developments at the 1999 WTO Ministerial in Seattle, following the progress of the Doha Round, touching on topical issues such as the proliferation in regional trade agreements, and showcasing research and analysis conducted within the Government of Canada on various aspects of trade policy and economic globalization more generally.

This year's volume takes up different facets of two major elements of trade policy: trade promotion activities and regional trade agreements.

Part I has two papers. The first sets out the theoretical case for public sector engagement in trade promotion and surveys the economic literature on the potential impacts of such programs. The second examines the emerging leaders in integrated trade service provision based on electronic platforms, with a particular focus on electronic trade finance.

Part II has a number of papers that range from discussions of methodological issues confronted in impact assessments of free trade agreements, to assessments of the impact of some of Canada's existing trade agreements, to assessments of the potential economic impacts of future agreements.

Through this volume, Foreign Affairs and International Trade Canada seeks to continue to contribute actively to the development and dissemination of knowledge concerning the role of international trade and investment in Canada's economy and in the global economy more generally, while at the same time

stimulating the development of policy research capacity, and further developing links with professional and academic researchers in the field of international commerce.

Patricia Fuller
Chief Economist
Foreign Affairs and International Trade Canada

Ottawa
June, 2008

Part I

**Issues in Trade and Investment
Facilitation**

Is There a Case for Trade and Investment Promotion Policy?

Brian R. Copeland*

Abstract

Despite major reductions in tariffs and other policy-induced barriers to trade over the past 50 years, there is a great deal of evidence that substantial trade frictions between countries still exist. Whether government policies aimed at reducing trade and investment costs lead to welfare improvements depends on the source of the costs and the mechanism by which costs are reduced. This paper investigates the rationale for export and investment promotion programs, focusing on market failures. The tentative conclusions are that sunk costs prevent many firms from becoming engaged in foreign markets, and that many of these costs are information related, raising two potential sources of market failure—information spillovers (or externalities), and problems related to asymmetries of information. The market creates incentives for firms to respond to these problems in various ways. Theory and some limited empirical however suggest that these responses go only part way towards resolving the underlying problems establishing a market-failure based case for some government activity in the area of export and investment assistance and promotion. The types of activity that may help address market failures are discussed and the small empirical literature on the effectiveness of existing export promotion programs is examined.

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Introduction

Despite major reductions in tariffs and other policy-induced barriers to trade over the past 50 years, there is a great deal of evidence that substantial trade frictions between countries still exist. This is not surprising—it is costly to trade, even within a country. There are transportation costs, costs of finding customers, costs of establishing, joining and maintaining distribution networks, costs of dealing with more than one regulatory environment, and so on. Some of these are a natural consequence of dealing with different types of customers, partners, and suppliers, possibly over large distances. Others are the result of heterogeneity in government regulations across countries due to differences in history, culture, and other local circumstances. Yet other costs are due to government policies which directly or indirectly restrict the movement of goods, services and people across borders.

Many costs must be borne prior to, or in the early stages of, attempting to export to foreign markets. To the extent that they reflect a need to acquire information relevant to dealing in new markets, these costs are sunk—they are for the most part not recoverable if the attempt to establish a foreign market presence is unsuccessful. Sunk informational costs also deter direct investment flows between countries—firms considering foreign investment have to develop knowledge of the foreign regulatory environment, foreign supply networks and foreign labour relations. Hence both trade and investment are lower than they would be in the absence of such costs.

It is tempting to argue that government policies aimed at reducing trade and investment costs would lead to welfare improvements; however, this depends on the source of the costs and the mechanism by which costs are reduced. In a world with heterogeneity in location, culture, and government behaviour, many of these costs are inevitable and attempts to provide subsidies or to introduce other policies to offset them would simply create other inefficiencies. Moreover, specialized firms exist to help importers and exporters cope with some of the difficulties

in entering new markets—that is, the presence of trade-inhibiting costs creates incentives for the private sector to develop expertise to overcome them. However, if market failures or political failures contribute to trade costs, then there is a potential for policy to reduce these costs and to increase the flow of trade and investment.

Many governments operate export and/or investment promotion and assistance programs. Since trade agreements constrain government behaviour by placing restrictions on explicit and implicit export subsidies, these programs typically offer indirect support and broadly available information and logistical assistance, often coordinated through consulates. Although there is a small empirical literature that attempts to determine whether such programs are effective in increasing trade and investment, there has been relatively little work that addresses the question of whether such programs are justifiable at all.

This paper investigates the rationale for export and investment promotion programs. Although in the past there have been various motives for promoting trade and investment—ranging from mercantilism to building international alliances—I focus on market failures. I first ask whether there exist market failures that tend to systematically inhibit the flow of trade and investment; and then ask whether there is any reason to believe that government programs can address these market failures better than private sector responses. If these two criteria are satisfied, then I will argue that there may be a role for government to act to improve the functioning of the market by helping firms to overcome some of the barriers to trade and investment.

The literature in this area is recent, and still somewhat thin. Much research still needs to be done, and so the conclusions reached in the paper are tentative. I first briefly review the empirical evidence on trade costs. A variety of evidence suggests that sunk costs prevent many firms from becoming engaged in foreign markets, and that many of these costs are information related. I next review the theoretical literature relevant to information-related sunk costs, and private sector responses to these problems. Two sources of market failure underlie much of this

analysis—information spillovers (or externalities), and problems related to asymmetries of information. The market creates incentives for firms to respond to the problems in various ways—industry associations attempt to internalize the free rider problem arising from information spillovers; intermediaries and middlemen help firms deal with firm-specific information problems; and firms adapt their organizational forms to reflect the informational environment in which they operate. However, theory suggests that these responses go only part way towards resolving the underlying market failures, and there is some limited evidence consistent with this view. This suggests that there is a market-failure based case for some government activity in the area of export and investment assistance and promotion. The types of activity that may help address market failures will be discussed. Finally, I briefly review the small empirical literature on the effectiveness of existing export promotion programs.

Evidence on trade costs

A large literature attempts to measure trade costs [see Anderson and van Wincoop (2004) for a recent survey, and Curtis and Chen (2003) for a focus on Canada]. Much of the early work used aggregate data and attempted to measure the "border effect"—that is, the extra costs of trading across an international border in comparison with the costs of trading within a country [McCallum (1995) is the seminal paper]. Recently, a great deal of work using firm level data has looked at the microeconomics of trading; this has helped to build up a picture of the variations in engagement with international markets across firms [see Bernard and Jensen (1995) for early work, and Greenaway and Kneller (2007) for a recent survey]. Some work has attempted to determine the sources of, and measure, different types of trading costs, although this work is still in its early days.

Firm level data reveal that there is a great deal of heterogeneity across firms in how engaged they are in international trade. A number of papers have found that many firms do not export. For example Bernard and Jensen (1995, 1999) find that

the majority of US firms in the tradable goods sector do not export. Eaton, Kortum and Kramarz (2004) find that only 17.4 percent of French manufacturing firms export. Bernard, Jensen and Schott (2005) find that, among those firms that do export, much of the activity is concentrated in a relatively small number of firms—81 percent of US trade is accounted for by the top 1 percent of firms that trade. It is important to put keep these numbers in perspective. It is not just international borders that inhibit exporting: many firms sell only in a very localized market within their own country as well. In one of the most detailed studies of the effects of distance on shipping, Hillberry and Hummels (2005) use establishment-level data on manufacturing shipments within the U.S. They find two key results. First, the major impact of distance on shipments occurs within a very small radius of the establishment location. Shipments within a zip code region (roughly a four mile radius) are three times higher than outside the same region. And they find that there is a huge decline in shipments as distance increases up to about two hundred miles, but not much decline after that. That is, the effect of distance on shipping is highly nonlinear. Second, they find that the major reason for the decline in shipments as distance increases is that the number of establishments shipping commodities falls with distance, and the number of commodities a given establishment ships falls.

These results are important for a number of reasons. First, they are relevant for studies of the border effect, and suggest that the cost of shipping over borders may be biased upward in studies using aggregate data. For example, previous studies have found high levels of state-level home bias—suggesting that there may be state level border effects within the US. Hillberry and Hummels show, however, that the state-level home bias effect disappears when computing measures of distance using 5-digit zip codes. This is because of the nonlinear effect of distance on shipments. Most of the trade friction due to distance occurs within a very short radius of the establishment and so cannot be explained by border effects.

Second, the result that the main cause of the decline in shipments over longer distances is due to the extensive margin (decline in establishments shipping and commodities shipped) is consistent with other evidence that many firms do not export. However, they find that this is just as true within countries as it is between countries. The question of what causes this is not resolved by their work. They suggest it is due to agglomeration: firms producing specialized intermediate goods locate near each other. However, presumably firms locate near each other in part because of the costs of trading over large distances. The nature of these costs cannot be inferred from their work, but the results are consistent with evidence of fixed costs of trading which prevent many establishments from exporting at all.

Much of the evidence from other studies is consistent with the existence of fixed and/or sunk costs of exporting. For example, Bernard and Jensen (2004) using US data infer evidence of substantial sunk entry costs into foreign markets from a pattern of behaviour in which exporting in the past has a large and significant impact on the likelihood of exporting in the present. Roberts and Tybout (1997) find similar evidence using Colombian data. Using aggregate data, Eichengreen and Irwin (1996) find that history matters for the pattern of bilateral trade flows, a result that is consistent with fixed costs of beginning to export.

A large amount of international trade is in intermediate goods and there is evidence that international fragmentation of production and the importance of international supply chains has been increasing over time. Hummels, Ishii and Yi (2001) calculate an index of vertical specialization in international trade for 10 OECD countries—essentially the fraction of the value of a country's exports accounted for by embodied imports. Vertical specialization accounts for about 21 percent of exports from these countries, and its importance increased by about 30 percent between 1970 and 1990.

Trade costs affecting trade in intermediate goods are influenced by many of the factors that affect trade in final goods, but there are some differences as well. In particular, there can be a cumulative effect of trade costs, if goods and components cross borders during various stages of production. In an interesting

paper Yi (2003) argues that changes in the cumulative effect of trade costs can be important in explaining both the overall growth of world trade, and the increased vertical specialization during the past few decades. The argument is that small reductions in trade barriers will not encourage vertical specialization, but that larger reductions will, so that the relation between the reduction in trade costs and the volume of trade is non-linear—the elasticity of the response of trade flows to reductions in trade costs can be increasing as trade barriers get lower.

Sources of costs of accessing foreign markets

We still do not have a clear picture of the sources of costs of accessing foreign markets, although there are pieces of suggestive evidence. Here I focus on costs that are not due to explicit policy-induced trade barriers, and which could be affected by trade and investment promotion and assistance programs. Consequently I also do not discuss transportation costs in any detail.

Infrastructure

Infrastructure is not the focus of this paper; here I just note that transportation and communication infrastructure play a large role in affecting trade costs, and that public policy plays a critical role in the development and maintenance of infrastructure that is relevant to international trade. A couple of recent papers provide some evidence on this. Limao and Venables (2001) construct indices of the quality of a country's transportation and communications infrastructure and show that these have a significant effect on both transportation costs and trade volumes. Dollar et al. (2003) use survey data from Latin America on the quality of infrastructure (including power outages, time to get telephone connections installed, and time required for customs clearance) and find that export success at the firm level is negatively related to poor infrastructure.

While one might expect that problems with infrastructure would be more of an impediment to trade in developing countries than in developed countries, there is some theoretical work

which suggests that public infrastructure may not be efficiently provided. Bond (2006) and Bougheas et al. (2003) develop theoretical models of public infrastructure investment in the context of international trade. Since investments in communication and transportation infrastructure benefit producers and consumers in both countries via effects on trade, they argue that there are spillover effects across countries which result in the levels of infrastructure being suboptimal from a global perspective.

Public policy regarding the organization and management of infrastructure also has an effect on trade flows. Fink et al. (2002) argue that public policies in the maritime shipping industry result in market power that leads to substantial impediments to trade by raising shipping costs. Micco and Serebrisky (2004) find that improvements in airport infrastructure and deregulation in the air cargo market resulted in reductions in transportation costs.

Much of the emphasis in this paper will be on policies designed to help domestic firms in foreign markets. However, it is worth emphasizing that investment in transportation and communication infrastructure in one's own country is one of the key ways that governments can facilitate trade.

Information: Networks and Contracting

Information costs impede trade in a variety of ways. Rauch (2001) provides a good survey. These include costs of identifying new markets, developing distribution channels, finding suitable and reliable suppliers, dealing with local regulations, learning how to adapt a product to local market conditions, learning the right marketing strategy for the foreign market, issues of asymmetric information about quality of both one's own product and those utilized in the foreign market, and many others. Information issues are also important for trade within one's own country, but I will focus on those issues which are important for foreign trade and investment.

Although it may be intuitively clear that information problems exist, evidence concerning the magnitude of the problems

is difficult to come by. However, several influential recent studies suggest that information problems are empirically relevant.

Portes and Rey (2005) find that information costs play a significant role in inhibiting international trade in financial assets. Previous work had documented a significant home bias in asset holdings, and several authors had suggested that "informational distance" between countries may be part of the explanation. Portes and Rey use a gravity model, where the volume of asset trade between countries depends on their incomes and on trading costs. They first confirm that the physical distance between countries reduces asset trade flows. Since financial assets are essentially weightless, they argue that transport costs cannot be the explanation, and they investigate whether distance may be a proxy for information costs. They use measures of information flows between countries, such as the number of telephone calls between countries and the number of branches in country j of banks with headquarters in country i (to explain trade between i and j). The hypothesis is that large values of either of these variables indicate better information flows and therefore should be associated with a larger volume of asset trade. Their results confirm this—both variables are statistically significant, and both tend to increase asset trade flows. Moreover, the sign on the distance coefficient gets smaller once these variables are included, suggesting that distance is indeed proxying for information.

Portes and Rey (2005) also use the same approach to investigate the effects of information flows on trade in manufactured goods. As with asset trade, better information flows (as captured by their telephone and banking variables) are associated with increased goods trade. And as with asset trade, the coefficient on distance falls once the information variables are included: the elasticity of trade flows with respect to physical distance falls from -0.55 to -0.28 . The distance variable is often thought to be capturing transportation costs when explaining goods trade; this suggests that it is also capturing the effects of information flows.

Nicita and Olarreaga (1999) test for two different effects of information. First, if there are fixed costs of entering and devel-

oping a reputation in new markets, one would expect that current export success in a given market would depend on past success. Evidence for this has been found in firm-level data in the work of authors such as Bernard and Jensen (2004). Nicita and Olarreaga also find this effect using aggregate trade data from four developing countries (Egypt, Korea, Malaysia and Tunisia). Second, they attempt to estimate the effects of information spillovers across countries; that is, the extent to which export success by Egyptians in, say, the US could enhance Egyptian success in other countries via information flows between the US and these other potential trading partners of Egypt. To measure information flows between two countries, they use trade in newspapers between the countries and telephone calls between the countries. They interact exports to a given country with a variable measuring information flows between the importing country and other countries. The coefficient on this interacted variable is positive and significant, which is interpreted as providing support for the notion that (1) information flows matter and (2) information spillovers across countries matter for export success.

If information flows matter for trade, then informal networks of friends, relatives, and other personal contacts should facilitate trade. One channel through which these networks could be developed is via immigrant flows. Gould (1994) finds that, all else being equal, an increase in the stock of immigrants from a country tends to lead to increased trade with that country. Immigrant tastes for goods from their country of origin may account for some the increased import flows, but they find positive effects for both exports and imports. Head and Ries (1998) perform a similar exercise for Canada, and find that a larger immigrant stock from a country tends to increase both imports from and exports to that country, although the elasticities are smaller than Gould found for the US. They speculate that the smaller effect may be due to Canada's resource-intensive export trade profile. Natural resource products are sold on organized markets so that information flows may not matter as much as for differentiated manufactured goods. Some support for this

view is found in the work of Rauch and Trindale (2002) and Feenstra and Hansen (2004) which will be discussed below.

Networks might be expected to matter for trade within a country as well as between countries. Combes et al. (2005) consider the role of business and social networks in affecting trade within France. Using data on bilateral trade flows between 94 French regions, they estimate a gravity model and first establish the existence of a border effect for trade between regions. Similar results have been found for trade within the US (Wolf, 2000); and as noted above, Hilberry and Hummels (2005) have suggested that one reason for such effects is that producers and input suppliers tend to locate close to each other. Transportation costs are no doubt one reason for this; but Combes et al. provide some evidence that information costs play a role as well. They use data on migration within France in a similar way that Gould (1994) and Head and Ries (1998) use data on international migration to proxy for social networks linking regions. And they use data on plants from affiliates located in different regions to capture business networks. Both network measures are found to be associated with increased trade between regions. Moreover, once these information network variables are included, the size of the measured border effect drops by about 50 percent, and the measured effect of transport costs falls by about 60 percent.

In a similar study, using US data, Millimet and Osang (2007) revisit the Wolf (2000) results on border effects which seem to inhibit trade between US states. They also use data on inter-state migration to proxy for social networks. The network variable is significant and its inclusion leads to a substantial reduction in the impact of the border.

While the Gould, Head/Ries, and Combes et al. studies provide evidence that network ties matter for trade, their evidence does not tell us why they matter. One view, as noted above, is that networks promote trade by facilitating information flows, helping to match buyers and sellers, helping to adapt products to the local market, and so on. An alternative possibility [emphasized in the historical work of Grief (1989, 1993)] is that networks help to overcome opportunistic behaviour (those that renege on agreements can be sanctioned by all in the net-

work). In this view, networks are compensating for problems in contract enforcement in international trade. The recent literature on contracting [see Spencer (2005) for a review] suggests that problems in contract enforcement may also influence the decision by firms to set up affiliates in foreign markets; hence there is some reason to expect that the Combes et al. use of affiliates as a proxy for business networks may be capturing the contracting effect.

Rauch and Trindale (2002) use data on ethnic Chinese networks to try to distinguish between these two channels. They estimate a gravity model and ask if trade is enhanced by the presence of larger ethnic Chinese populations in both the importing and exporting countries. Moreover, they distinguish between homogeneous goods that are traded on organized exchanges and differentiated manufactured goods. The argument is that information problems are unlikely to be important for those goods traded on organized exchanges, and so a positive network effect here would lend support for the contract enforcement hypothesis. If the network effect is larger for differentiated products, they interpret this as support for the market information hypothesis.

They find that for all types of goods, the presence of ethnic Chinese networks tends to increase trade; and that the effect is larger for differentiated goods than for goods traded on organized exchanges. There is thus support for both the contract enforcement and market information hypotheses. Moreover, since there is a positive effect on trade arising from the presence of ethnic Chinese networks, this suggests that private sector responses to information or contract enforcement problems that would be available to all producers are not successful in fully dealing with all of the information problems. This suggests a potential role for policy.

Information costs and the organization of firms

The recognition of the importance of vertical specialization for trade flows has led to a recent and still developing literature which integrates theories about the organization of firms with

models of international trade¹. In these models, firms can decide which stages of production should be internal to the firm, and which should be outsourced; and, in either case, they can decide whether to keep all production domestic, or spread some or all of it across borders. That is, a firm has the option of sourcing production from local or foreign affiliates, and/or from local or foreign independent suppliers. Trade and contracting costs affect all of these decisions.

If firms are considering outsourcing production, then they must find suitable suppliers. In some cases, standardized inputs can be purchased on a spot market. In other cases, suppliers must make firm-specific investments to produce specialized inputs that would have little value to alternative firms. In such cases, it is important that firms find a good match when looking for suppliers. Hence information costs such as those discussed above can be important determinants of the flow of trade in intermediates. Moreover, contracting issues loom large. If a supplier cannot write complete contracts with a purchaser regarding quality or firm-specific investments, then there may be a hold-up problem—once a supplier has made a firm-specific investment, the purchaser can take advantage of the sunk costs and attempt to get a better deal from the supplier; and suppliers who recognize this then have reduced incentives to make firm-specific investments. The ability to monitor costs and the quality of institutions affecting contract enforcement will then be important factors affecting the international organization of production, and hence the volume of trade.

Work in this area is still in its early stages, but there is some supporting evidence for these theories. For example, Nunn (2005) finds that countries with a legal system that is more effective in enforcing contracts have a comparative advantage in contract-intensive production activities and Antras (2003) interprets evidence that capital intensive goods tend to be imported into the US via intra-firm transactions whereas la-

¹ See for example Grossman and Helpman (2002), Antras (2003), McLaren (2000), Antras and Helpman (2004), Nunn (2005), and the survey by Spencer (2005).

bour intensive goods tend to be imported at arms length, as consistent with theories that the hold-up problem affects the decision of firms regarding how to organize their activities in foreign markets.

One of the most important themes of this literature is that the organizational form of the firm responds endogenously to the structure of trade costs and the institutional environment. Changes in trade costs will affect not just the volume of trade flows, but also decisions about whether to decentralize production and whether to set up foreign affiliates or enter into contracts with independent suppliers. This suggests that one must be cautious in interpreting evidence on the effects of trade costs on trade flows. On the one hand, high trade costs may encourage firms to organize in different ways which can mitigate the effects of trade costs—for example they may use a less fragmented production structure which could lead to much less trade but not necessarily a large drop in welfare. That is, one should not assume that welfare is proportional to trade flows. On the other hand, because of the cumulation of trade costs when intermediate goods cross borders repeatedly during the various stages of production, small trade costs can have a bigger dampening effect on trade flows than one might initially expect.

Trade costs and the Internet

The development of new information and communications technologies has increased the flow of information across borders and should therefore have contributed towards reductions in some of the trade costs discussed above. There are numerous examples that suggest this has happened. Niche markets, such as those for various collectible items have been linked by Internet auction sites such as Ebay; this has turned many individuals into exporters operating out of their home. On a much larger scale, there are many business-to-business websites that link global suppliers.

A few recent studies have begun to try to quantify these effects. Freund and Weinhold (2004) hypothesize that Internet usage will reduce the fixed costs of entering foreign markets by

reducing information costs. They use the number of web hosts in a country as a measure of Internet usage in a country and find that Internet usage is positively associated with exports from a country. Causality is, however, difficult to disentangle because Internet usage is endogenous and influenced by openness to trade. Clarke and Wallstein (2006) use indicators of the regulatory framework in a country to instrument for Internet usage and find that increases in Internet usage in developing countries are associated with increased exports to developed countries. They do not find similar results for exports from developed countries but note that there is little variation across developed countries in Internet access by manufacturing firms in the year they consider (2001). More work still needs to be done to identify causality, but these studies are not inconsistent with the hypothesis that Internet access is affecting trade costs.

On the other hand, there is abundant evidence that trade costs are still significant despite the improvements in information and communication technology. Buch (2005) in her study of international banking finds little or no evidence that the effect of distance on the foreign asset volume of banks decreased during the period 1983-99. Disdier and Head (2008) in a meta-analysis of over 1,400 estimates of distance effects find that the effect of distance on trade flows has been surprisingly persistent over time. Hence while new technologies may have mitigated some trade costs, substantial trade frictions still remain.

Is there a market failure?

As the above review indicates, the recent literature has uncovered several interesting stylized facts about trade costs. First there is evidence suggesting that something over and above standard trade restrictions and transport costs inhibits trade:

- there are measured "border effects" in terms of inhibited trade even when transport costs and measurable trade barriers are controlled for;
- there are sunk costs for firms that enter new export markets;
- many firms do not export, and those that do tend to be more productive.

Next there is evidence that information issues are part of the explanation:

- social and ethnic networks affect trade patterns;
- information flows between countries affect trade patterns;
- the quality of the contracting environment affects trade patterns.

And finally, there are some other trends in trade and investment patterns which are suggestive of market responses to informational and contracting aspects of trade costs:

- there has been a growth in vertical specialization of production;
- there is a lot of intra-firm trade;
- intermediaries play a huge role in the economy and there is some evidence that they are important in playing a matching role in international trade.

With these stylized facts in mind, I now turn to the issue of whether there is a case for governments to engage in activities to help their firms engage in foreign markets.

Firms may choose to enter foreign markets in a variety of ways—via exporting, foreign direct investment, joint ventures, franchising, and other organizational forms. For some products (such as for some types of services) a commercial presence in the foreign market is the only feasible way of selling to foreign customers. In other cases, foreign investment and exporting are complementary—exports of some types of goods need to be backed up with sales or servicing support; or production may be fragmented, as various parts of the production process are carried out in different countries. In yet other cases exporting and foreign investment are substitutes, and firms have to choose among very different ways of producing goods and services for foreign customers. In this paper, I will focus on the role of governments in helping domestic firms engage in foreign markets via any of these methods. Many of the costs of accessing foreign markets apply to all forms of market access—exporting, investment, joint ventures, etc. In other cases there are differences which I will try to highlight. To avoid being too pedantic,

I will sometimes focus on exporting, but similar arguments will apply to investment².

To focus the discussion, we must be clear on the objectives for government policy in this area. Although governments have many policy objectives, three seem potentially most relevant to export and investment promotion policy: (1) correcting market failures; (2) meeting "non-economic" foreign policy objectives; and (3) dealing with income distribution concerns. My focus will be on market failures and most of the rest of this paper will be concerned with that motivation. However, I will first briefly discuss the other two motivations.

By the non-economic foreign policy motive, I mean that governments may have reasons for wanting to increase commercial ties with some countries for reasons beyond purely economic benefits. There may be political and national security benefits from building up a trading and investment relationship—the integration of economies via international trade and investment may increase interdependence, foster personal and cultural ties, and reduce the likelihood of conflict. These sorts of political concerns, for example, were part of the motivation for creating a customs union in Europe after the Second World War. Moreover, the ties built between countries via trade and investment may also be useful in facilitating cooperation between countries on other issues, such as global environmental concerns. Finally, a trading and investment relationship may also be part of a development strategy and be either a substitute or complement for direct foreign aid. Hence there may be cases where governments in high income countries want to promote trade and investment with less developed countries. I will not

² The focus in this paper is on the rationale for governments to help their own firms engage in foreign markets. I will not discuss the issue of attracting investment by foreign firms to one's own country. Although some of the arguments discussed here will apply, the issues there are quite different, since governments have open to them a much more comprehensive range of instruments (such as tax incentives, domestic regulatory measures, and so on) to attract foreign investment. There is a literature on whether countries should try to promote foreign investment in their own country. A useful recent review is Hanson (2001).

pursue these motivations here, except to note that they may provide additional arguments for export promotion over and above the purely economic-based case I focus on below.

The other argument that is sometimes made specifically for export promotion that I will not pursue here is the income distribution motive³. If an export promotion program is not operated on a cost recovery basis, it is a form of export subsidy. Domestic firms and individuals working for firms that benefit from the program will reap benefits from the subsidy. Those not in the affected sector are less likely to reap benefits, and may incur costs (such as higher taxes to finance the program). Hence export promotion programs can affect income distribution by raising income of targeted groups at the expense of others.

There are precedents for using export subsidies to affect income distribution—the agricultural sector is perhaps the best known example. Moreover, issues of income distribution are important when thinking about regional development—an export promotion program might be part of a strategy to stimulate economic development in a particular region of a country. However, this motivation will not be pursued here for several reasons. First, export subsidies are an inefficient way to raise income or employment⁴. Export subsidies allow firms to offer their products to foreigners at lower costs than otherwise; hence such a policy ends up subsidizing foreigners. In addition, export subsidies encourage firms to alter their production in order to benefit from subsidies rather than to respond to market signals and produce what they are most efficient at doing. There are better ways to alleviate poverty and promote regional development than favouring firms that export over those that do not. Finally, much of the effort in recent rounds of trade negotiations has been aimed at reducing or eliminating the use of export subsidies that exist for reasons of income distribution. The use of

³ The income distribution issue also comes up in the context of promoting domestic investment abroad; however, there the concern is often that outgoing foreign direct investment may result in job loss in the domestic economy.

⁴ See Panagariya (2000) for the standard case against export subsidies.

export promotion policies for such purposes is contrary to the spirit, and in most cases the rules, of trade agreements. Hence, for all of these reasons, it would be unwise to base the case for export promotion purely on income distribution or regional development motivations.

I will instead start from the premise that a case for active export promotion policy intervention needs to be based on the existence of market failures. By a market failure, I mean cases where free markets fail to generate an outcome that is efficient. Market failures typically arise when there are externalities (so that individual agents do not bear the full social costs or receive the full benefits of their activities), incomplete markets (for example, it may not be possible to buy insurance against some contingencies); or market power (where agents are able to exert some monopoly or monopsony power). Market failures can also arise from government policy failures. For example, certain types of economic activity in some markets may require regulatory approval and the process may not be transparent or may be subject to corruption.

Adopting a market failure approach means that the objective of an export and investment promotion policy is not to promote engagement in foreign markets per se. Rather, the objective is to help overcome market failures so that export and investment activity moves to the level that would be achieved if markets were efficient. While in practice this objective may be difficult to achieve, the key point is that with this approach exports are not to be promoted for their own sake, but rather promotion would be limited to cases where an increase in exports would be the most efficient use of the economy's resources, and therefore would lead to a higher real level of well-being.

There are three sources of potential market failure suggested by the work reviewed in previous sections: externalities arising from various types of information and reputational spillovers; incomplete markets (mostly arising from information issues that affect contracting); and market power. These will be explored in what follows. However, even if we identify market failures, it will not automatically follow that the government should act. Firms can adapt to market failures in various ways,

and private institutions can evolve in response to market failures. The issue is whether the government can improve on private sector outcomes in a complex environment. My approach in what follows is to first identify sources of market failure, then discuss the adequacy of private sector responses to these market failures, and then review the implications for policy.

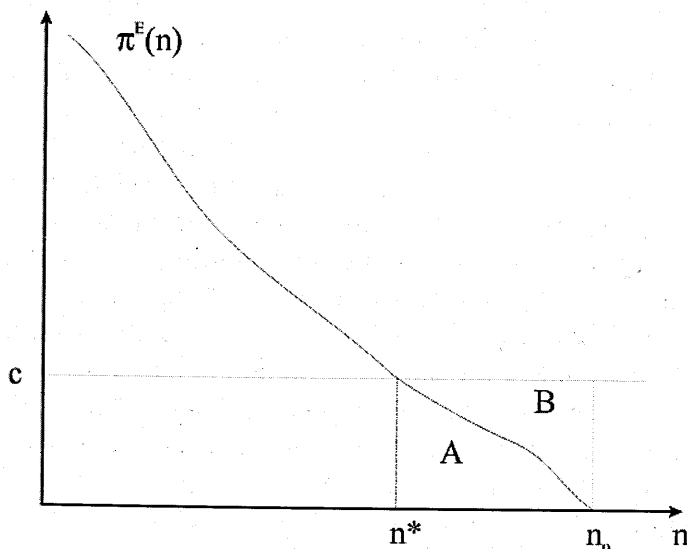
Sunk costs are not enough

The existence of fixed or sunk costs associated with entering foreign markets, either via exporting or investment, is not in itself an indication of market failure. These types of costs will prevent some firms from exporting or engaging in FDI. However, if all of the costs and benefits of the investment in sunk or fixed costs accrue to the investing firm, then there is no market failure. It will be efficient for some firms to export and others to not export. If the exporting or investing activity is expected to be profitable, then firms should be able to raise private capital to finance the up-front costs. In principle, this is no different than raising funds to build a factory. If the private sector is not willing to finance the costs, it is an indication that the expected return from entering a new market is not worth the upfront investment. As long as markets are functioning well, it is not clear how the government could do better than the private sector.

This is illustrated in Figure 1. Suppose there are many firms which are potential exporters. Firms are indexed by n . Let $\pi^E(n)$ denote the expected profits of firm n once it becomes an exporter. Low n firms are the most productive. Let c denote the sunk costs which must be incurred in order to become an exporter. Then a firm will export only if $\pi^E > c$. In the figure, all firms $n \leq n^*$ will export, while the less profitable firms (those indexed by $n > n^*$) will not export. If there were no sunk costs, an additional $n_0 - n^*$ firms would export. However, if the government were to offer a subsidy to offset these costs (and suppose it somehow managed to identify those marginal $n_0 - n^*$ firms), the cost of the subsidy would be area $A+B$ in the figure, while the increased expected profits would only be area A .

Hence while the subsidy would generate more exports, it would yield a net social loss of area B.

Figure 1: Sunk costs and the optimal number of exporting firms



This is essentially the classic argument raised by Baldwin (1969) against using fixed costs to justify infant industry protection. Baldwin's point was that the argument for intervention requires a market failure, and that fixed or sunk costs alone do not result in a market failure. The extensive recent literature which demonstrates that sunk costs play an important role in preventing some firms from entering foreign markets is not an indication of market failure, nor is it an argument for policies to promote exports or foreign investment. This does not mean that the existence of sunk or fixed costs of trading or investment are irrelevant to policy. As we discuss below, sunk costs in conjunction with market failures can lead to a case for intervention.

Dynamic gains from exporting

One of the most robust results to emerge from the literature on firm heterogeneity and international trade is that firms that ex-

port are more productive than those that do not export [the seminal paper is Bernard and Jensen (1995); recent surveys include Greenaway and Kneller (2007) and Wagner (2007)]. Two hypotheses have been suggested account for this. The first is self-selection. Referring to Figure 1, only the most productive firms can afford to pay the fixed costs of becoming an exporter. The second possibility is that firms become more productive because they export—they are exposed to more competition, new ideas, and new technologies; all of which leads to an increase in productivity. Sometimes this is referred to as the "learning by exporting" hypothesis. This is intriguing to many because it suggests that an increase in exporting can yield dynamic benefits to the economy via its effects on productivity. However, as I discuss below, this does not provide a market failure-based argument for export promotion policies.

Many studies find evidence supporting self-selection—firms that export tend to be more productive than non-exporters prior to the point at which they begin exporting [see reviews by Greenaway and Kneller (2007) and Wagner (2007)]. However, the evidence on the "learning by exporting" hypothesis is mixed. Some studies, such as Bernard and Jensen (1999) have found that productivity growth does not significantly differ between exporters and non-exporters. Others have found evidence of increases in productivity among exporters. Greenaway and Kneller (2007) note that slightly more studies find support for the learning hypothesis than those that do not. Results vary with methodology, but also across countries. A difficulty with work in this area is that if the self-selection hypothesis is correct, then those firms which export are more productive and innovative to begin with. Even if we observe that firms increase their productivity after they begin exporting at a faster rate than firms that do not export, it may not be exporting that is responsible. It may just be that some firms have attributes that make them more innovative, and this is what causes them to be successful in both domestic and export markets.

Baldwin and Gu (2003) use firm-level panel data and find evidence that exporting improves productivity for Canadian

firms. They also use survey data that suggests channels via which exposure to foreign trade can increase productivity: exporters are more likely to use foreign technologies and engage in collaborative R&D with foreign firms; and information flows regarding foreign technologies increase after firms begin exporting. They also find that the productivity-enhancing effect of exporting is greater for younger firms, and for those that are domestically controlled: this is consistent with a learning effect.

These results do not, however, provide an argument for export promotion. Referring to Figure 1 again, the expected profits of a firm once it becomes an exporter include anticipated future increases in productivity. If these benefits are internalized by the firm, then private decisions weighing expected gains against sunk costs of entering export markets should yield efficient outcomes. It is possible that firms may not anticipate the future increases in productivity that result from exporting. However, it is difficult to see how governments should be able to anticipate these outcomes any better than the private sector. Dynamic gains from exporting do not constitute a market-failure-based argument for export promotion. Such an argument would require that the gains not be fully internalized by firms, and for this to occur, we need externalities. The most likely form of externalities in this context would be information spillovers across firms; this will be considered in the next section.

Information problems

The acquisition of information is a major sunk cost associated with entering foreign markets. As discussed earlier, there are many different informational requirements—information about market opportunities, how to access distribution networks, how to find suitable suppliers, how to deal with local governments and rules and regulations, and others. Such knowledge can be costly to acquire, but once obtained, it may be easily disseminated, either via word of mouth, written reports, via employees who leave and move to other firms, or simply via demonstration effects—firms can learn from each other simply by watching

what their rivals do. This suggests that information spillovers exist. A firm investing in the acquisition of information will not reap the full benefits from the investment if other firms benefit from the knowledge without having to bear the cost of acquiring it. Information is not a private good in such cases, and hence there will be market failures—there will be underinvestment in the acquisition of the relevant information, which would lead to an unwillingness for marginal firms to invest in some of the sunk costs associated with entering foreign markets. Hence information spillovers could form the basis of a market failure that results in less engagement in foreign markets than is socially efficient.

The other key aspect of informational issues arises from asymmetries of information—the domestic firm and its potential customers, clients or suppliers all have private information about their product quality, work effort, costs, etc. For example, adverse selection problems arise if the domestic firm has difficulty in distinguishing between different quality levels when searching for suppliers, partners, or consultants in the foreign market. Another adverse selection problem arises when foreigners do not know the quality of products that domestic firms are trying to export to them. Moral hazard problems arise when it is difficult to observe the effort or care and attention that suppliers put into tasks that a potential exporting or investing firm has contracted with them to do. Informational asymmetries can lead to market failures; however, institutions (such as intermediaries) do develop in response to these types of problems, so we must consider the extent to which governments can improve on private sector and institutional responses already in place.

It is useful to organize our discussion around four different types of information: (1) general information, such as that regarding potential market opportunities or how to do business in the host market, that would be useful to many firms within an industry; (2) information which accumulates via experimentation and experience—such as learning which products or marketing strategies will work in new markets; (3) information which is very firm-specific, such as finding a good local partner or supplier for a specific firm, or dealing with a firm-specific

regulatory issue; and (4) information about domestic firms and products that needs to be disseminated to foreign customers, such as for example information regarding one's product quality and/or a firm's service provision capabilities.

Finally, it is important to emphasize that these information problems are not unique to exporting or foreign investment. Firms trying to develop new markets within the domestic economy will face similar types of information problems. Hence in thinking about whether there exist market failures that are sufficiently serious to warrant the expenditure of government resources, one must consider whether there is anything different about entry into foreign markets than into domestic markets. Moreover, if export or investment promotion programs are to be justified, would the same case apply to domestic markets?

General Information

General information relevant for firms from the home country doing business in a particular foreign country has many of the characteristics of a public good. It is costly to assemble and update, but once the information has been accumulated, it can be distributed at very low marginal cost. Moreover, if one agent pays to acquire the information, there is nothing that prevents that agent from transmitting the information to others without compensating the original producers of the information. This suggests that the market may under-provide such information and this can lead to a market failure.

There are some caveats. If the information is complementary to other activities that can be used to generate revenue, then one would expect the private sector to invest in some information acquisition. So for example, if a firm supplies specialized consulting services helping firms to move into specific foreign markets, it may provide more general information as part of a marketing strategy to attract clients for the more lucrative and specialized information services. We would therefore expect to see the private sector provide some general information, although the presence of spillovers suggests that the level of provision may not be efficient. Second, the growth of the Internet

and open-source models of information transmission will also tend to alleviate the under-provision problem.

Overall, however, the public good aspect of this type of information suggests that either public provision or subsidization may be justified. This can take various forms, such as subsidizing research in business schools, coordination of information gathering activities, and public provision via public agencies.

The public good aspect of general information also applies to domestic markets. However, there is likely to be much less need for general information provision for domestic firms in the domestic market than for those looking to expand in foreign markets. Simply living in a country, being exposed to the domestic media, being able to relatively easily hire people with a common background but with experience in various markets within the country, and being part of various domestic social and business networks of the type discussed by Rauch (2001) all suggest that the domestic information problems are likely to be less severe within a country than between countries.

Moreover, government-funded programs already exist within the domestic market that have the effect of promoting the provision and transmission of information relevant to market expansion within the domestic economy. Business school education is subsidized, and this facilitates the transmission of general information about doing business in the domestic market. Publicly funded education programs also facilitate the development of information networks, as students develop contacts during the course of their education. Federal and provincial governments both invest in information acquisition and dissemination—via agencies such as Statistics Canada, and via various government departments that employ people to help businesses learn how to cope with various regulatory issues when moving into new domestic markets.

Information generated via experience and experimentation

Much information and knowledge is obtained via experimentation and experience. Success in developing new products and entering new markets requires trying new ideas, many of which

will fail, before hitting upon a path that is fruitful. However, once the right path is found by one firm, others can follow it without going through the costly trial and error process. The successes and failures of particular firms in trying different strategies in new markets provide information to other firms about what might work and what might not. This is another example of an information spillover. It is different than the type of information spillovers discussed in the section above. In that section, the focus was on information that already existed based on previous histories and experiences. The information simply had to be assembled, synthesized and disseminated. The information I am focussing on in this section can only be generated by the activities of private firms that try new ideas and different strategies in new markets. No one knows ahead of time what will work or not work and so the only way to generate the information is for firms to make the investments in sunk costs and try to succeed. Some will, and some won't. But the results of their activities, positive or negative, generate information to others. The issue is whether a free market will yield the efficient level of experimentation, or more specifically, will a sufficient number of firms be willing to make the investments in sunk costs to enter foreign markets?

Hausmann and Rodrik (2003) and Hausmann, Hwang and Rodrik (2007) developed a model which can be adapted to provide a useful way of thinking about this problem. In their model, there is uncertainty about costs and productivity for various goods within a country. Firms have to spend fixed (sunk) costs to try different opportunities. Their success or failure conveys information to other firms—if they are successful, entry occurs and the entrants can avoid paying the fixed discovery costs. This yields spillovers across firms. One implication is that there will be underinvestment in exploration of production opportunities. Hausmann et al. then explore the implications of this work for the design of an industrial policy.

Our focus here is not on industrial policy, but on the incentives of domestic firms to engage in foreign markets. However, their model can be reinterpreted and adapted to yield some insight into our problem. Suppose that firms in the home country

are capable of producing a variety of goods and are successful in selling these goods in the domestic market. But there is uncertainty about how to sell in foreign markets. The way to resolve this uncertainty is to try different ways of dealing with foreign markets—one could try to sell different products, or try to enter different markets, or try different strategies (teaming up with a foreign partner, looking for distributors, setting up a subsidiary, etc.). Some will succeed; many will not. Each success or failure will convey information to other firms. Hence the benefits of exploring different ways of approaching foreign markets will not be fully captured by those firms doing the exploration. This will result in insufficient investment in learning about how to succeed in foreign markets. This is another example of a market failure. This will affect overall trade and investment volumes, and also the pattern of trade and investment—a country will tend to enter foreign markets more in those industries where success was achieved (perhaps by chance), and will also export more in sectors where there are organized markets and the exploration issue is not so important.

There is some evidence on the presence of information spillovers. Some case studies provide examples where information spillovers have been very important for export success—the role of an agreement between the Daewoo Corporation of South Korea and the Desh Garment Company in Bangladesh in acting as a catalyst for the development of Bangladesh's export-oriented garment industry is a well-known example [see Rock (2001)]. The evidence from large samples of data on the existence of such spillovers is, however, mixed⁵. Some studies [such as Clerides et al. (1998) and Greenaway and Kneller (2003)] find evidence that spillovers from other exporters exist, while others such as Bernard and Jensen (2004) do not. Aitken et al. (1997) find that there exist spillovers from foreign multinationals (MNEs) to domestic exporters, but not from general export activity. Aitken et al. (1997) use panel data from Mexican manufacturing plants for the period 1986-1990 and investigate whether the probability that a firm exports is affected by the local concentration of either total

⁵ See Greenaway and Kneller (2007), pp. F142-F144 for a brief review.

or MNE-based exporting activity in their regional industry by other firms. They find that exporting success is positively correlated with proximity to MNEs, but is not affected by the overall local concentration of exporters. They interpret their results as evidence that there are information spillovers from MNEs, but not from other (domestic) exporters. Clerides et al. (1998), on the other hand, find that there are spillovers across exporters in Colombia—the probability of becoming an exporter is positively affected by presence of other exporters in the local industry. Greenaway and Kneller (2003) use UK plant-level data and also find that the probability of exporting is positively affected by the local concentration of other exporting firms. Bernard and Jensen (2004), however, find no evidence of information spillovers in their study of the exporting behaviour of US firms. More empirical work on information spillovers is needed, since the existence and importance of such externalities is an important precondition for a market-failure-based argument for government export promotion.

Rodrik (2004) has a number of suggestions for how to structure industrial policy when market exploration issues are relevant. Some of these ideas are relevant for the design of an export or investment promotion policy. Promotion policy that is designed as a response to market exploration externalities should be targeted towards firms that are trying something new; that is, it should be aimed at helping firms that are attempting to break into new foreign markets (new either in terms of location or product line) that have not already been tapped by other domestic firms. This is because the motivation for policy intervention here is that firms learn from each other via spillover effects. Once it is clear how to succeed in certain markets, there are diminishing returns from experimentation. Again, the objective is not to subsidize exporting per se, because there is little if any evidence that exports per se generate externalities. Rather, the objective is to try to compensate for under-investment by the private sector due to the externality that arises from information spillovers.

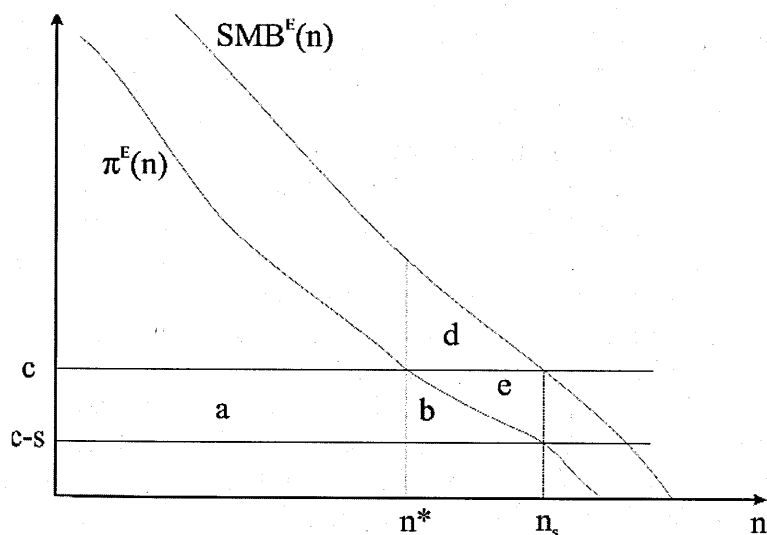
A major concern with this type of policy is whether it amounts to the government picking winners. In the framework of Rodrik et al., it is not so much that the government needs to

pick winners, but that it has to restrict its help to firms trying to break into new markets. Those implementing the policy need to be willing to accept that some firms will succeed and some will fail. Support should target access to the foreign market—essentially to deal with sunk costs of exporting to or otherwise engaging in foreign markets. Long-term public support for production or exporting should not be provided.

What form should government support take? The simplest version of a theoretical model of this type argues for a start-up export or investment subsidy to help cover fixed costs of accessing foreign markets in industries where information spillovers matter. This is illustrated in Figure 2, which focuses on the case of exporters. Consider a variety of possible untapped export markets (different products or locations), and index them by n . Let $\pi^E(n)$ be the expected profits of a typical domestic firm entering market n , and let c denote the sunk costs of becoming an exporter in that market. Because there are information spillovers resulting from the exporting decision, the social benefits of entering a new market exceed the private benefits. Let $SMB^E(n)$ denote the social marginal benefits of entering market n . In the absence of government intervention, the equilibrium number of markets entered by domestic firms is n^* . This is less than the socially efficient number of markets, n_s . Because of the externality, a free market leads to an outcome with not enough exporting.

If the government offers a subsidy s to firms that begin exporting in new markets, then the equilibrium number of markets served by domestic exporters will increase to the socially efficient level, n_s . The cost to taxpayers of the subsidy is area $a+b+e$, but this is offset by an increase in producer surplus of $a+b$, and an increase in information spillover benefits of area $d+e$. The net social gain is d , which is positive. Subsidies to promote exporting into new markets are welfare-improving in the presence of information spillovers.

Figure 2: Spillover benefits from exporting



In practice, however, there are strong arguments against using explicit subsidies to promote exports. Not only would this violate WTO rules, but there are also a number of well known incentive problems that arise when governments hand out subsidies. Once a government starts handing out subsidies, firms that it did not intend to target have incentives to change their behaviour to collect subsidies. That is, there are incentive compatibility problems with subsidies. The literature on cash versus in-kind transfers (Blackorby and Donaldson, 1988) is relevant here, and strongly suggests that subsidies are not an appropriate instrument.

A better alternative is for the government to provide services (at below market cost) that are only useful to the types of firms the government wants to target. That is, rather than providing a cash subsidy, the government provides an indirect subsidy by providing (at below market cost) services useful to exporters entering new markets. These types of services include provision of information, facilitating access to the relevant foreign bureaucracy, setting up trade shows, and so on. The government may not know exactly what services to provide for particular industries and markets, and firms may not know what strategies will work

for particular products in particular markets. Hence there is a need for interaction between government service providers and the private sector in the design and evolution of policy. As Rodrik (2004) notes, this can be a delicate balancing act. The government needs information from the private sector to be useful and so consultation and interaction with the private sector is important for success; but the system has to be set up in a way that those implementing policy act in the public interest (that is dealing with information externalities), rather than implementing policies that simply raise rents for targeted firms.

Notice that these services could involve both general information and firm-specific services. The spillover argument in this context calls for policies which help firms enter new markets; in its starkest form it calls for a firm-specific subsidy, as noted above. With subsidies ruled out, approaches to addressing spillover-related externalities would thus focus on provision of firm-specific information. Firm-specific information issues will be discussed in more detail in the next section—one of the issues that governments need to consider is whether their export and investment promotion activity might crowd out private sector intermediaries who also provide such services.

Firm-specific information issues

The third type of information problem that leads to sunk costs of engaging foreign markets arises from the fact that firms will have informational needs specific to their circumstances. There is a variety of such needs: firms may need to find distributors in the foreign market or to be matched up with foreign suppliers or partners; they may need to deal with regulatory issues that are specific to their firm; and they may need to learn about aspects of the foreign market specific to their product or their firm. Because these types of information needs are more firm-specific than those discussed above, the information spillover problem is less compelling. On the other hand, asymmetric information problems are likely to be pervasive, leading to potential problems with adverse selection and moral hazard. Moreover, there are search costs (such as in looking for the right supplier or dis-

tributor); and there are economies of scale in maintaining a base of knowledge about potential suppliers and distributors. This can put new entrants and small firms at a disadvantage.

These are the types of information problems for which the social and business networks highlighted by Rauch (2001) and Rauch and Trindale (2002) are particularly important. Access to a network of trusted contacts who can help deal with the various informational issues raised above can help to overcome the asymmetries of information and economize on search costs. The evidence that these networks matter supports the view that these types of information issues are important.

The key question here, however, is whether governments can improve on market responses to these information problems. Firms can follow a number of strategies to deal with the types of information problems discussed above. They can form joint ventures with established firms in foreign markets to take advantage of the local expertise of the established foreign firms. They can alter their organizational structure by setting up foreign affiliates to gain an established presence in foreign markets. And they can hire consultants or intermediaries with specialized local knowledge to deal with the various issues in which the firm may be at an informational disadvantage.

Fragmentation, Joint Ventures, and Direct Foreign Investment

One of the important consequences of information problems is that they can affect the structure of firms. Bernard et al. (2005), in their examination of exporting behaviour at the firm level in the US, find that 90 percent of US exports and imports of goods move through multinational firms; about half of US imports arise from intra-firm trade, and about a third of exports involve intra-firm trade. Joint ventures and other forms of contractual relationship with foreign partners are a pervasive form of engaging foreign markets.

While the option of setting up, purchasing, or partnering with a foreign affiliate can help overcome some of the information issues discussed above, it does not eliminate the problem. Although in the long run, having a foreign presence may be a key

part of successful entry into a foreign market for many types of products and services, it will in the short run raise sunk costs, and hence the information issues that arise at the point where a firm is considering beginning the export or investment process may well be amplified. All of the issues concerning asymmetries of information, regulatory uncertainty, and intermediaries apply just as much to foreign investment and choosing foreign partners as they do to exporting. Moreover, there is a wide range of factors that affect the choice to serve foreign markets via export, contractual relationships, or direct foreign investment⁶. Access to foreign information networks is only one of these many factors so such an option will not be cost effective to all firms that are in the early stages of accessing foreign markets.

Intermediaries

If information relevant to facilitating trade or investment across borders is costly, then the market will create incentives for specialized firms or agents to acquire the relevant information and sell their services to firms engaging in trade or investment across borders. That is, there exist middlemen or intermediaries that facilitate trades, match up buyers and sellers, help firms to set up foreign affiliates, and provide some quality control services. Examples of such intermediaries include wholesalers, large retailers, brokers, trading companies, and consultants. Intermediaries also perform these services for trade and investment within countries; one of the issues here is whether there is any reason to suspect that intermediaries are less effective in facilitating cross border activity than they are in dealing with trade and investment inside a country.

The theoretical literature has focussed on two main explanations for the existence of intermediaries relevant for our purposes here [see Spulber (1996)]. The first is matching buyers and sellers. By acquiring specialized knowledge of both sides of

⁶ There is an extensive recent literature on the way in which information and contracting problems determine the structure of firms operating in an open economy. Spencer (2005) has a good survey.

the market, intermediaries can reduce search costs for their clients and increase the efficiency of trades. The second is helping to overcome asymmetric information problems regarding quality and reliability of products or suppliers.

Rubinstein and Wolinsky (1987), Johri and Leach (2002), Shevchenko (2004) and others have developed models in which intermediaries match up buyers and sellers. In these models, buyers and sellers seek a good match, but search is costly. For agents on both sides of the market, there is imperfect information about who would be a good trading partner. Intermediaries can help facilitate matches, by investing in a technology which helps identify or facilitate good matches, by holding inventories, or by developing a base of knowledge about market participants. Johri and Leach (2002) show that intermediaries raise welfare by improving the average quality of matches between buyers and sellers and by facilitating increased production (because consumers find a match more quickly). Shevchenko (2004) also argues that intermediaries are welfare-improving, but that they do not fully overcome the information problems. He points out that intermediaries face a hold-up problem. They have to make up-front investments in a product line or in developing a range of clients, etc. Consumers would like them to carry a larger variety of products because it would increase the likelihood of a good match. But consumers cannot pay them up front for making this investment. Instead, intermediaries have to move the product they have, and their bargaining position with respect to consumers is weakened *ex post*. Consequently, there is underinvestment by intermediaries in the range of products they carry.

An alternative explanation for intermediaries is developed in the work of Biglaiser (1993). In his model, asymmetric information about product quality leads to an adverse selection problem. In the absence of middlemen, either high quality goods are driven out of the market, or producers have to engage in costly signalling to convince customers of their quality. Middlemen make an investment in skills needed to detect quality, and they have an incentive to develop a reputation for selling high quality goods. Future profits deter middlemen from accepting payoffs from low quality producers to recommend low qual-

ity goods to their clients. Biglaiser shows that if there are large differences in the quality of goods, middlemen increase the efficiency of the market. In related work, Biglaiser and Friedman (1994) show how middlemen can improve market outcomes when there is moral hazard (cases where producers can cheat on contracts by choosing to produce goods with lower quality than contracted). Again, middlemen have an incentive to develop a reputation for recommending producers with high quality output, and they punish those suppliers who cheat on quality.

Both the matching/search and quality certification roles of intermediaries are relevant to our understanding of how market institutions develop in response to the types of information problems that firms face when beginning to export to or invest in foreign markets. Firms need to find customers, suppliers and partners; hence they face search and matching problems. Moreover, firms need to ensure that those with whom they contract in foreign markets provide goods and services at the quality levels they require. Intermediaries help deal with these problems.

Rauch and Watson (2002) model aspects of intermediation that are specifically relevant to the issue of firms beginning to invest in or export to foreign markets. They develop a model where intermediaries draw on their networks of contacts to help producers find better matches (such as distributors, suppliers, etc.). In equilibrium, agents with large networks choose to become intermediaries. There are clearly potential gains from the presence of intermediation. Moreover, intermediaries with a large network have a comparative advantage in providing information that will increase the efficiency of other producers. However, because of the information problems and the matching framework, the market falls outside the realm of perfect competition, and hence there is no presumption that the market equilibrium will be Pareto efficient.

Schroder et al. (2005) develop a very simple model of intermediaries in which exporting firms may use intermediaries to pool the fixed costs of accessing foreign markets. In their model, firms are more likely to use intermediaries in markets where access costs are high, or in markets that are small relative to the size of access costs.

There is not yet much empirical evidence on the behaviour of intermediaries in international trade and investment. The best known study is that by Feenstra and Hansen (2004) who study Hong Kong's role as an intermediary for Chinese trade. They find that mark-ups by intermediaries are higher for differentiated goods, for goods sent to China for further processing, and for goods with higher price variance. They interpret this as evidence in support of the hypothesis that intermediaries help overcome informational problems. This is consistent with the theories above. They also find evidence that the intermediaries have market power. They find, for example, that mark-ups vary across export markets, which they interpret as evidence of price discrimination.

Schroder et al. (2005) use data on French exports from 1985-1990 and find that 17 percent of exports were handled by intermediaries (trading, retail, or wholesale firms). They investigate the determinants of the use of intermediaries. They find that intermediaries are more likely to be used when exporting to markets with a low level of enforcement of civil rights—they argue that fixed costs of accessing such markets are relatively high, thus increasing the demand for intermediary services. Smaller markets are also more likely to be served by intermediaries (there is more of an incentive to pool the fixed costs of market access when the market is small); but distance from France does not have a significant effect on the use of intermediaries. This latter result is consistent with theory, if distance effects reflect transport costs; however, if informational fixed costs of market access are correlated with distance from France, then the result would be not so consistent with theory.

In a study of intermediation and its effects on direct foreign investment, Evenett (2003) suggests that law firms may provide some intermediation services in dealing with foreign mergers and acquisitions. In particular, purchases of foreign firms are subject to approval by various local authorities, and the presence of specialized law firms could be expected to facilitate these transactions. Evenett approaches the issue empirically by asking whether the presence of branch offices of US law firms in foreign countries facilitates merger and acquisition activity

by American firms. His results are mixed—the presence of the biggest law firm in his sample is associated with more such activity, but the presence of the other big 5 firms is associated with less activity.

In summary, both theory and evidence suggest that private sector intermediaries can help firms deal with some of the information problems associated with attempting to enter new markets. Does this leave any role for governments to supplement the activities of private sector responses to the relevant information problems?

In many ways, it is premature to give an answer to this question. As noted above, there is very little evidence on the activities of intermediaries and middlemen and how effective they are in facilitating export to and investment in foreign markets. The theoretical literature is also still quite underdeveloped. The literature suggests that intermediaries can improve welfare by facilitating increased trade and investment, but that they will not achieve first best outcomes. Issues of how to choose among many intermediaries, and contracting problems when there is uncertainty about whether the intermediary can be trusted, have not been addressed by the literature. There will be both adverse selection and moral hazard problems in the market for intermediaries. There may also be issues of market power: because of information economies of scale, big intermediaries may have an advantage—they will have larger networks and will also have more to lose if their reputations are damaged. And the market for intermediaries may in some cases be quite thin [see Emran and Shipi (2002)]. Intermediaries will not exist unless there is a large enough demand for their services to cover their fixed costs, but that demand will not arise unless there has been a flow of exporters and investors into the new market. These are all issues that await future research.

These theoretical possibilities (which have not yet been fully studied) suggest that there will be imperfections in the market for intermediation. Moreover, this is consistent with Rauch's (2001) contention that the evidence that social and business networks enhance trade is evidence that intermediaries

are not providing frictionless services. However, because of the gaps in both the theoretical and empirical literature noted above, the case for government intervention to provide firm-specific services to assist engaging in foreign markets is very weak. Government activity may help some firms enter foreign markets, but it may also crowd out intermediaries who are assisting other firms to enter foreign markets. Figure 3 illustrates.

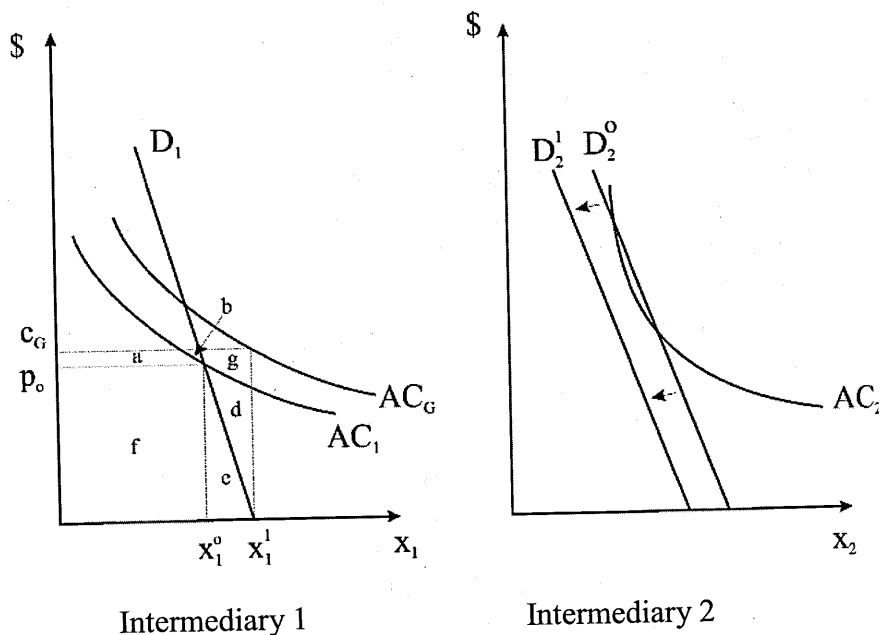
Suppose there are two intermediaries labelled 1 and 2, with declining average cost curves AC_1 and AC_2 respectively. Their services will be differentiated substitutes, so they will act as monopolistic competitors. The demands for their services are given by D_1 and D_2 . These demand curves are interdependent, so a decline in the price charged by intermediary 1 will shift inwards the demand for the services of intermediary 2. Initially, suppose the price charged by intermediary 1 is p_0 and the quantity of services provided is x_1^0 . Intermediary 2 is also selling services since its demand D_2^0 is high enough to cover its average costs.

Now suppose that the government starts providing the same services as intermediary 1 for free, but that the government is less efficient than the private sector provider—the government's average cost is AC_G . Because the government charges a price of 0 in this example, Intermediary 1 is driven out of the market by government provision. The lower price offered by the government will increase the amount of services provided to x_1^1 , increase the producer surplus of firms using these services by area $f+e$ in the diagram, and would increase the number of firms exporting. However, the cost of providing the government services is area $a+b+g+d+e+f$, which is greater than the increase in producer surplus. The net social loss in the market for type 1 services is therefore $a+b+g+d$. But this is not the only cost of the policy. Because the demand for the two types of intermediation services are interdependent, the demand for the services of intermediary 2 will shift in⁷. In the example illustrated, the new demand curve is D_2^1 , which is below the average cost curve

⁷ For simplicity, I have assumed that the demand curve D_1 takes into account the effect of the price in market 1 on drawing customers away from market 2.

AC_2 . Consequently, intermediary 2 is also driven out of business by the government entry into the market.

Figure 3: Crowding out intermediaries



The above example illustrates how well-intended government policy can reduce social efficiency by crowding out privately provided intermediation services. This need not always be the outcome of government provision of firm-specific intermediation services (as I discuss below), but it suggests that the case for intervention is weak. The complexity of the market for intermediation services and the lack of a clear theoretical or empirical consensus that governments could improve on private sector outcomes suggest caution is needed.

With this note of caution in mind, the above analysis suggests three ways in which government provision of firm-specific export promotion services may improve efficiency. First, governments could help firms select private sector intermediaries. The literature has emphasized the importance of

reputation in the market for intermediaries. Local trade commission offices could help firms find intermediaries with good reputations by helping to establish an information network on the intermediaries themselves. Referring to Figure 3, the provision of such information would shift the demand for intermediation services outward, and help thicken the market.

Second, there are some types of information networks in which government personnel have a comparative advantage relative to private sector agents. For example, a trade commissioner's office may have advantages over private consultants in helping a firm navigate the foreign regulatory system. This advantage would reflect different networks of contacts, but it is also possible that foreign officials will behave differently towards consulate personnel than towards private sector agents alone. Referring to Figure 3, these would be the types of services where the government's average cost of provision ACG is below its private sector counterparts.

Third, some types of government-provided services (such as assistance with regulators, introductions, etc.) could be complementary to other private sector services. The provision of these types of services would shift outward the demand curve for the services of other private sector providers. That is, the government should focus on the types of services that do not crowd out private sector intermediaries, but rather those which are complementary.

Information and foreign consumer demand

Information problems may also arise when there are spillovers across foreign customers regarding the quality or capabilities of home products. This may apply to both foreign consumers looking for final goods and foreign firms looking for intermediate goods and services from home firms. Several papers have studied this issue.

Mayer (1994) developed a model to explore the idea that a firm may have difficulty breaking into new export markets because potential customers have imperfect information about the quality of its products. This was a new twist on the infant indus-

try argument for protection. In his model, foreigners gradually learn about the quality of domestic products produced by perfect competitors: foreign demand shifts out with experience in consuming the domestic good. Since all domestic firms are assumed to produce the same quality, there is an externality in that each firm under-invests in facilitating foreign learning. Mayer shows that this creates an argument for export promotion. In his framework, an export subsidy is the first best instrument—the distortion arises because of under-consumption of domestic goods by foreigners, and an export subsidy will target this distortion. However, other policies that promote exports are consistent with this framework: these would include government-subsidized advertising campaigns, government coordinated trade shows; and other creative policies that help to shift out the foreign demand for domestic goods in the relevant sector. In most cases, these programs need only be temporary, because once the national reputation for quality in the relevant industries is established, there is little return to further promotion.

For this argument to be valid, two key things are needed: learning by customers must shift the demand curve; and there must be spillovers across domestic producers. The need for learning restricts the class of industries—the argument would not apply to standardized goods sold on spot markets where quality is easy to assess (although there could be reputational issues affecting the ability of home firms to honour contracts, to be timely in their delivery, etc). The need for spillovers is important because, if the reputation and learning effects are specific to individual firms, then they can invest in their own reputations.

In the absence of spillover effects across firms, there can still be market failures arising from asymmetric information about product quality. However, in this case the policy implications are sensitive to the set-up of the model. Grössman and Horn (1988) assume that individual firms can choose their own quality and can develop their own reputations. There are no reputational spillover effects across firms and consumers have rational expectations. Subsidies reduce welfare in this model because they allow the marginal (low quality) firm to enter, thus reducing the

average expected quality of products from the domestic country. On the other hand, Bagwell and Staiger (1989) have a model with adverse selection (firms cannot choose their quality) and show that an export subsidy can allow the high quality producers to enter in cases where they are unable to do so in the free market outcome. They show that this can improve welfare.

Despite the Bagwell/Staiger result, the case for using export promotion policies when reputations are firm-specific is weak. One could expand the models to allow firms to find creative ways to signal their product quality. This might not always lead to efficient outcomes, but since the results are sensitive to model structure, the informational requirements for the government to figure out when and where to intervene would be high. Moreover, once we move away from national reputation issues to firm-specific reputations, there is not really anything special about trade. New domestic firms would have similar problems signalling product quality to domestic customers, and so it is not clear that policies targeting export markets are called for in the absence of spillovers.

Indeed, Shy (2000) turns the argument on its head by suggesting that a firm may choose to export to improve its domestic reputation—domestic consumers may not believe the product is of high quality unless they see that foreigners are willing to buy it. In his model, it is possible for there to be excessive investment in exporting. Export promotion can therefore reduce welfare.

Spillover effects are therefore crucial to the argument for export promotion when product reputation is at issue. Is there any evidence to suggest that such spillovers might exist? Wojick (2001) estimates a model of US demand for Japanese cars and finds evidence of both a learning effect and spillover effects of consumer learning across manufacturers. This provides some empirical support for Mayer's argument. Another piece of evidence comes from Rodrik (1988) who notes that the benefits of such policies would vary with the level of concentration in the industry. Rodrik compared Korea and Taiwan and argued that Korea's more concentrated industrial structure allowed its firms to internalize the initial investment in reputation (by selling at lower prices to induce foreign consumption and learning) much

more than firms operating in Taiwan's more competitive industrial structure. This resulted in a different product mix, with Korea tending to be more successful in products that are more reliant on reputation for success.

Even if spillovers in reputation are important, there are other ways the market could respond to at least partially overcome the informational problem. Foreign retailers and other intermediaries have incentives to look for new sources of competitively priced high quality products. Large foreign retailers can determine the quality of products through investments in search, trials, and their own information networks. When they find products of acceptable quality, they can use their own reputations to create a market for them. Biglaiser's (1993) work on intermediaries as guarantors of quality suggests that competing foreign retailers, each with established reputations, could go a long way towards mitigating much of the information spillover problem. It may nevertheless persist for products where the cost to consumers is high (such as automobiles), especially in cases where it may take some time for quality to become apparent (such as in cases where the long-run reliability of the product matters).

When thinking about Mayer's version of the infant industry argument, one usually has developing countries in mind—the idea is that countries that were previously known mainly for the production of primary products or low quality manufactured goods are trying to make the transition to exporting high quality products. Hence one would not expect the argument to apply to most sectors in OECD countries.

However, there are a few sectors where spillovers at the national level are important, even in high income countries. Wine is one example—consumer perception of wines from different countries and regions affects overall demand for different varieties of wines from the same area⁸. These are spillover effects—a

⁸ For theory, see Tirole (1996) who develops a model in which rational agents base their estimates of quality on information about a reference group and not just individual agents in that group. For evidence that national and regional reputations affect the demand for wine, see Roberts and Reagans (2003), Schamel and Anderson (2003) and Schamel (2006).

good bottle of wine from a given country encourages consumers to try more varieties from that country; and a few unpleasant choices from another country can discourage them from trying samples from different producers in that country. Moreover, wine is relatively expensive, there is a lot to choose from, and quality can only be detected by consuming the product—one has to open the bottle to determine the taste. Hence information has a large effect on demand.

Industry associations can address these issues to some extent—wineries can pool their resources to market their products, organize trade shows, and engage in other collective marketing activities. But because of the spillover effect in reputations, there is a free rider problem—those that do not contribute may still gain something from an enhanced national reputation for quality or style developed by other firms. Hence industry associations may not be able to fully address the spillover problem; thus potentially leaving a role for governments to help out in export promotion.

Education and medical services are other possible examples where the national reputation for the quality of the services provided can affect international demand. National governments play a role already in setting standards or certifying quality; and hence, if the quality level is not well known to foreigners, there are likely to be spillover effects across those institutions which successfully export their services in these fields.

Finally, tourism is an industry where there are clearly spillover effects affecting foreign demand. Tourists consume a bundle of goods and services provided by a variety of suppliers, so there are spillover effects across firms when seeking to attract foreign tourists. If a hotel is successful in luring a tourist to a particular destination, that tourist will consume food, entertainment and a variety of other goods and services from a variety of firms in that location. Hence the benefits of attracting a tourist to a destination are shared by many firms. Consequently, the private sector is likely to under-invest in tourism promotion. This can lead to an argument for government-sponsored tourism promotion campaigns.

Market failure and government policy: Summary

The previous section identified several potential sources of market failure and, in each case, discussed some of the policy implications. In this section, I bring these different arguments together and summarize their implications for export and investment promotion policy.

Two main sources of market failure lie behind the case for government intervention in export or investment promotion: information spillovers and problems arising from asymmetries of information.

Information spillovers

Information spillovers are of three different types. First, there is a public good problem associated with general information regarding issues such as market opportunities, how to deal with the foreign regulatory process, or how distribution networks work. Because of the public good problem, such information may be underprovided in the market, and hence this is an argument for government involvement in information provision.

A second information spillover is generated by the demonstration effects arising from the actions of firms that attempt to begin exporting or investing in foreign markets. If there is uncertainty about what strategies will work and what markets will be successful venues for export or investment, then it is necessary for firms to experiment and try different strategies. Because firms will learn from the efforts of others, not all benefits of this activity will be internalized and hence theory predicts that too few firms will attempt to engage too few markets.

This second spillover problem cannot be resolved simply by having the government or intermediaries provide more information to firms—the information can only be generated if more firms try to export and invest in foreign countries. Hence the key policy objective would be to increase the incentives for firms to engage new markets. This type of spillover provides the basis for export and investment promotion activity that is specifically intended to encourage more firms to enter new

markets. This may involve a range of activity, such as providing firm-specific information services, facilitating trade shows, and whatever other types of assistance that would more firms make the transition into foreign trade. This is not an argument for increasing the flow of exports or investment per se. Rather, the key is to encourage firms to try new ideas, new markets, and new strategies because the information spillovers come from learning about what works and what doesn't.

There are a couple of weaknesses in this argument which suggest caution in its implementation. The first is that the empirical evidence on the magnitude and importance of this spillover effect is limited and mixed—some studies have found evidence of spillovers; others have not. The second is that the argument that firms do not experiment enough with new strategies and new markets applies to domestic market activity as well. A policy that provides too much inducement to export and invest abroad runs the risk of drawing too many resources away from production for domestic consumers.

A third type of information spillover arises from externalities affecting the foreign demand for goods and services from a particular country. This arises when either (1) there are spillovers in reputation for product quality—that is, the quality of products from a particular country is difficult to measure and is correlated across firms so that one firm's good or bad reputation can affect the demand for products from other firms from that country; or (2) when there are linkages in demand, such as for tourism, where one firm's advertising to attract tourists will generate business for other firms in the same region. Some of these spillover effects will be internalized by intermediaries who have an incentive to seek out high quality products to sell in their local markets. However, in some sectors (such as wine, tourism and education), the market failure arising from demand externalities is likely to persist, and this can provide some justification for government support in marketing efforts. Policies such as support for trade shows and advertising and promotion efforts would address the externalities.

Asymmetries of information

The other class of information problems leading to market failures arises from firm-specific information problems in which there are either informational asymmetries or informational economies of scale. These problems arise from a firm's need to search for partners, distributors, and suppliers; and from the difficulties in determining the quality of the services that they attempt to contract for. The evidence that social networks affect trade flows and patterns is evidence that these information issues are empirically relevant.

Intermediaries are a market response to these types of problems. The literature demonstrates how intermediaries can improve efficiency, but also shows that the first best outcome is unlikely to be achieved for various reasons, including market thinness, hold-up problems, network externalities, and asymmetries of information about the quality of the intermediaries themselves. There is relatively little empirical evidence regarding the effectiveness of intermediaries in facilitating international trade. One would expect that the market for intermediaries would be much more highly developed in some sectors and countries than in others; however this also remains a topic for future research.

The case for government intervention to provide firm-specific support to respond to these issues of asymmetric information is very weak because there is very little evidence on how well the intermediary market functions. There is a danger that government provision of services may crowd out private sector intermediaries. At the same time, policy could play a role in helping firms find suitable intermediaries, and in helping to transmit information about the quality and reputation of various intermediary services. Government consulate personnel may have a comparative advantage in providing certain types of intermediary services (such as in dealing with foreign officials); in such cases, there is an argument for government provision of such services (on a cost recovery basis).

Other policy implications

Other, more long-term and subtle policies in addition to those discussed above could also help to address market failures arising from information problems. The evidence that ethnic ties matter for trade, that immigration matters for trade, and that communication indicators (such as telephone calls and newspapers) matter for trade suggests that policies that help promote information flows between Canada and current and potential trading partners merit investigation.

The types of policies relevant here could be quite varied. For example:

- promoting educational exchanges where Canadian students spend time abroad and foreign students come to Canada for short- or long-term periods;
- promotion of foreign language training;
- making it easier and more attractive for foreign graduate students to study here—for example by ensuring that spouses can get work permits;
- allowing easier access to foreign television programming via satellite; and,
- facilitating reliable and low cost access to Internet networks.

Measuring the effect of these initiatives on trade flows is difficult and hence it is difficult to weigh benefits against costs. However, most of the policies listed above have much wider benefits than simply increasing trade. Students already study abroad and learn foreign languages as part of a general education. The existence of potential trade spillover benefits is just one more factor that can tip the balance towards increased support for such activities.

Finally, while the focus of this paper is not on explicit barriers to trade, it is important to note that the commitment aspects of trade and investment agreements play a role in influencing a firm's decision to make the sunk cost investments needed to enter foreign markets. Fernandez and Portes (1998) and others have argued that one of the benefits of regional trade agreements is that they help to solve the time inconsistency problem with government trade and investment policy. The

problem is that while governments have incentives to attract direct foreign investment to their country, once firms have borne the sunk costs of entry, there is an incentive for governments to alter policies to extract rent from the foreign firms. Knowing this, firms may be reluctant to invest. A regional trading agreement, especially if it includes provisions for national treatment on investment, can be a way for a government to credibly commit to treat foreign firms no differently than domestic firms, and this can increase investment and trade flows.

Response to export and investment promotion activity by foreign governments

Many governments have export and investment promotion agencies—Lederman et al. (2006) surveyed agencies in 92 different countries. Does the fact that foreign governments engage in promotion activities provide an additional argument for pursuing such activity?

If there are no externalities (information spillovers), then the presence of foreign export promotion activity does not provide an additional argument for export promotion. Referring again to Figure 1, export promotion activities by foreign governments will cause the expected export profit curve for domestic firms $pE(n)$ to shift in, and the equilibrium number of domestic firms exporting would fall. However, if we apply the same analysis of the effects of domestic export promotion as we did in our earlier discussion of Figure 1, we obtain the same result: in the absence of spillovers or other market failures, there is no case for government intervention. If firms fully internalize benefits and costs of exporting, governments cannot improve on market outcomes⁹.

If there are information spillovers, then foreign activity can affect the optimal domestic government response; however, the direction of the response is not clear. Consider the experimentation argument for export or investment promotion discussed ear-

⁹ Panagariya (2000) makes a similar point in his examination of the case against export subsidies more generally.

lier. In this argument, firms learn from the experience of others in attempting to engage foreign markets. If other governments help more of their own firms enter export markets, then this increases the information base—domestic firms can learn from the experience of their foreign rivals as they experiment with new markets. Given that the information flow is increased by foreign subsidization of experimentation, it is possible that the marginal benefit of domestic subsidization could fall. For example, the fact that a Korean firm discovered the benefits of Bangladesh as a source of textile exports provided information that benefited other exporters in Bangladesh and importers throughout the world.

On the other hand, there may be first mover advantages. If those firms that enter new markets early obtain long-run informational and networking advantages simply by virtue of being early, then foreign subsidization could increase the case for domestic subsidization. Pan, Li, and Tse (1999) study the effects of early entry by foreign firms into China and find that early entrants have higher market shares and profits.

In the case of information spillovers affecting foreign consumer demand for the products and services of domestic exporters or investors (such as the wine or tourism examples discussed above), then export promotion can be thought of as a form of advertising. If other foreign governments market their countries' products more aggressively, this could shift demand away from one's own exporters. The optimal response would then follow from the advertising and marketing literature—more aggressive advertising by one's rivals may require an increase in one's own export promotion to maintain the stock of knowledge capital among foreign consumers. However, this only applies to cases where there are spillovers in reputation about product quality. If firms have their own reputations and there are no reputational spillovers across producers from the same country, then firms can internalize the effect of foreign export promotion on their demand and respond efficiently on their own.

If there are market failures in the market for intermediaries and other countries are providing firm-specific information and other targeted help in entering foreign markets, then the optimal

response by the domestic government is less clear, because of the complexities in the market for intermediaries discussed earlier. As was noted, the case for governments providing firm-specific support to overcome issues of adverse selection and moral hazard in dealing with customers, partners, and suppliers in foreign markets is very weak. The possibility that foreign governments may be engaging in such activity does not change this.

Should we be concerned if foreign governments provide export or investment promotion services to help their firms get established in Canadian markets? If markets are competitive, the standard result is that there are both efficiency and distributional effects. An explicit or implicit foreign export subsidy lowers the costs of imports to Canada and increases aggregate Canadian purchasing power, but reduces real income of those who have strong ties to the affected import-competing sectors. A foreign investment promotion policy also has efficiency and distributional effects, but the distributional effects are different—domestic workers are likely to benefit from the increased demand for labour, whereas domestic capitalists may be hurt by increased competition from foreign-controlled firms. Since aggregate purchasing power increases in both cases, the efficiency grounds for responding are weak—the government could deal with the distributional effects of foreign promotion via other instruments (taxes and transfers). The issues here are similar to those in the literature on whether or not it is appropriate to use countervail laws to respond to foreign export subsidies.

If there is imperfect competition, the effects of foreign export subsidies are more complex and depend on market structure. The major issue here is analogous to the concern about predatory pricing—if the effect of foreign export promotion is to drive out a domestic firm that is making profits on domestic sales and to replace it with a foreign firm that makes those profits, then the welfare effect of foreign export promotion could be negative because of the profit-shifting effect. In this case, there are efficiency grounds for a response. But rather than providing an argument for retaliatory domestic promotion policies, the appropriate response would be to use countervail laws.

Empirical Evidence on the Success of Government Export Promotion Schemes

Theory suggests that export promotion or assistance programs could play a role in helping firms overcome some of the information problems associated with entering new markets. A natural question is whether such programs have been effective in achieving their goals. The literature on this question is quite thin. A few studies in the international business and management literature examine the effect of export promotion programs on managers' attitudes (see Diamantopoulos et al., 1993). Only a few papers have attempted to use data on outcomes to estimate the effects of such programs on trade flows.

Coughlin and Cartwright (1987) look at US state-level export promotion expenditures in 1980 and find that they are positively associated with state-level exports. They infer from this that export promotion programs do stimulate exports. However, they use only cross sectional data, and state-level expenditure could be correlated with something else that is a cause of export success. That is, they are unable to control for unobserved heterogeneity. Similar problems affect a study by Wilkinson and Brouthers (2000) who use state-level data and distinguish between the effects of trade missions, trade shows, and foreign offices on exports. Trade shows are associated with more exports, but the other indicators are not.

Lederman, Olarreaga and Payton (2006) use survey data on export promotion agencies from a cross section of 104 developed and developing countries to investigate the effects of export promotion expenditures on the volume of exports. They find a strong positive correlation between export promotion expenditures and exports. They use an instrumental variable approach to deal with endogeneity issues and interpret their results as implying that each additional dollar spent on export promotion increases exports by about \$40; however, the effect is diminishing with GDP and with level of expenditure.

Unobserved heterogeneity and endogeneity are the key problems to be overcome in any study of this type. Are the types of firms that are successful at exporting (independently of

public assistance) also more likely to participate in such programs? Does the use of such programs cause export success, or does export success increase the demand for the use of government services that fall under this category?

Bernard and Jensen (2004) use a panel of data on US firms. This allows them to control for unobserved heterogeneity. They find that state-level expenditures on export promotion have no effect on the probability that firms will export. However, they note that their panel contains data on relatively larger firms; since most export promotion agencies tend to target small and medium sized firms, their sample may exclude those firms for which such programs are most effective. Alvarez (2004) uses firm-level data and investigates the effects of Chilean government export assistance programs on export success. He models the participation of firms in public export assistance programs and finds that that trade shows and trade missions do not increase the probability of export success, although participation in government-supported export committees is positively correlated with export success.

Rose (2005) does not look at export promotion programs *per se*, but rather asks whether the presence of embassies and consulates (and their personnel) in a country contributes to increased exports to that country. There is an important endogeneity problem in that one would export a much larger foreign service presence in a country with which there is a larger trading relationship—that is, trade success could be determining the size of the foreign service contingent rather than vice versa. Rose uses a gravity model with panel data. Fixed effects control for unobserved heterogeneity and instrumental variables are used to control for endogeneity. He concludes that the establishment of a consulate appears to have a small positive effect on exports to a country.

Hence at this stage, there is very little evidence on the effectiveness of government-sponsored programs to promote exports. There is some evidence that export success is correlated with the presence of this type of program, but only a couple of studies have attempted to grapple with the reverse causation issue. This is a fruitful area for future research.

Conclusion

This paper has reviewed the economic case for publicly sponsored export and investment promotion or assistance programs. Two sources of market failure were identified which could form the basis of a rationale for government support in this area: information spillovers and asymmetries of information. The theoretical case for government-supported export and investment promotion as a response to information spillovers is fairly strong; however the empirical evidence on the importance of such spillovers is mixed. More empirical research that assesses the magnitude and existence of such spillovers would help clarify the case for government intervention.

The case for government provision of firm-specific services to respond to problems of asymmetric information is very weak. There are private sector responses (such as intermediaries, changes in the organizational form of firms, joint ventures, etc.) to such problems, and there is very little evidence on how well these market-based responses work. Government intervention runs the risk of crowding out private sector intermediaries.

The literature on these issues is still relatively new, and there is still much that is not known. There is very little information on private sector responses to information problems associated with access to foreign markets. A recent literature on intermediaries exists, but it needs further development, particularly with respect to issues of market thinness and the endogenous development of information networks. There is almost no empirical evidence on how effectively intermediaries help firms overcome information problems when they enter new markets. A small literature attempts to assess the effectiveness of government export promotion programs, but to date we have very little evidence on whether or not such programs actually succeed in increasing the number of firms which succeed in exporting or in setting up new ventures in foreign markets. There is much scope for future research.

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Integrated Trade Service Models: Best Practices in E-Trade Finance

Peter Cowan and Gilles Morin[♦]

Abstract

The emergence of global value chains (GVCs) and the growing use of electronic supply chain management techniques in the private sector presents both challenges and opportunities to traditional trade facilitation systems and trade promotion organizations (TPOs). This study highlights opportunities for TPOs to integrate their traditional trade development operations (supporting sales) with downstream trade management functions (post-sales fulfillment) on the basis of electronic platforms, the benefits in terms of diminishing traditional payment risk and accelerating cash flow within supply chains of integrating trade finance into such e-platforms, and the potential to facilitate SMEs internationalization efforts through ICT enablement. The study suggests that due to problems of attaining sufficient scale in trade facilitation networks and the presence of externalities, under-investment by the private sector may occur in trade facilitation systems. Insofar as neutral third party sponsors can overcome/reduce some of these problems, government involvement could be contemplated, especially if SMEs are to be the prime beneficiaries in terms of enhanced access to international markets.

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Introduction

The modern global economy is characterized by a growing interconnectivity of geographic markets, industrial supply chains and trade facilitation systems and services. This ever-deepening functional integration in the global economy is enabled by “rapidly increasing industrial capabilities in developing countries, capabilities that reside both in local firms and the affiliates of multi-national firms, and new computer-mediated approaches to real-time integration of distant activities. ... As a result, opportunities have opened up for firms to engage with the global economy—as buyers, suppliers, sellers, distributors, contractors, and service providers—in ways that were impossible even a few years ago.”¹

Many well known private sector names such as Dell, Acer and Wal-Mart, as well as lesser known names such as Brooks Sports, Burton Snowboard, Columbia Sports, Golden Chang and Grupo Bimbo, have actively embraced these developments. Thus, for many firms, technology-based supply chain management is no longer an add-on feature of their organizational model; it has become a core component that influences their operating and manufacturing models.

These developments pose a challenge to trade promotion organizations (TPOs). As the International Trade Centre recently noted, “Trade Support Institutions must ... continually justify their existence and their right to demand scarce resources. This can be done only if they remain relevant, offer needed services to their client exporters, and strive to provide the best services at a competitive cost.”² Some TPOs, and related trade facilitation agencies already have embraced these developments, including Korea Trade Network (KTNet), Hong Kong’s Digital Trade and Transportation Network (DTTN), and Mexico’s Nacional Financiera (Nafinsa).

¹ Sturgeon (2006); at p. 35.

² International Trade Centre UNCTAD/WTO (2004).

This paper sets out the general case for TPOs to reach beyond their traditional scope of trade promotion activities to meet the challenge of facilitating integrative trade³ in the Internet age. It draws on a survey of well-established integrated trade service leaders, with a particular focus on electronic trade finance. The observations from the survey are placed in a conceptual framework to facilitate analysis on the basis of which operational suggestions and recommendations for TPOs can be derived, and areas for further and more detailed research can be identified.

Background and Methodology

Trade facilitation functions and institutions

The various functions and services that enter into trade facilitation can usefully be sorted into two groups based on whether they are provided prior to a sale (front-end or upstream) or following the sale (fulfillment or downstream):

- a) Global Trade Development (GTD) activities support the front end of transaction development; these include:
- Electronic marketplace facilities, including trade portals/samples, virtual trade shows and electronic catalogues.
 - Exporter and importer missions.
 - Country image building (e.g., advertising, promotional events, advocacy).
 - Firm-specific export support services (e.g., exporter training, technical assistance, capacity building).
 - Provision of market intelligence, market research and publications (including general sector and firm-level information⁴), qualifications search.
 - Legal and contractual services.
 - Customer Relationship Management (CRM) services.

³ The "integrative trade" terminology/model has been outlined by Export Development Canada (EDC) in various publications and in successive EDC Corporate Plans. See, for example, EDC, *Anticipating Needs, Delivering Results: EDC in an Evolving Trade Environment*, Submission to the 2008 Legislative Review of the Export Development Act, May 2008.

⁴ See for example Lederman et al. (2007).

- b) Global Trade Management (GTM) activities meanwhile support the fulfillment stage of transactions⁵; these include:
- Physical movement of goods (e.g., sourcing, procurement, tracking).
 - Managing information streams (e.g., purchase orders, shipping documents, including electronic trade documents, certification, regulatory compliance and customs processes).
 - Provision of financial supply chain services (including letters of credit, e-financing, payments services etc.).

A wide range of entities engage in these GTD/GTM activities, including:

- export credit agencies (private and public),
- private sector trade councils, trade services agencies and sectoral hubs,
- government agencies engaged in trade promotion – including through government E Marketplaces,
- financial institutions, including development banks, international trade banks, and commercial banks,
- international organizations involved with trade, such as the United Nations Conference on Trade and Development (UNCTAD) through its Global Trade Point Network, or GTPNet, and
- large suppliers and large buyers.

As well, logistics firms and information technology providers play important roles in facilitating trade.

Traditionally there was little overlap in activities of organizations carrying on GTD functions such as conventional trade promotion agencies and those involved in GTM functions such as logistics firms. However, links are being forged. Examples of early movers include the US Export Import Bank's collaboration with the logistics firm UPS, Mexico's Nafinsa's linkages to

⁵ Many of these activities are often described as part of Supply Chain Management (SCM). The SCM concept generally incorporates only the goods and information aspects of value chains. GTM recognizes the equal importance of the financial elements in the value chain, and reinforces the integration of the three, something that the SCM literature does not normally promote.

domestic supply chains, and the efforts of Korea Trade-Investment Promotion Agency (KOTRA) to move downstream from trade promotion to incorporate contract negotiation and dispute resolution services.

Factors reshaping the environment for trade facilitation

Three key factors have served to enable and motivate the establishment of linkages between the upstream (GTD) and downstream (GTM) aspects of trade facilitation. These are the growing significance of global value chains, the emergence of electronic platforms for service delivery, and the associated emergence of electronic finance.

The growing significance of Global Value Chains (GVCs):

As a Conference Board of Canada study recently noted:

“Rather than producing something entirely within one country, companies increasingly use inputs from two or more countries to produce a single good or provide a service. Declines in tariffs, transportation costs and communication costs, combined with technological advances, have made it both possible and attractive to break production into smaller parts. Companies then produce or buy each input, for example, goods such as electronic parts or services such as engineering, from wherever it can be made or provided most efficiently. In recent years, exports and their imported inputs have risen together, increasing the share of components in the total trade. There has also been a significant increase in global foreign direct investment and sales of foreign affiliates. Combined, these developments provide strong evidence of a trend toward increasingly global or regional—rather than strictly national—value chains.”⁶

⁶ Goldfarb and Beckman (2007).

This emergence of integrative trade has created new challenges and opportunities for firms engaging in international commerce and, by the same token, for institutions engaged in facilitating international commerce.

Participation in GVCs is especially important for SMEs. Such participation provides SME suppliers "access to global markets at lower costs than those faced by individual small-scale producers, due to the intermediation function assured by the contractor."⁷ As well, "the exposure to learning processes among partners in global value chains generates knowledge spillovers and stimulates human and technological capital upgrading"⁸. SMEs that succeed in integrating into several supply chains gain access to economies of scale through increased specialization, as well as increased stability and improved financial performance. The catch however is that the ability to internationalize operations and to participate in GVCs may depend on a firm's scale of operations, its capital resources and its human resources and leadership, assets which many SMEs lack.

As well, many SMEs that do participate in GVCs often are low value contributors (in terms of either monetary value of input, level of technological content, or level of intellectual property). As a result, they tend to have limited power in influencing the terms of their participation in supply chains (e.g., over pricing, delivery time, payment terms). Given the many challenges that SMEs face, any assistance that responds to identified needs in terms of facilitating their gaining a foothold or improving their position in GVCs, including acquiring the enabling information technology base⁹ warrants some further consideration.

As outlined in the force field illustration below, many drivers can be identified that prevent/hinder SME entry into GVCs

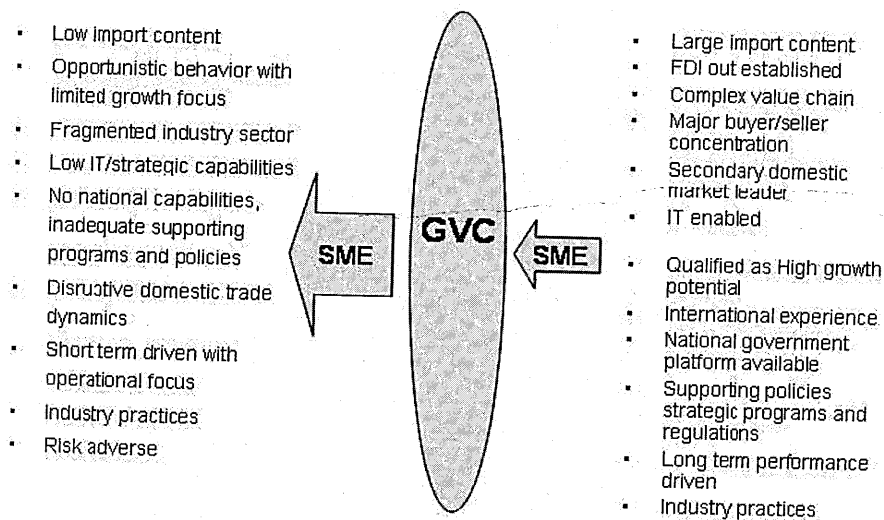
⁷ OECD (2007).

⁸ Ibid.

⁹ The importance of technology and particularly information and communications technology to improved internationalization and export performance has been documented by Karavdic and Gregory (2004) and Karavdic (2006); its importance to relationship management with trading partners has been shown by McCabe (2006).

(left hand column) or encourage SME entry into GVCs (right hand column). In the current environment, the drivers applicable to SMEs are heavily skewed to the left hand column.

SME/GVC Access Drivers



E-Trade Services Facilitation Platforms (e-platforms)

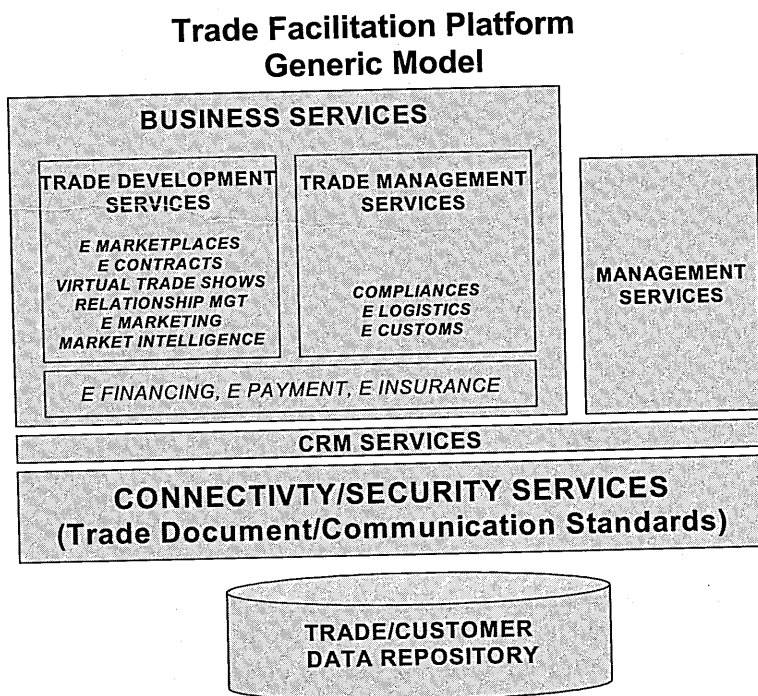
Numerous e-platforms have been developed in recent years which provide a mature portfolio of business tools and trade technology applications. Some examples are:

- Alibaba, E Bay
- Taitra (Chinese Taipei)
- UTrade Hub (Korea)
- Tradelink/DTTN (Hong Kong, China)
- TradeNet/Trade Exchange//Lawnet/Portnet/Marinenet (Singapore)
- Project A/B/C (Chinese Taipei)
- Nafinsa (Mexico)

These include private and public/private platforms. Moreover, each of these can be further categorized in many different ways: many to many, one to many, buyer oriented, supplier

oriented, trade compliance facilities, trade matchmaking etc. However the majority of the platforms are clearly targeted at GTM activities, rather than GTD activities.

The figure below represents generically the core functionalities that could appear on an Electronic Trade Facilitation Platform.



Electronic Trade Finance (ETF)

Sometimes referred to as supply chain finance or data triggered financing, ETF leverages a technology investment, an E platform, to make all participants privy to the same trade data (e.g., purchase orders, invoices and acceptance notifications between members of a supply chain). This allows the creation of payment triggers (data triggered financing) based on specific events and contracted terms, thereby diminishing traditional payment risk and accelerating cash flow, while also allowing a reduction in the cost of financing to SME suppliers within the chain based

on the higher credit rating of the purchasers— a specific example of such a practice is “reverse factoring”¹⁰.

ETF provides tangible benefits to both buyers and sellers within a supply network: For buyers, the major advantages of ETF include: reduced working capital requirements by extending days payable outstanding, reduced accounts payable administration costs due to fewer manual transactions, and even a reduced cost of goods—many buyers report being able to negotiate better discounts from suppliers (up to 10% in some cases). For suppliers, the major advantages of ETF include a lower cost of capital through the discounting of receivables at preferred rates based on the better credit risk profile of the buyers¹¹, but also increased certainty of cash flow based on defined payment terms and visibility of payment status, reduced accounts receivable due to the availability of early payment opportunities to the buyers, and acceleration of cash flow using pre-shipment, work-in-process financing based on data triggers.

Importantly, the more efficient intermediation of capital into the supply chain network fundamentally lowers the risk profile of the network—in areas ranging from payment risk to

¹⁰ Factoring refers to the practice whereby an intermediary, usually a finance company or a specialized factoring company, buys at a discounted value the debts owing to a business. The factoring intermediary typically advances funds covering a substantial portion of the debts owing to the business (with the percentage depending on the age of the receivable), while also providing accounting and debt-collection services. For the business, this accelerates cash flow. In “reverse factoring”, the intermediary buys only those accounts receivable that are from highly creditworthy buyers such as large multinationals (Kappler, 2004). In this case the credit risk incurred by the factoring company is based on the default risk of the buyer and not on that of the SME, effectively lowering the cost of credit to the SME. ETF financing practices are evolving: the emerging trend away from letters of credit towards open account as a means of settling international trade transactions is accelerating the adoption of such financing strategies by large buyers and global financial institutions. A far more comprehensive discussion of ETF can be found at source websites such as www.aberdeen.com and www.tradecard.com.

¹¹ Up to 280 basis points in some cases; see Sadlovska and Enslow (2006).

performance risk (e.g., on-time delivery). At the same time, by building trust amongst the participants, ETF enhances the stability of the network. The ETF model stands in contrast to the traditional, adversarial procurement model in which the more powerful buyer seeks to extract concessions on price, payment terms and delivery from the weaker supplier. In fact, this “cost shifting” to the weaker participants actually increases the cost to the buyer as the supplier incorporates its higher cost of capital into the cost of the goods. Moreover, in extracting such concessions, the buyer weakens the overall strength of the supplier thereby increasing the long-term risk of GVC disruptions.

Analytical Approach

To gain a better understanding of the emerging trends in the area of integrated electronic trade-related services, to assess the leveraging effect that the emerging linkages between upstream and downstream trade facilitation may have on trade development and promotion activities, and to evaluate the capacity to innovate in this area, a survey was conducted in 2006 of well-established trade service leaders, with a particular focus on electronic trade finance.

The institutions that participated in the survey represent a wide range of institutional types¹². That being said, not all institutional types are equally well represented—in particular private sector institutions are less well represented than hoped for, which represents a limiting factor for the results. Moreover, certain institutional types are represented in some economies but not in others. This reflects either inability to identify an institution of a given type for the economy in question, or if identified, a failure to elicit agreement from the institution to participate.

The level of representation for the survey meetings ranged from middle management to the most senior executive level. Participants represented themselves as having both the authority

¹² Attached, as Appendix A, is a list of all the institutions that agreed to be interviewed for the study.

to speak on the subject matter in question, as well as the experience base to support their views.

The heterogeneity of the surveyed institutions made a standardized questionnaire inappropriate. Accordingly, based on research drawn from publicly available sources on each institution, interviews were tailored to the specific interests of the institution in question. One obvious drawback of this approach is that it limited the ability to compare results across institutions.

As the experience of the survey team increased during the project, cross references to other institutions' activities were used during the interviews to facilitate discussion about different approaches, and to determine the distinguishing features in approaches between economies, private sector companies and government agencies. While this enriched the discussions, it did have the drawback of further limiting the direct comparability of the information gained from the various participating institutions.

Against this background, questions were asked in five general areas:

- Who leads or influences the development and implementation of electronic trade finance practices? What are your key service trade offerings (upstream and downstream); what has been the adoption rate and what have been your key market successes?
- How are the emerging or implemented electronic trade finance practices influencing integrative trade? Identify examples of trade finance value chain integration (working capital, bonding, insurances, data triggered financing).
- How are these electronic trade finance practices linked to domestic supply chains or critical sectoral supply chains in these economies? Have you targeted specific industry sectors, or size of companies?
- What is the role of the different public and private sector players in electronic trade facilitation?
- Has leadership in trade practices translated into leadership in E Trade services and electronic trade finance? If yes, in what way?"

Additionally the responses received were evaluated within a conceptual perspective which argues that organizations that become lead users of information technology benefit from heightened performance and distinguish themselves from their competitors. Applegate (1999) represents this heightened innovation process by creating a stage model of ICT development. As companies progress through each stage the option value (or the potential for increased innovative impact) of their ICT infrastructure grows. The three stages are:

- Stage 1: Technology investments in reusable infrastructure can lower costs (e.g., by exploiting scale economies, standardizing data etc.) and create strategic "option values" for future growth. Project C from Chinese Taipei, to be discussed later in the paper, is an example of a reusable technology investment.
- Stage 2: Technology investments in new processes or improved processes can drive profitable growth through further cost reductions and more importantly through revenue generation. The very extensive effort by Singapore in standardizing documentation, and reducing the documentary requirements for trade flowing through its economy would be an example of this in a government context.
- Stage 3: Technology investments that create competitive advantage can build barriers to entry by others, helping to sustain profitability. The Nafinsa example, to be discussed later in this paper is an example of this.

Finally, as regards the information collected, one obvious caveat concerns the fact that the collection of the information (with one exception) was not covered by Non Disclosure Agreements (NDAs). It should be borne in mind that the absence of NDAs undoubtedly constrained the amount of information that was provided by participants, particularly those in the private sector. In the case of the one entity to which an NDA applied, the information provided in this document has been agreed to by the party in question.

Summary of Main Observations

Within the context of the general factors discussed previously, outlined below are some general observations gleaned from the research. In most cases, specific institutions are identified as the source of the observation, as they are implementing it in practice or the individuals interviewed provided an opinion to support the observation.

(a) Private and Public Electronic Trade Services Initiatives

Adoption of e-platforms

The role of neutral intermediaries in providing e-platforms seems to be established (e.g., KTNET, Trade Gate, DTTN, standards associations). However, the definition and dynamics of neutrality are probably driven by the power balance of the parties involved. As such the identification of issues to be dealt with in neutral situations is probably a function of the issues becoming standardized among competitors or no longer providing a competitive advantage to the parties to the platform.

Private sector banks for their part are slow adopters of multiparty e-platforms because they see such platforms as a challenge to their relationships with their clients or having a negative impact on their brand. Also by keeping transactions in a non commoditized form, they can continue to promote their solutions as "unique".

The underlying logic of an e-platform that incorporates GTD and GTM functionalities is that these functionalities (contract, dispute resolution, shipping, compliance, financial tools) can be commoditized and automated, driving down trade costs for participants. However, notwithstanding the widespread use of technology for the purposes of integration and innovation at the GTM end of the trade facilitation spectrum, only a few entities (e.g., Kotra and Nafinsa) are trying to bridge these functions with downstream GTD functions. Nor is there strong evidence of general momentum in that direction.

Indeed, there is a perception that e-platforms are primarily a Stage 1 type of process innovation/efficiency exercise for GTM activities, with far less application in the upstream GTD environment. Consistent with this, most examples of innovation observed were at the Stage 1 level (value enabling). Few examples of Stage 2 (value creating) and Stage 3 (value sustaining) have been seen, except in narrow niches (e.g., Hong Kong (China), Korea, Mexico, Singapore, Chinese Taipei). This may reflect the fact that innovation, in many cases, reflects best practices of a sector being copied, encouraged by benchmarking. In this regard, it has been noted that "...if all firms in an industry are seeking opportunities in the same places, they tend to come up with the same innovations." (Sawhney, 2006).

However certain projects (Project C, Nafinsa) where innovation moved outside "established boundaries" demonstrate the potential for Stage 2 and 3 innovation, if the currently divergent aspects of GTD and GTM could be integrated.

Integrating SMEs into GVCs

Some e-platforms (e.g. DTTN, Tradelink, U TradeHub, Kotra) have been successful and embraced by some SME exporters. However, most countries and agencies visited are struggling with their SME constituencies (e.g., the Comet project in New Zealand (Ministry of Economic Development, 2006) and the overall effectiveness of public and private e-platforms as a means to incubate and support the development of new trade (import-export) relationships remains open for discussion. This is largely because the number of participants has been low. The slow pace of adoption is in turn extending the time line for investment to improve the functioning of e-platforms.

There is a clear impression that SMEs are neither the beneficiary of ICT innovations (Stage 2 and 3), nor demand such. The situation can be described as a glass ceiling and floor at the same time. Institutions are able to see through, but neither side appears to have an imperative to push through. There are some claims that medium-sized companies are now being targeted

more by e-platforms as the next market segment to move into from a growth perspective (e.g., TradeCard).

That being said, it is important to note a segmentation based on market characteristics. For those SMEs that are in a "many suppliers to one buyer" market, there is a greater likelihood of being required by buyers to adopt ICT practices that will pull them into GVCs thus facilitating their internationalization. However, for those SMEs that are in "many suppliers to many buyers" type markets, the drivers for a higher degree of ICT adoption are not as high, and their path to internationalization may be slowed down. For this latter group it would appear that there is a role for TPOs to facilitate the adoption of ICT practices and for e-platforms to accelerate the internationalization process.

Advanced payments, reverse factoring and credit rating information services are increasingly being used within e-platforms to support SMEs (e.g., Nafinsa, Coface, TradeCard, Project C). However, few stakeholders are principally focused on addressing the major ETF gaps with SMEs.

Moreover, TPOs often appear to be inclined to disengage from the ICT enablement of SMEs once they reach a certain level of sophistication in developing international trade opportunities. This poses a problem for their SME clients since most of the opportunities for ICT enablement are in the downstream GTM aspects of participation in GVCs and, in most cases, there is no neutral third party with a mandate to continue to facilitate ICT enablement. The exception to this observation is where national government trade facilitation platforms of integrated trade services are available.

Other areas identified where improvement in TPO services for SMEs by means of e-platforms could be made include reducing non-tariff barriers, providing easier access for SMEs to global markets, and improved matching of buyers and suppliers. In these cases, however, the acceptable time horizon for investment purposes is longer.

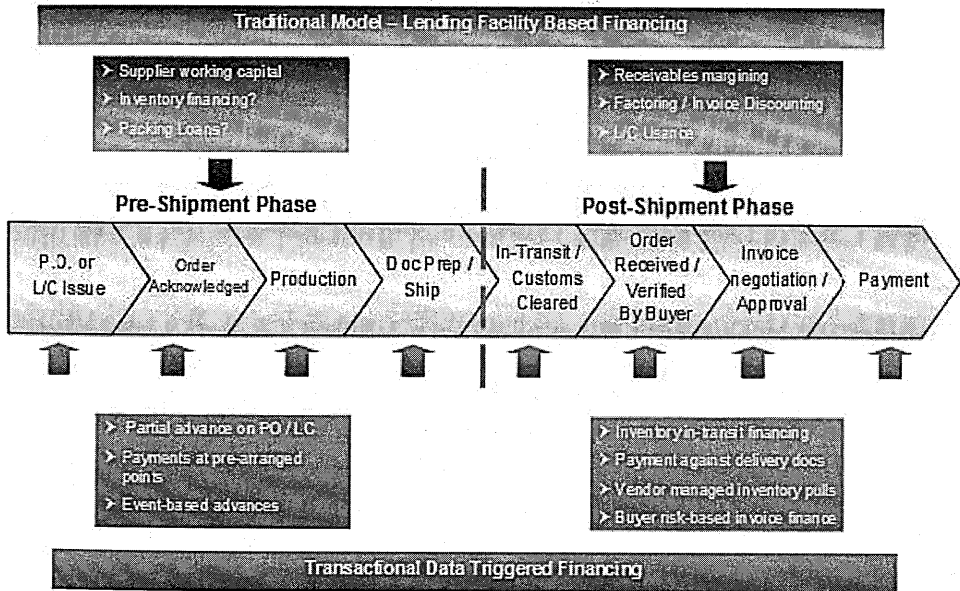
(b) E Trade Finance (ETF)

ETF and ETF supporting systems such as secure payments systems (e.g., Alibaba (Alipal) and eBay (Paypal)) are important in helping to facilitate transactions among unknown trading partners. This observation reinforces the importance of embedding ETF facilities into e-platforms to create initial trust between newly trading parties. However few collaborative public and private initiatives have tried to integrate ETF into GVC structures, and with varying degrees of success (i.e., Kotra, Nafinsa).

In the banking community, the private sector global banks have been the most active in supporting ETF (e.g. Standard Chartered, HSBC). They are actively using ICT investments to provide financing earlier than before within major global supply chains, but consider it a proprietary advantage as it provides a differentiating feature in the competitive world of global banking. National banks (including the Canadian commercial banks) tend to very conservative and have lagged behind. Several logistic firms have implemented such functionality on a smaller scale but primarily in North America (e.g., Fed Ex). Non-banks may provide new capabilities (e.g., UPS, Wal-Mart) for established clientele and supply chain partners and may disintermediate established players. The ability to access a detailed perspective on these private sector facilities was, however, limited because firms were not in a position to disclose information other than what is available on their public web sites due to competitive reasons.

All recognized that data triggered platforms were a reality of future trade practices, however there was open debate as to the pace of adoption of such functionality beyond the sophisticated SCM practices of major buyers and their tier 1 suppliers. The figure below shows the migration from traditional paper based forms of trade finance to data triggered forms of trade finance and the expansion of products conceptually available, given the presence/utilization of e-platforms.

The Supply Chain Finance ("SCF") Model



Outside the purely private sector, the potential of the concept is also recognized by many, but demand for it has not been forthcoming except in specific situations usually driven by country-specific needs or as an extended product offering of already established products. Kotra appears to be experimenting with on line financial services but this is still in a prototype environment. Consequently, outside of Project C (Chinese Taipei) and Nafinsa (Mexico), we did not uncover any on line public/private e-platforms that have fully operational data triggered ETF. Both of these cases are described in the Box below.

Project C – Chinese Taipei

Project C (MOEA, 2004) built on the successful implementation in 2000/2001 of the first two stages (Projects A and B) of the so-called “Vitamin Plan” which had the objective of promoting e-commerce in the information technology (IT) industry¹³.

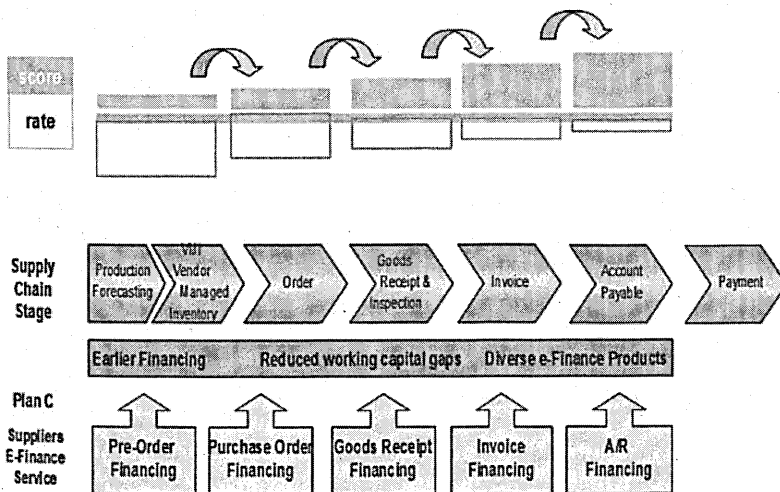
- Project A involved helping leading global information technology firms (IBM, Compaq and HP) and Chinese Taipei’s leading IT manufacturers to establish an e-business supply chain covering every stage from design through procurement.
- Project B involved helping Chinese Taipei’s leading IT manufacturers and more than 1,800 of their component suppliers to establish similar e-business supply chains covering the stages from procurement to manufacturing.
- Project C was an extension of this success into the provision of Internet-based electronic banking services with a focus on the liquidity needs of sub-suppliers associated with the main manufacturer that anchored the global supply chain within Chinese Taipei.

The principal issues to be addressed in Project C were that the majority of payments were still paper-based in the form of written cheques (raising a working capital timing issue), that most banks still relied on letters of credit and letters of hypothecation which require time commitment as most processing of these instruments was done manually (also raising a working capital timing issue), and more often than not the financing required collateral (raising a working capital availability issue). Project C addressed the working capital timing issue by allow-

¹³ The “Vitamin Plan” included two further stages: Project D focused on the adoption of e-business delivery services by Chinese Taipei’s IT hardware and semiconductor manufacturers and logistic service providers; Project E focused on interactive models of e-Business for collaborative design involving customers, suppliers and technology design partners at the new product development stage. The migration of much of the hardware manufacturing to mainland China in recent years has stalled further action in these areas in addition to reducing the quantitative impact of the A-B-C stages.

ing suppliers to access working capital earlier in the production process and by removing manual processes related to payments; it addressed the working capital availability issue by giving them access to unsecured funds, thereby increasing liquidity.

The participating banks were given access to the supply chain information (date of order, goods receipt, invoice issuance, account payable postings, etc). The banks would then issue funds to the sub-suppliers in question, in a phased approach with a declining price structure as the transaction moved from origination to fulfillment. The flow of events in this process is illustrated below (MOEA, 2004).



At the time of the visit to Chinese Taipei in March 2006, the program was considered successful in that:

- By early 2004, nearly 24 billion TND had been disbursed under Project C and more than 21,000 suppliers were beneficiaries. The funds disbursed were actually incremental so the program had not just displaced established facilities;
- The cost of funding had declined by up to 2%; and
- The default rate was lower than traditional lending.

However, some structural issues that were beginning to limit the upside potential of the program were also identified. These limitations fell into several categories:

- The major manufacturers and buyers in the supply chains appeared to be setting their IT priorities elsewhere than on the payments processing function. Paper checks still remain the norm.
- The program was launched in an economy that has significant financial liquidity, such that this particular facility was in competition with other sources of funds. It would appear that although the program has provided value, the “uniqueness” of the program may have been overestimated.
- Financial institutions were re-evaluating their commitment to the program in light of their strategic interests. This had led in some cases to the institution providing continued support but perhaps not “championing” the program. In at least one case, the financial institution involved withdrew from the program because the facility simply did not meet the strategic interests (product profile, branding) that the firm wished to promote.

Project C was, and probably still is, a clear example of where integration of the goods, information and financial aspects of GTM did lead to innovative practices. Two Stage 2 examples of these practices are identified below:

1. The real innovation of Project C was not the improvement associated with automation of the existing processes, but rather the use of third parties’ SCM systems originated by projects A and B to provide banks transparent, timely and accurate information. The provision by the lead manufacturers, the core clients of the disbursing financial institution, of the underlying information gave sufficient comfort to the banks that the suppliers would meet their repayment obligations that they were willing to extend credit without requiring guarantees, collateral or security as previously had been the case.
2. New developments included the extension of new credit, the provision of funds earlier (e.g., pre-purchase orders) than is the normal practice of financial institutions in this sector, and the apparent changes in the security/collateral requirements of the participating financial institutions.

Nafinsa Productivas – Mexico

In 2000, the Mexican government, having identified a serious liquidity issue facing Mexico's SMEs, directed Nafinsa¹⁴, a government-owned development bank, to establish an IT-based facility to facilitate access to 'structural' liquidity for SMEs to enhance their growth and support the internationalization of their operations.

In 2007, there were about 115,000 registered SME suppliers on the platform, of which about 85,000 were active participants. The platform is anchored by more than 600 buyers, ranging from government agencies providing services to Mexican citizens (which is a vote of confidence by the Mexican government in Nafinsa's operational performance), to major government agencies running power and energy utilities, to major private sector buyers (retail stores, bakeries, hotel chains). The volume of transactions on the platform has grown to about US\$ 12 billion annually.

For the majority of the participants, the primary motivation for being on the system is the financial stability of the principal members of their respective supply chains. By being on this platform and reducing the risk of poor financial performance of their suppliers, they mitigate risk.

For buyers, presence on the platform allows them to obtain extended payment terms from their suppliers (i.e., from 15/30 to 90 days), which has an immediate, positive benefit on their working capital requirements and cash management practices.

For suppliers, participation is a reputation enhancer since it is the buyers who invite them onto the platform. From a cash management perspective, suppliers have now moved from short payment terms (net 15 to 30 days) to next day payment terms once the accounts payable has been recognized by the buyer and posted to the electronic platform. Once posted, suppliers are able

¹⁴ In mid-2007, operational responsibility for the e Platform migrated from Nafinsa to Mexico's TPO (Bancomext). This move was in part due to the recognition of the platform's value as a trade development tool for Mexico's exporters.

to sell their accounts receivable immediately if they choose to at discounted rates based on the buyer's credit rating, giving them access to cash much sooner than before.

As the purchasers of the accounts receivable are financial institutions that are participants on the platform¹⁵, they can establish a documented track record of performance with other financial institutions. This has led to extensions of credit (outside the platform) for other activities (capital equipment purchases, mergers/acquisitions) to the suppliers that would not have been available without this platform.

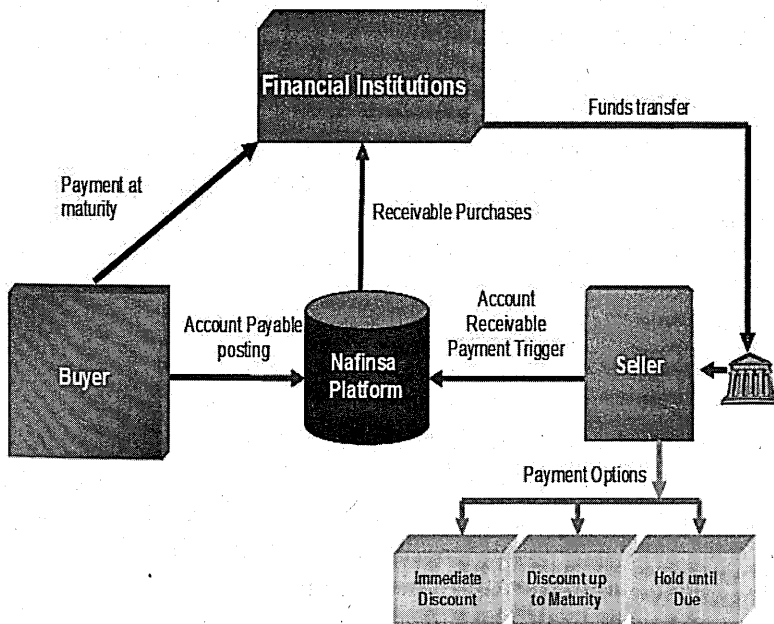
The financial institutions for their part are now purchasing assets that were not available before and are using the underutilized credit capacity of the buyers as the credit enhancer. This has allowed them to extend further credit to buyers, and has helped them enhance their relationships with these buyers as the buyers continue to grow, both domestically and internationally. The platform has particularly benefited factoring companies in Mexico, as factoring volumes have risen significantly.

The actual mechanics of a transaction are as follows:

1. A Cadenas Productivas program is set up with a large buyer.
2. Nafinsa hosts the platform for data exchange.
3. Suppliers are invited by the buyer to register to transact on the platform. Standard terms are negotiated (generally net 90 days) (off line).
4. The buyer issues a purchase order to the supplier (off line).
5. The supplier performs the work and submits an invoice to the buyer (off line).
6. Goods are received. When the invoice is accepted by the buyer, the supplier is notified by a posting of the buyer's Account Payable (supplier's Account Receivable) on the platform.
7. At this point the supplier has three options: (i) immediately discount the Account Receivable at rates, posted on the platform, based on the buyer's credit risk; (ii) discount any time

¹⁵ It should also be noted that the participating financial institutions include traditional banks (deposit taking institutions), as well as other financial institutions such as factoring companies.

- until maturity of the receivable; or (iii) wait until maturity for payment (i.e., net 90 days from posting on the platform).
8. Upon discount, the buyer's credit limit with the financial institution is reduced.
 9. Dependent on the action chosen in Step 7 funds are remitted to the supplier net of fees and discounts, next day through the Financial Institution.
 10. The buyer makes payment to the Financial Institution based on the payment terms negotiated in Step 3.
- The platform is illustrated in the figure below.



This platform provides examples of a number of innovative practices that can be categorized as Stage 2 or value creating.

- For participating financial institutions, it mitigated risk exposure to the buyer's supply chain partners.
- For participating SMEs, it provided access to increased liquidity.
- For both buyers and suppliers, the platform improved terms of payment.

- The establishment of “reverse factoring” on the platform, supported with an appropriate e-commerce legal framework, has revitalized a traditional paper-based financial practice.
- By placing multiple banks on the same platform, bidding for the same asset, the platform has created choice of financial partners to the SMEs (something which is quite rare as the traditional banking relationship involves one bank providing all the financial services to an SME client).
- For both buyers and suppliers, the platform has served as a means for cross-border trade promotion and cross border fulfillment.

Arguably, this platform might also be considered to embody a Stage 3, value sustaining, innovation since firms have to be “invited” onto the platform, a process which constitutes somewhat of a barrier to those not already on the inside, and by the same token, sustains value for those that are already in. At the same time, it must be noted that from the government’s perspective this platform was intended to break down barriers to participation by SMEs, and it has achieved precisely that objective¹⁶.

One measure of the success of Nafinsa’s platform is that it has since been launched in selected Central American economies by the Central American Bank for Economic Integration (Cabei). Currently a number of major buyers on the Mexican platform are using the platform as a means to extend their payable obligations to suppliers in these newly adopting economies. It would appear that the Nafinsa platform has the potential to become a standard within this region.

One appeal of the Nafinsa model is that it is not dependent on GVCs. It can be based initially on domestic supply chains and then extended outward to support regional supply chains, facilitating its application in developing economies.

¹⁶ More generally, technological innovation can break down barriers (or allows them to be broken down) and changes business models (e.g., GHX e-marketplace), even if at an individual enterprise level, which is the perspective for which Applegate’s “stage” approach to innovation was developed, the intent is to sustain the ability to capture value.

Discussion

Unquestionably, trade facilitation is being transformed by a progressive shift of functionalities into e-business platforms. This is observed in most TPO's where customer relationship management (CRM) functionalities have been, or are being, implemented. However, TPO's have tapped only a limited amount of the full potential for integration of upstream GTD functions with those of the downstream GTM functions—despite some very ambitious and well-thought out projects such as the “Vitamin Plan” launched by Chinese Taipei. The current state of affairs therefore is one where most TPO's are generally under-leveraging the potential of e platforms rather than using these platforms in an integrated fashion to deliver such capabilities as virtual trade shows, online catalogues, e contracts or direct links to e marketplaces. Further integration of the functions along the GTD/GTM spectrum, combined with continued investment in data mining and integration of CRM functions, appears to offer the promise of further product, service, and trade process innovation. In particular, wrapping GTD services around transactional services (ETF, GTM) could be a major catalyst for the development of trust among unrelated parties thereby delivering a significant trade enabler (due to reduced perceptions of risk), and additionally serve as a constructive force in linking, or creating operational overlaps between, trade development services and non traditional functions such as e customs/compliance and e logistics services.

A role for public policy

There appear to be two principle reasons for the limited extent of integration seen to date. First, there is the problem of achieving sufficient scale to make the platform sustainable/profitable, especially given the high attrition rate of participants (reflecting the natural mortality rate of businesses, mergers and acquisitions, and strategic withdrawal from markets). Second, there are various externalities inherent in such networks; accordingly, since the sponsor or organizer of the network is unlikely to cap-

ture the full value generated by the network, it is likely that there will be under-investment by the private sector

These considerations suggest that public-sector involvement might be required, especially if the principal beneficiaries are to be SMEs (as in the Nafinsa model). The case for public sector involvement is strengthened to the extent that the creation of a neutral platform facilitates participation by SMEs, that participation in such platforms increases the number of SMEs engaging in foreign markets, and that such engagement raises their overall performance level.

Public participation (e.g., for procurement purposes) would also help stabilize the platforms over the longer run given the risk that private sector leaders may shift their operations internationally for competitive reasons (e.g., as has been seen in the case of Chinese Taipei's IT industry).

Lessons from best practices internationally

From a public policy perspective, these platforms should be seen as basic economic infrastructure—enablers and facilitators of future performance, rather than as a tool for immediate returns in the form of, say, near-term increased exports or number of exporters. Such platforms constitute, therefore, long-run strategic investments first and foremost, although the near term and material paybacks in process cost savings and increased trade volumes were clearly benefits identified by the economies that were early movers in adoption of these e platforms.

Given the long-run nature of such projects, the wide range of functions that could be integrated, and the large number of participants from both the public and private sectors, a well laid-out strategic plan is called for (e.g., such as Chinese Taipei's "Vitamin plan"). The Nafinsa example shows that such projects can be developed on a national platform, and then once successful, used as a tool for internationalization, as Mexico is now doing.

Such integration efforts can be based on an existing e-platform within government that is considered leading edge for its functionality (e.g., finance, security of trade, trade facilita-

tion, B to B, G to B). Other public sector entities that have relevant knowledge or capabilities (e.g., public sector business development banks or credit risk taking agencies) can be engaged to take advantage of tacit or codified knowledge that they might have (e.g., screening of foreign counterparties in e market-places).

Fundamentally the models that were highlighted in this research effort were all examples of public private platform (PPP) partnerships. The public sector may have provided the "neutrality/trust" factor to the platform, but the content of the platform in many cases was a function of established product/services in the private sector, or which required private sector competencies to develop and incorporate. Illustrative examples of these products/ services that could be included in such platforms are:

- a national letter of credit depository,
- standardized E Payment and E Invoicing facilities,
- credit rating services at the economy level for foreign buyers and domestic sellers as a key trust building block with the objective of breaking the electronic anonymity barrier,
- a database of qualified trade agents,
- dispute resolution processes,
- contract negotiation tools,
- bonding mechanisms, and
- early supplier payment programs.

The PPP efforts observed were clearly examples of accommodation between the patient capital of government and the entrepreneurial interests in the respective economies in question.

Finally, if the principal beneficiaries are to be SMEs, economies need to address the issues of meeting the service level expectations of SMEs in the "low touch" environment of e-platforms while maintaining the e-platforms cost performance. The majority of SMEs may not be ready for this environment (they are lifestyle firms rather than growth firms). Accordingly,

it is important to target for participation the minority of SMEs that are growth oriented, not those that are lifestyle oriented¹⁷.

Conclusion

The world of trade development and support activities has come a long way since 2001, when the International Trade Centre undertook a study on SME views on information and communications technology (ICT) as a business development tool with the following general conclusion:

“...connectivity is seen as a valuable communication tool, but not as an essential aspect of competitiveness. The use of ICT was acknowledged as important to establishing a modern and innovative business culture within the enterprise, but was regarded as having no, or minimal, direct impact on sales prospects or purchasing efficiencies.

Few of the managers considered web strategy an integral part of their overall business. Nor did they believe the application of ICT would become a fundamental element of their long-term business development strategy. For the vast majority, the seamless e transaction is a long way off because of perceived difficulties in introducing on line financing and payment and customs and taxation applications.”(ICT 2000, p.23)

This study provides evidence that all the perceived challenges, as articulated in the statement above, have been met. It is no longer a question of immature or unproven technology, as there are examples of implementation. This study also highlights opportunities for further innovation by TPOs through integration of their upstream GTD operations with downstream GTM functions, and the potential to facilitate SMEs interna-

¹⁷ The concept of a lifestyle exporter is meant to indicate that the enterprise in question has reached a level of successful performance with which the owner operator is quite satisfied and responds to export opportunities opportunistically, not in a strategic growth-oriented manner.

tionalization efforts through ICT enablement, although recognizing that this may require some form of government involvement.

The main conclusions/advantages regarding the incorporation of ETF in e-platforms are as follows:

- Earlier financing for suppliers
- Improved cost of funds for the suppliers
- Improved cash management opportunities for both buyer and supplier
- Lower bad debt ratio
- New growth opportunities for financial institutions
- Capacity to extend outside a specific economy's boundaries

However, at the same time, several obstacles have been noted:

- These platforms can challenge brand image and the strategic objectives of firms which may lower their enthusiasm for them.
- They fundamentally hinge on the buyer's willingness to use its underutilized credit capacity, or the buyer's ongoing commitment to the priority of limited capital invested in such a venture.

While most TPOs appear to be at the earlier stages of this integration/innovation effort, not to continue to pursue the opportunity actually creates an opportunity cost that will only diminish the value of TPOs to their prime constituents, the SMEs, as global trade evolves.

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APPENDIX A: Institutions Visited

AUSTRALIA

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|---------------------------------------|---|
| Trade Promotion Organizations | Austrade www.austrade.gov.au |
| Export Credit Agencies | Export Finance and Insurance Corporation (www.efic.gov.au) |
| Banks | Westpac (www.westpac.com.au) ANZ (www.anz.com) Bibby Financial Services (www.bibby.com.au) |
| E Marketplaces/ Software Companies | Red Wahoo (www.redwahoo.com) |
| Academics | |
| Logistics | TradeGate (www.tradegate.org.au) |
| Other | Australian Government Information Management Office (www.agimo.gov.au) Australian Customs Service (www.customs.gov.au) Standards Australia (www.standards.org.au) |

CHINA

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|---------------------------------------|---|
| Trade Promotion Organizations | China Council for the Promotion of International Trade (www.ccpit.org) |
| Export Credit Agencies | |
| Banks | BNP Paribas (www.enercomxp.bnpparibas.com) |
| E Marketplaces/ Software Companies | |
| Academics | |
| Logistics | |
| Other | China International Electronic Commerce Center (www.ec.com.cn) APEC E – Commerce Business Alliance (www.apecceba.org) |

HONG KONG

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| Trade Promotion Organizations | Hong Kong Trade Development Council (www.tdctrade.com) |
| Export Credit Agencies | Hong Kong Export Credit Insurance Corporation (www.hkecic.com) Coface HK (www.coface.hk) |
| Banks | Standard & Chartered (www.standardchartered.com) Exonomy (www.exonomy.com) HSBC (www.hsbc.com.hk) |
| E Market Places/ Software Companies | Alibaba (www.alibaba.com) Core Solutions (www.coresolutions.com) |
| Academics | |
| Logistics | UPS (www.upscapital.com) |
| Other | Office of the Government Chief Information Officer (www.ogcio.gov.hk) Tradelink (www.tradelink.com.hk) Digital Trade and Transportation Network Ltd. (www.hk-dtt.com) GS1 HK (www.gs1hk.org) |

JAPAN

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| Trade Promotion Organizations | |
| Export Credit Agencies | |
| Banks | Mizuho Bank (www.mizuho.co.jp) |
| E Market Places/ Software Companies | |
| Academics | |
| Logistics | Polisa (www.polisa.or.jp) |
| Other | E Comm (www.ecom.jp) JastPro (www.jastpro.org) Rosetta Net (www.rosettanet.gr.jp) |

KOREA

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| Trade Promotion Organizations | KOTRA (www.kotra.or.kr) |
| Export Credit Agencies | Korea Export Insurance Corporation (www.keic.or.kr) The Export-Import Bank of Korea (www.koreaexim.go.kr) |
| Banks | |
| E Market Places/ Software Companies | EC 21 (www.ec21.com) |
| Academics | |
| Logistics | |
| Other | KTNET (www.ktnet.com); KITA (www.kita.org) LG Nortel (www.lg-nortel.com) |

NEW ZEALAND

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| Trade Promotion Organizations | New Zealand Trade and Enterprise (www.nzte.govt.nz) |
| Export Credit Agencies | The Treasury (www.treasury.govt.nz) |
| Banks | |
| E Market Places/ Software Companies | |
| Academics | |
| Logistics | |
| Other | State Services Commission (www.e.govt.nz) Ministry of Economic Development (www.med.govt.nz) Export New Zealand (www.exportnewzealand.org.nz) |

SINGAPORE

| | |
|--|---|
| Trade Promotion Organizations | |
| Export Credit Agencies | Coface Singapore (www.cofacerating.com.sg) |
| Banks | Overseas Chinese Banking Corporation (www.ocbc.com) Development Bank Singapore (www.dbs.com) |
| E Market Places/ Software Companies | Crimson Logic (www.crimsonlogic.com) |
| Academics | |
| Logistics | APL Logistics (www.apllogistics.com) |
| Other | Singapore Customs (www.customs.gov.sg) Infocom Development Authority (www.ida.gov.sg) Standards, Productivity and Innovation Board (www.spring.org.sg) |

CHINESE TAIPEI

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|--|--|
| Trade Promotion Organizations | Bureau of Foreign Trade (www.trade.gov.tw) |
| Export Credit Agencies | Export Import Bank (www.eximbank.com.tw) |
| Banks | Huan Nan Commercial Bank (www.hncb.com.tw) Changhwa Commercial Bank (www.chb.com.tw) China Trust Commercial Bank (www.chinatrust.com.tw) |
| E Market Places/ Software Companies | Trade Card Asia Pacific (www.tradecard.com) |
| Academics | National Sun Yat-Sen University (www.oia.nsysu.edu.tw) |
| Logistics | |
| Other | |

Part II

Regional Trade Agreements

Assessing the Impacts of FTAs: Issues for the Small, Open and Regionally Integrated Economy

Dan Ciuriak*

Abstract

The computable general equilibrium model has become the workhorse tool for assessing the impacts of bilateral trade liberalization. This paper draws on recent experience within Foreign Affairs and International Trade Canada in modeling the impacts of potential free trade agreements with various partners to highlight (a) the importance of microeconomic closures (and in particular the implicit assumptions concerning the elasticities of supply of capital and labour) that are suitable for the circumstances of the economy in question; (b) the likelihood that regional economic integration will result in significant intra-regional “leakage” of impacts of FTA effects with extra-regional partners; (c) the need to take into account institutional features such as producer price supports when liberalizing border measures; and (d) speculates on the possibility of linking the results from the gravity model literature on the trade impacts of FTAs with CGE model-based results—the former reflecting the “all-in” impacts, the latter the tariff effects alone, and the difference impliedly reflecting the non-tariff aspects of FTAs.

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Introduction

The workhorse tool for assessing preferential free trade agreements is the computable general equilibrium (CGE) simulation model, based on the Armington assumption that products are differentiated by country or region of origin. The varying values for the elasticities of substitution across products determines the responsiveness of trade flows to changes in the height of border protection. The initial conditions in the model's data base capture the essential roles of comparative advantage in shaping the product composition of a country's trade and of economic geography in determining the regional pattern of trade. The input-output relationships embedded in the social accounting matrix (SAM) for each country or region translate the trade flows into variables of interest to policy makers—economic output and economic welfare at the state/region level.

With this arsenal of data and economic architecture, the CGE model can tell a well-rounded story of the impact of a policy change, such as bilateral trade liberalization, on an economy. The trouble is that, within limits, it can tell almost any story the practitioner wants to tell. The task of narrowing the range of outcomes sufficiently to allow the simulation results to be used as policy advice falls to the modeler, based on information external to the model. Moreover, notwithstanding the impressive amount of detail captured in the model, the complexity of policies that affect production, consumption and trade (especially in agriculture) is not sufficiently well captured to allow reliance on unfiltered results from CGE simulations.

In this paper, I outline two major issues encountered in applying the widely used Global Trade Analysis Project (GTAP) model to simulating the effects of preferential trade agreements between Canada and potential FTA partners and the criteria applied to determine whether particular simulation results are plausible. These are as follows:

- Matching "closure" rules (the choice of variables to be determined exogenously) to the nature of the economy—in particular, what closure rules are appropriate for a small,

open, price-taking economy like Canada versus a large, price-setting economy like the United States?

- Taking account of the implications of regional integration for price responses in commodity markets in response to bilateral liberalization with out-of-region partners.

I also highlight two additional issues that need to be addressed to generate sensible results:

- Taking account of institutional features of agricultural policies and trade such as endogenous subsidies that impact on consumer and producer prices differentially and WTO rulings.
- Taking account of the non-tariff elements of FTAs by integrating the gravity-model based findings of actual FTA impacts.

Closure Rules and the Supply Side Response in CGE Simulations

In performing simulations, the modeller must make some choices as regards which variables in the model are to be exogenous (i.e., fixed at pre-determined values specified by the modeller) and which are to be endogenous (i.e., the values for which are solved by the model). Alternative choices represent alternative "closures" of the model.

Under the GTAP model's default microeconomic closure, the factor endowments (i.e., the total supply of labour, both skilled and unskilled, as well as of capital and land) are fixed; factor prices (i.e., wages and return to capital and land) adjust to restore full employment of the factors of production in the post-shock equilibrium. Under alternative microeconomic closures that are sometimes used, the return to capital or to labour¹ can

¹ For an example of the use of the labour market closure rule under which the wage rate is fixed, see Francois and Baughman (2005).

be fixed and the supply of capital and/or labour then adjusts to restore equilibrium².

Choice of closure impacts on the size of model responses

The choice of closure influences the results significantly. For example, in an analysis of the economic impacts of a US-Korea FTA, reported net economic welfare gains for Korea are 2.7 times larger, and for the US that are 2.4 times larger, with the flexible capital closure compared to standard closure Gilbert (2001).

Choice of closure also determines the composition of impacts

Equally importantly for policy analysis, the choice of closure rules dramatically alters the composition of economic impacts. For example, changing the closure rule in a simulation of a Canada-Korea FTA changes the sign on allocative efficiency and terms of trade effects as well as greatly altering the absolute values (for Canada, the GDP impact varies by a factor of 4 between the most and least restrictive closure rules; for Korea the corresponding factor is 28³). Needless to say, the sectoral rami-

² The second aspect of closure is macroeconomic closure. Two approaches are available. The standard GTAP closure allows the current account to adjust to the trade shock, with passive accommodation by international investment flows. The change in the current account implies a change in domestic investment. In the GTAP model, the change in investment is reflected in the profile of final demand which in turn affects the profile of production and trade but does not feed through into the productive capacity of industries/regions. The alternative macroeconomic closure is to fix the current account, implicitly assuming no international capital mobility. For a comparison of the impact of using these alternative macroeconomic closures in the context of modelling the US-Korea Free Trade Agreement, see Gilbert (2001). The fixed current account simulations reduce substantially the economic welfare gains for Korea (to 3/5 the level of the simulation with flexible current account) and marginally (by 5%) for the United States. Since the fixed capital account closure is an unrealistic assumption for small, open economies like Canada, the implications of this option are not explored here.

³ For an application of this approach, see Ciuriak and Chen (2008).

fications of liberalization and the impact on other trading partners are similarly affected.

Examining the assumptions implicit in closure rules

Quantitatively and qualitatively, therefore, the messages from a GTAP simulation depend not on the model but on assumptions made by the modeller on how to use it. These assumptions need airing⁴ and careful consideration.

The standard or default GTAP closure (labour and capital supply fixed; rates of return to capital and wage rates adjust) is sometimes characterized as reflecting a medium-term time horizon; by contrast, the closure rule in which the rate of return to capital is fixed and capital supply adjusts is sometimes described as reflecting longer-run "steady-state" growth conditions. However, neither of these characterizations is actually persuasive.

For example, the model's structure assumes that capital and labour are fully mobile across sectors within an economy—regardless of which closure rule is chosen. If one interprets the fixed factor supply closure as reflecting a short- to medium-term time frame in which total labour supply is "sticky" and capital has been committed to particular uses, then there is a time inconsistency with the fact that this closure still assumes a sufficiently long time frame to permit full depreciation of fixed capital investments in declining industries or firms and new investment in expanding industries or firms and even generational change in the labour market (e.g., to allow full redeployment of labour from farming to industry). In other words, there is far too much flexibility in cross-sectoral industrial adjustment for this closure to be consistent the medium-term time frame characterization of the factor supply market assumed at the aggregate economy level.

A second inconsistency arises from the fact that both the long-run "steady state" and the short- to medium-run fixed factory supply closures assume general equilibrium and thus full utilization of resources. While the full resource utilization as-

⁴ This point is made in Winston (2007).

sumption is reasonable in the long run, it is problematic for the short- to medium run, the period in which the economy is adjusting to the policy shock being modelled. To assume full employment of resources in this time frame is tantamount to assuming negligible frictional costs to structural adjustment, which is contrary to intuition⁵ and the empirical evidence⁶.

Similarly, the "steady-state" closure rule, which involves full adjustment of capital supply to a change in the rate of return, but no adjustment at all of labour supply to changes in wage rates and thus in the marginal value of leisure, hardly accords with the observed long-run rise in labour force participation as the returns to labour market participation have risen in the developed countries.

Given the above considerations, it is best to see the closure rules for what they are: assumptions about the long-run supply of labour and/or capital. Seen this way, the conventional closures make arbitrary and extreme assumptions about these elasticities: labour and capital supply are assumed to be either perfectly elastic or perfectly inelastic in the long run. The reality is likely to be somewhere between. Moreover, I will argue that the reality is likely to be different for different types of economies. The "choice" of closure thus is not really a choice but an empirical question for the modeller to answer.

The GTAP model can be simulated to approximate intermediate values of the elasticity of supply of capital and/or labour. The modeller's assumptions for these parameters, based on empirical evidence drawn from outside the model, determine how the gains from an FTA are obtained. For example, for labour, the more ine-

⁵ For example, sectoral re-allocation of labour in a regionally heterogeneous country such as Canada requires inter-regional mobility of labour, which definitely is not frictionless.

⁶ The short- to medium-term impact of the Canada-US FTA on Canadian industry was essentially to shut down the least productive establishments in the sectors that had previously benefited from the highest level of tariff protection. The result was a decline in employment in import-competing industries coupled with a steep rise in labour productivity; the employment-to-population ratio recovered in the longer-term but in the interim there was under-utilization of labour. See Trefler (2004).

lastic is labour supply, the greater the extent to which gains are achieved in the form of wage increases; conversely, the more elastic is labour supply, the greater the extent to which gains are achieved in the form of additional jobs. Similarly, as noted earlier, for the economy as a whole, the gains reflect either improved prices (and thus improved terms of trade) or increased output—or some combination of the two—depending on the assumptions about supply-side elasticities established in the chosen closure.

Given the sensitivity of the results to the specific assumption made, it is useful in practice to examine the results of simulations for several alternative closure rules:

- (a) labour and capital supply fixed (the standard or default closure);
- (b) labour supply flexible, capital supply fixed;
- (c) labour supply fixed, capital supply flexible; and
- (d) both labour and capital supply flexible.

These alternatives map out the "ballpark" for the impacts of a given policy simulation; the modeller's reference scenario, employing the assumptions for capital and labour supply deemed most appropriate for each economy is then set in context⁷.

It goes almost without saying that the choice of assumptions for any particular economy should be grounded in the empirical evidence for that economy. A few generalizations are, however, possible.

As regards the long-run supply of capital, for a small open economy like Canada that has relatively untrammelled access to capital in a highly integrated North American and global capital market, it is unlikely that a rise in the rate of return to capital in Canada relative to the US would not be met with higher investment, even if this were not financed through increased domestic savings. The most plausible assumption for capital supply is that it is highly elastic; the steady state closure rule for capital might be considered a reasonable approximation.

Conversely, for a large, price-setting economy like the US, a sustained increase in the rate of return relative to elsewhere in the

⁷ For an application of this approach, see Ciuriak and Chen (2008).

world is plausible. At the same time, the additional capital would have to be forthcoming in good measure from domestic sources, implying less elastic supply than in a small open economy. Accordingly, the assumption of inelastic supply is appropriate to the US case, and is commonly used. That being said, given that the US share of global economic activity is declining on trend, and it continues to attract vast capital inflows, the standard GTAP closure rule of zero elasticity of capital supply is becoming ever less plausible.

In between, there are many smaller economies that are open to capital inflows in varying degrees. It is reasonable to expect that rates of return could differ across economies and that a policy shock could lead to higher returns, coupled with some expansion of supply.

As regards the long-run supply of labour, the economic literature supports a positive but relatively low supply elasticity. Some recent empirical evidence suggests that the labour supply elasticity in industrialized countries could be as high as unity⁸; traditionally, the accepted value has been less than half that value. Labour supply is of course subject to a negative income effect, making the net impact of a rise in wage rates and a rise in incomes an empirical question, at least in the higher-income countries⁹.

To the extent that the modeller is not building in a productivity boost to capture the effect demonstrated using heterogeneous firm models that trade liberalization leads to exit of the least productive firms, driving up average productivity, then allowing a stronger labour supply response would serve as a reasonable proxy for these non-represented productivity effects.

⁸ For a recent discussion of the elasticity of supply of labour see Ham and Reilly (2006). This study finds statistically significant inter-temporal labour supply elasticities of 0.9 with the Panel Study of Income Dynamics (PSID) data set and 1.0 with the Consumer Expenditure Survey (CES) data set.

⁹ In lower-income countries where there is a large supply of unskilled labour in the rural sector, it would be plausible to have substantially higher elasticities of labour supply, without regard to any dampening effect from rising incomes.

Reality Checks

Building in some degree of supply response into the model injects a "dynamic" element into the simulation. However, this dynamic effect is not explicitly established; it emerges implicitly from the model's structure. This raises the question: how plausible are the measured endowment effects? Several criteria can be used as benchmarks against which a given simulation's results can be compared:

- (a) The extent of trade deepening can be compared to the GDP gain: Empirical estimates of the relationship between expanded trade and economic activity suggests a strong impetus to GDP growth but overall smaller gains in GDP than in trade. A specific quantitative "rule of thumb" has been suggested: "Research ... using a variety of alternative techniques, suggests that annual GDP gains to each partner would amount to 20 percent of the expanded [bilateral] trade... These gains reflect the adoption of improved production methods in response to competitive pressures, the exit of less efficient firms, scale and network economics, reduced mark-up margins, more intensive use of imported inputs, and greater variety in the menu of available goods and services."¹⁰ The precise interpretation of this rule of thumb is that for every percentage point increase in the trade share of GDP—(exports + imports)/GDP—there is a 0.2 percentage point increase in GDP.
- (b) The extent of trade diversion can be examined—especially as regards exports. Theory suggests that, in the presence of sunk costs of market entry, there ought to be some degree of "compression" of exports—firms export to fewer countries than they otherwise would because of the sunk costs associated with establishing a market presence in each new market. It follows that, if firms are induced to establish a presence in an FTA partner country, exports to third countries might be lower than otherwise would have been the

¹⁰ DeRosa and Gilbert. 2006. At p. 238.

case. The empirical literature does not offer a consensus opinion on the extent of trade diversion caused by FTAs. The "conventional wisdom" has been that the trade creation effect has dominated the trade diversion effect. Direct attempts to measure whether FTAs reduce the amount of trade with third parties using gravity models have generally failed to show significant negative affects, although different studies have reached opposite conclusions on this point¹¹. Given that the literature does not decisively support extensive trade diversion, simulations which generate very large extents of trade diversion with regard to exports suggest too little in the way of "dynamism".

- (c) The division of impacts for an economy between allocative efficiency (which equals the increase in GDP measured at pre-shock prices) and terms of trade needs to be examined. Simulations that show small, open economies obtaining the bulk of their gains from an FTA in the form of terms of trade gains probably have too little dynamism. For example, Trefler (2004) finds that the Canada-US FTA on Canada resulted in little if anything in the way of terms of trade gains.

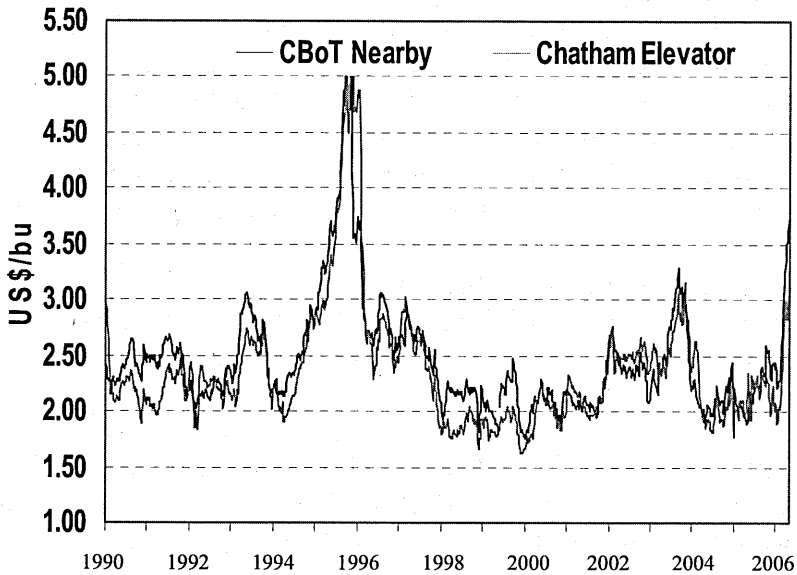
The implications of regional integration for price responses in commodity markets

The empirical record suggests that because of regional integration of the markets, Canadian agricultural prices moving in tandem with US prices as quoted on US exchanges, after account is taken for the exchange rate (see chart below for corn)¹².

¹¹ A 2003 study for the Australian Productivity Commission contradicted this conventional wisdom, finding that most FTAs reported to the WTO were trade diverting. Adams, Dee, Gali, and McGuire (2003). However, DeRosa (2007) reviewing this same evidence using updated trade data reached the opposite conclusion, namely that most FTAs were net trade creating.

¹² Based on the data in Agriculture and Agrifood Canada's Food and Agriculture Research Model (FARM), which uses annual prices, a regression of Canadian prices on US prices yields a coefficient of almost one in front of the US price expressed in Canadian dollar terms with an r-square of 0.99.

Weekly Corn Prices in Canada and the United States



Source: Agriculture and Agri-Foods Canada

However, when dealing with minimally differentiated commodities such as beef, pork or grains, the Armington assumption, when applied with GTAP 6.0 elasticities, results in significant price increases in Canadian commodity sectors relative to US commodity sectors when very high tariff barriers are removed. In the opinion of agricultural trade experts, such sustained price wedges cannot emerge; if so, that means the supply responses generated by the GTAP model can also not occur.

Working through the problem logically, the extension to Canadian producers of preferential, tariff-free access to a large highly protected agricultural product market in a third country expands demand for Canadian product. This causes prices for Canadian output to rise. In turn, this gives rise to two effects: on the one hand, Canadian producers expand supply; on the other hand, US exports to Canada become more competitive and expand. Given the relatively large size of the US agricultural sector compared to Canada's, the latter effect has more

mented price impacts in the US market. The bottom line is that US producers share in the expansion of production to satisfy the demand from Canada's FTA partner. Moreover, the overall price increase in the combined North American market needed to satisfy the expanded demand is lower than the price increase needed to satisfy this demand from Canadian produce only, which in turn implies the competitive impact of lower-priced imports from Canada in the FTA partner country is also deepened.

One way to estimate the quantitative implications of this effect is to first run an initial simulation to identify commodity sectors in which large relative price and output gains are calculated for Canadian producers. In a second simulation, those same sectors are simultaneously opened up to US producers as well. In effect, this assumes that US and Canadian commodities are perfect substitutes, abrogating the Armington assumption for these products. The model-calculated expansion of exports from the US to the Canadian FTA partner are then to be interpreted in triangular trade terms: these exports actually go to Canada while an identical amount of additional Canadian exports are diverted from the domestic market to the FTA partner¹³.

Does this work? While we are not yet ready to put numbers out into the public domain, the results of this approach are encouraging in that the responses are qualitatively in line with expectations and quantitatively the triangular trade flows are similar to those in the bilateral liberalization case, while the price response in Canada and the US fall into line with expectations. However, for GTAP sectors that aggregate a number of varied products and for which the composition of trade is different for Canadian versus US producers and hence the weighted tariff facing US exporters differs from that facing Canadian producers, the results are less satisfactory and more careful work is required to build in this effect.

¹³ An alternative is to boost the elasticities of substitution for these commodities. However, this has repercussions throughout the model and may introduce more distortions than it cures.

The important take-away point is that, to the extent that North American commodity market integration limits the price increase that Canadian producers can obtain, the model-calculated terms of trade impacts are over-stated. This has significant implications for the Canadian FTA partner since the downward price pressures from liberalization are actually greater. And for third countries, the reduction of terms of trade gains for Canada reduces terms-of-trade-induced welfare losses for net importers of those commodities and affects outcomes for rival net exporters as well.

Institutional Features of Agricultural Trade

Trade in agricultural products requires special attention because of the complexity of the institutional setting, including the effects of producer support systems and the rules governing subsidized exports which are still permitted under the WTO Agreement on Agriculture, but which are subject to reduction commitments.

It goes without saying that exports of products that are considered to be subsidized and therefore subject to reduction commitments cannot be expanded if the estimated level of border protection is eliminated. This is the situation, for example, with Canada's exports of dairy products, which face high measured border protection in the GTAP protection data, but which could not benefit from elimination of this protection because of WTO rulings¹⁴.

We are attempting to deal with endogenous subsidies such as payments to farmers that are triggered when market prices fall below a certain threshold. Since such producer price supports are not likely to be part of a bilateral trade deal, their retention can have important implications for output in the liberalizing country. For example, Japan has a 38.5% tariff on beef and maintains a producer subsidy program in the form of direct deficiency payments, which kick in when prices fall below a target level. When modelled using the OECD's AGLINK model, which expressly

¹⁴ For a review of the case history, see WTO (2001) at p. 11, para 3.2.

takes these policies into account¹⁵, tariff liberalization in Japan results in the consumer price falling substantially. GTAP calculates a roughly similar price drop. However, where the AGLINK model shows relatively modest production impacts in Japan, the GTAP model calculated production impact is substantially greater, since it does not take into account the way in which the deficiency payments impact on producer behaviour.

Taking account of the non-tariff elements of FTAs

While CGE-model-based estimates of FTA impacts are restricted to elimination of tariffs and other quantifiable measures of protection, modern FTAs address a wide range of other areas of cooperation and facilitation¹⁶. Action in these areas can reduce costs which drive a wedge between firms' domestic costs of production and the all-in cost of bringing product to destination markets.

As well, the economic literature suggests that the price effects from tariff reductions do not fully capture the impact of an economic cooperation agreement on business behaviour.

Finally, it has been suggested that conventional CGE models underestimate the trade impacts in the differentiated goods

¹⁵ AGLINK is a dynamic partial equilibrium supply-demand model of world agriculture developed by the OECD Secretariat in close co-operation with Member countries and the FAO. It explicitly models annual supply, demand and prices for the principal agricultural commodities produced, consumed and traded by Member countries. The model was expressly designed to capture the potential influence of agricultural policies on agricultural markets over a medium term horizon.

¹⁶ For example, in the negotiations between Canada and Korea, issues that are being addressed include trade in goods, rules of origin, customs procedures, trade facilitation, non-tariff measures, cross-border trade in services, financial services, temporary entry, investment, government procurement, competition, intellectual property, e-commerce, dispute settlement and institutional provisions. In addition, Canada is pursuing environmental and labour cooperation agreements in parallel with the free trade negotiations. See Foreign Affairs and International Trade Canada, *Canada-Korea - Free Trade Agreement Negotiations*, <http://www.international.gc.ca/tna-nac/rb/korea-en.asp>.

sector because they capture only trade expansion at the intensive, and not the extensive, margin. It follows that empirically-based estimates of FTA trade effects, such as those obtained using gravity models, should show greater trade gains, especially in the differentiated products sectors, than CGE model simulations would suggest. This section explores these issues.

Complementarity between trade and investment and services

The rising importance of intra-firm trade in global trade and an associated positive correlation between trade and investment have been well-documented in the economic literature¹⁷.

To some extent, increased two-way investment due to investment liberalization or facilitation can be expected to increase bilateral trade flows. However, causal links can run both from increased trade to increased investment (e.g., firms establish a corporate presence in destination markets for distribution and after-sales service support) and from increased investment to increased trade (e.g., firms import inputs from their home base to be assembled in the investee country). Moreover, the relationship between investment and trade can vary from sector to sector and from country to country, depending on the motive for the foreign investment¹⁸. Accordingly, it can be difficult to establish the quantitative impact of increased investment flows on two-way trade.

Similar complementarities between goods trade and services trade also appear to exist, with similar issues concerning the direction of causality.

¹⁷ It has been widely debated whether trade and investment are complements or substitutes. Overall, as the OECD (2005) reports, "greater trade correlates with greater investment flows." at p.8. For an empirical investigation into this linkage see Goldberg and Klein (1999).

¹⁸ Empirical estimates by Graham and Wada (2000) suggest an elasticity of 0.6 for the "pull" of US direct investment abroad on its exports; Hejazi and Safarian (1999) report a small coefficient for Canada. The citations for both studies are drawn from Hufbauer and Baldwin (2006).

In the context of growing trade in intermediate goods and services and the associated emergence of global value chains¹⁹, measures to facilitate investment and/or liberalize services trade in an economic partnership agreement would be expected to have an impact on two-way goods trade over and beyond the effect induced by lower tariffs.

Business behaviour effects of trade agreements

The impact of tariff changes on trade flows as measured in conventional economic models reflects the response of trade flows to changes in prices, with no differentiation for a price change that reflects a marginal reduction in a tariff versus full tariff elimination in the context of a political commitment embodied in an economic agreement to promote the bilateral economic relationship in various ways.

A number of reasons have been suggested in the economic literature as to why a stronger trade response might be expected in the latter case, namely full tariff elimination in the context of a broader economic cooperation agreement.

- The “announcement effect”: the conclusion of an agreement acts like a “wake-up” call to the private sector, drawing attention to the new possibilities offered by the agreement.
- A somewhat different articulation of this is the “animal spirits” effect: business enthusiasm is raised by the agreement, which leads to trade-creating actions.
- The “lock-in effect”: firms have greater certainty about market access by the capping of non-tariff barriers to trade in goods and services, investment, the movement of business persons etc. In the presence of sunk costs (that is, expenditure of resources to establish a presence in a new market), a reduction of perceived business risk translates into a greater expected return on the investment required to establish a market presence (Freund, 2000).

¹⁹ For a recent overview of this phenomenon, see Sturgeon (2007).

- The "compression effect": in the presence of sunk costs, firms are likely to concentrate their resources on markets with greater potential (Haveman, Nair-Reichert and Thursby, 2003). An economic agreement will thus have the effect of attracting the resources of trading firms to building a deeper bilateral economic relationship.

Capturing trade expansion at the extensive margin

In the framework of CGE models, the various factors shaping trade patterns, including comparative advantage and economic geography, are reflected implicitly in the initial conditions (i.e., the base year trade data) established in the social accounting matrix. If there is no trade in a particular sector between two countries or regions, the reduction of protection cannot induce trade. In short, CGE models capture trade effects at the "intensive margin" (where there is existing trade) but not at the "extensive margin" (where there is no existing trade).

Recent work by Fan (2006) which includes firm heterogeneity and fixed exporting costs (following Melitz, 2003), into the CGE framework, suggests that standard CGE simulations substantially underestimate the trade and economic welfare effects of trade opening²⁰.

Linking results from gravity models to results from CGE models

An alternative tool that is widely used to evaluate the potential impact of free trade agreements is the gravity model of international trade. Gravity models estimate the overall size of bilateral trade flows based on a wide variety of factors that might otherwise influence the bilateral trading relationship, including size of the respective economies, their distance from one another, their wealth, and various points of commonality such as

²⁰ Illustrative simulations in this paper suggest that taking into account trade creation at the extensive margin more than doubles the estimated trade and economic welfare gains compared to those generated with a standard Armington CGE model.

common language, culture, borders etc. that are linked to the strength of trade interaction. By taking into account whether two countries are members of a regional trade agreement, the gravity model can provide an estimate of the overall impact on trade of such an agreement.

By and large, empirical studies of the impact of FTAs on trade tend to show larger increases in trade than CGE simulations project. For example, one study of a potential US-Switzerland FTA which alludes to announcement and lock-in effects as well as to investment-trade links, reported that gravity model results indicate an expansion of bilateral trade approximately five times as great as the CGE results (Derosa and Gilbert, 2006).

The larger impact on trade identified using gravity models compared to CGE models can be interpreted as reflecting the effects of the non-tariff elements of a trade agreement, including the behavioural response of business, as well as the underestimation implied by failure to capture trade expansion at the extensive margin.

One way to directly integrate the gravity and CGE results would then be as follows.

- First, the impact on bilateral trade flows of a representative set of high-quality FTAs would be estimated using a gravity model. In this regard, Baier and Bergstrand (2005) have recently estimated FTA coefficients that range from 0.46 to 0.68, implying bilateral trade impacts in the range from 58 to 97 percent (using $e^{0.46} = 1.58$ and $e^{0.68} = 1.97$). Their preferred estimate is 0.62. In other words, an FTA on average increases two member countries' trade about 86 percent.
- Second, for the same subset of countries (or for a similar set of countries), the trade effects of the FTA would be estimated using a CGE model. The difference between the two trade effects would then represent the incremental boost to trade of the dynamic and non-tariff effects of a high-quality economic cooperation agreement as well as any underestimation of differentiated goods trade.

Given the methodology, any such estimate would obviously have to be considered to be subject to a considerable margin of uncertainty. Nonetheless, this approach might serve to provide some quantitative dimension to some of the non-tariff effects of FTAs that have been suggested by economists.

Conclusions

Impressive strides have been made in developing technology to assist trade analysis, the GTAP model and its data base being a prime example. Nonetheless, we are still not in a position where we can simply “push the button” to get robust, meaningful results; the exercise still requires, in almost every study undertaken it would seem, that the analyst “push the envelope” when applying the model.

This paper draws on recent experience within Foreign Affairs and International Trade Canada in modeling the impacts of potential free trade agreements with various partners to highlight the importance of microeconomic closures (and in particular the implicit assumptions concerning the elasticities of supply of capital and labour) that are suitable for the circumstances of the economy in question. Alternative closures affect significantly not only the size of estimated impacts but also their composition. In particular, it is pointed out that, for small, open, price-taking economies, the often-used closure rule of fixed factor endowments heavily skews impacts towards terms of trade, contrary to intuition and empirical evidence. The paper highlights the likelihood that regional economic integration will result in significant intra-regional “leakage” of impacts of FTA effects with extra-regional partners, especially in the case of minimally differentiated commodities. It further highlights the need to take into account institutional features such as producer price supports when liberalizing border measures. Finally, it speculates on the possibility of linking the results from the gravity model literature on the trade impacts of FTAs with CGE model-based results—the former reflecting the “all-in” impacts, the latter the tariff effects alone, and the difference impliedly reflecting the non-tariff aspects of FTAs.

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The Strength of Cross-Border Linkages Between US and Canadian Industry

Joseph Francois and Laura M. Baughman*

Introduction

Thanks to geography, the Canada-US Free Trade Agreement, and the North American Free Trade Agreement, among other bilateral trade initiatives, the US and Canadian economies are today firmly linked to each other. This linkage is perhaps most evident in the automobile sector, where the border between the two economies has virtually disappeared. Parts, components and finished products move back and forth between integrated production facilities. But it extends as well to many other sectors of both economies.

The linkages between the two economies are actually deeper than finished product trade would suggest. Not only do parts and components producers on both sides of the border benefit from integration, but dozens of other sectors participate in the process as well—albeit less obviously: steel producers making corrosion resistant steel, and services companies transporting, financing, and insuring the production, movement or sale of goods all along the value train. Indeed, when a finished product like a motor vehicle is sold across the border, it embodies not just the direct production of the motor vehicle, but the underlying activities that supported the final assembly. This

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includes, for example, the mining and services firms that support the steel industry that in turn supplies intermediate products for motor vehicle production. Because modern economies involve a complex web of intermediate linkages, important stakeholders in the North American trade relationship are not limited to producers directly exporting final products. In a sense, then, the entire economy, with varying degrees of involvement, supports the chain of production that leads to the export of final products.

This paper explores these interactions and quantifies the degree to which US and Canadian production, by sector, is integrated across the border. It also quantifies the degree to which the activities of numerous up- and down-stream sectors of the United States and Canada are embodied in final goods and services trade.

Methodology

In an earlier study, we quantified the US output and employment related to US-Canadian goods and services trade in 2005 (Baughman and Francois, 2007). We employed a computable general equilibrium (CGE) model of the US and Canadian economies to measure these relationships. CGE models include data that measure the fundamental relationships between all the sectors of an economy. These data are organized into a tool called a "social accounting matrix" (SAM). A SAM is a square matrix (i.e., it has an equal number of columns and rows). For a given sector in a column, the corresponding row shows how much the sector spent on inputs from the sector in the row, or on imports and exports (Reinert and Roland-Holst, 1997; Blonigen et al., 1997).

A SAM is constructed on the basis of an economy's input-output table, national accounts, government budgetary accounts, balance of payments and trade statistics. The input-output table provides information on the production sector of the economy, showing inter-industry linkages and the contribution made by primary factors of production to each sector. The trade account typically contains data on the destination and product

composition of exports and imports. These two accounts show not only how much steel, plastic, textiles, and services go into the production of a car but also how much of these inputs is sourced domestically and how much is imported and from whom. A CGE model incorporates SAMs for each country, standardized and then combined. Each SAM is for the same base year, and all values are measured using a single currency.

We work here with a global SAM benchmarked to the year 2005. The SAM includes 31 sectors. The sectors are listed in Table 1 (and subsequent tables). Our SAM is built from the intermediate linkage data in the Global Trade Analysis Project (GTAP) database (Version 6.2, benchmarked to 2001), supplemented with more current trade, production, and income data.

Starting from our SAM, to examine production linkages, we denote a country's n by n social accounting matrix by S (where n is the number of elements in each column and row index) and a column unit n -vector by e . Then $c = e'S$ is the column-sum vector of S . If the symbol $\hat{\cdot}$ over a vector is used to denote the corresponding n -dimensional diagonal matrix, then

$$(1) \quad A = \hat{c}S^{-1}$$

where A represents the column-sum normalized SAM. Hence, while S_{ij} is the actual expenditure received by sector i from sector j , an element A_{ij} is the proportion of sector j 's expenditure received by sector i . Combined with sector-level trade data from Canada, we are then able to allocate the share of total industry cost, for each US industry j , related to imported inputs from Canada in industry i (these shares are reported in Table 1). Similarly, combined with sector-level trade data from the US, we are also able to allocate the share of Canadian total industry cost related to imports from the US

While the elements of the A matrix can be interpreted as direct input coefficients, we are also interested in the complete set of linkages, involving both direct input demand (like services

bought by the transport equipment sector), and also indirect linkages (such as the services bought by the steel sector which then are embodied in steel products sold downstream to the transport equipment sector) (see Reinert and Roland-Holst 1997). To do this, we divide the n accounts of a country's SAM into two groups: m endogenous accounts and k exogenous accounts. Following convention, we define the k exogenous accounts as the government, capital, and rest-of-world accounts (see Robinson, 1989). (The rest-of-world account includes Canadian exports to the US, and US exports to Canada, split out separately). All remaining accounts, including the consumption account, are endogenous. Define the sub-matrix of \mathbf{A} consisting of the m endogenous accounts as \mathbf{A}_{mm} . The multiplier matrix is given by

$$(3) \quad \mathbf{M} = (\mathbf{I}_m - \mathbf{A}_{mm})^{-1}$$

A representative element of the \mathbf{M} matrix, M_{ij} , gives the direct and indirect marginal effects on sector i income (demand) caused by an exogenous unit increase in sector j income (demand). Following Reinert and Roland-Holst, we take one final step and use the multiplier matrix to break down total exports by destination into implied total direct and indirect demand. Define $f_{i,r}$ as the export final demand for commodity i to destination r , and \mathbf{f} as the column vector of such elements. The coefficient ϕ

$$(4) \quad \phi_{i,r} = f_{i,r} / \mathbf{f}'\mathbf{e}$$

gives the share of commodity i in total export demand to destination r — for example in US exports destined for Canada—and the matrix Φ contains the full set of these coefficients. This matrix represents direct export shares. To account for intermediate linkages, we also define the column vector

$$(5) \quad \frac{1}{2} = \mathbf{M}\Phi$$

Elements $\omega_{i,r}$ of Ω give the weighted average direct and indirect effect on the value of activity in sector i that follow from increasing export demand to region r by one dollar, holding the sector composition of total exports to that destination constant. (These values are summarized reported in Table 2.)

Results

An examination of the SAMs for the United States and Canada, adjusted as detailed above, confirms that the two economies are highly integrated. The data in Table 1 are reported in share terms. They show, for example, that Canadian inputs represent 12 percent of the production cost of US petrochemical output; 5 percent of the cost of US lumber output, and 6 percent of the cost of US motor vehicle output. The importance of US inputs to Canadian production is quite a bit larger: inputs sourced from the US account for 21 percent of the input cost of Canadian iron and steel output; 43 percent of the cost of Canadian motor vehicle output, and 28 percent of the cost of Canadian chemicals, rubber and plastics production.

Table 1 also reports imported inputs from the United States (or Canada) by Canadian (or US) producers as a share of total producer price¹. While these are generally lower than the values in the first and third columns—as we are now including labor costs, capital income, profit, and taxes—the basic pattern is the same. For Canadian industry, inputs from its Southern neighbor are a very important share of total production costs. The same holds true for US producers, though given the relative size of the economies, Canadian inputs are not as large a share of total producer price as they are for Canadian producers.

¹ Producer price is taken as the column sums from the intermediate use component of the overall SAM, summed over intermediate use, value added, and taxes.

Annex Tables A-1 through A-4 detail the input shares by sector for Canadian inputs to US output, and US inputs to Canadian output. Table A-1 shows, for example, that the largest Canadian component of the 6 percent contribution to the cost of a US motor vehicle came from the Canadian motor vehicle sector, followed by the Canadian utilities sector. Table A-3 similarly shows that US fabricated metals, transport equipment, and machinery and equipment are particularly important inputs to Canadian steel production.

Table 2 presents our measures of indirect export shares. The Table gives us an indication of the gross value of output (including the cost of inputs) in each sector that results from \$1.00 in export sales to Canada. These measures are defined in equation (5) above, and can be read as follows. From the first column in Table 2, every \$1 in US exports in Canada involves \$0.15 in activity in primary production, \$0.85 in durable goods production, \$0.59 in nondurable goods production, and \$2.55 in activity in services². Hence, in contrast to direct trade data where US goods exported to Canada (\$212 billion in 2005) outweigh US services exports to Canada (\$33 billion), in terms of the up and downstream activity *linked* to exports to Canada, services dominate. These indirect values are scaled in share terms in the second and fourth columns. Hence in the case of US exports to Canada, 20 percent of the gross value of associated economic activity is in durable goods production and 61 percent in services (including services feeding into durables production). From the values in the table, the pattern of Canadian exports is more focused on primary production and manufacturing, while the United States, it is more focused on services. More detailed estimates by sector are reported in Annex Table A-5.

² The values in the table add to more than \$1 because we are counting inputs that flow downstream into final exports, and so value of output by sector, including as it does inputs from other sector, adds up to more than \$1.

Conclusion

These detailed assessments of the up- and down-stream linkages between the two economies lead to the firm conclusion that changes in US-Canada trade—be they increases or decreases—have impacts much greater than the direct value of the change would suggest. Sectors impacted span the range of economic activity, not just those directly engaged in trade. Thus, a “steel trade problem” would have ramifications for non-steel manufacturing and services, among others. Those additional impacts need to be considered by policy makers.

The analysis also shows that each country contributes significantly to the production value chain of the other. Higher costs (or material shortages) felt by one will filter through to the other. To the degree that public policy affects costs and source of input supplies, the likely impact of policies on the full range of a country’s industries, not just those most obviously involved in trade needs to be taken into account.

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Table 1
Cost Shares Due to Intermediate Linkages

| | Canadian exports -- share of U.S. costs | | U.S. exports -- share of Canadian costs | |
|-----------------------------|---|-------------------------------|---|-------------------------------|
| | share of total input costs | share of total producer price | share of total input costs | share of total producer price |
| agriculture & fisheries | 0.0120 | 0.0065 | 0.1106 | 0.0512 |
| forestry | 0.0065 | 0.0022 | 0.0728 | 0.0384 |
| mining | 0.0271 | 0.0109 | 0.1060 | 0.0598 |
| utilities | 0.0139 | 0.0059 | 0.0795 | 0.0220 |
| construction | 0.0225 | 0.0100 | 0.1687 | 0.0827 |
| lumber | 0.0480 | 0.0262 | 0.1643 | 0.0974 |
| iron & steel | 0.0230 | 0.0147 | 0.2058 | 0.1192 |
| non-ferrous metals | 0.0583 | 0.0404 | 0.1786 | 0.1113 |
| fabricated metals | 0.0283 | 0.0146 | 0.2274 | 0.1146 |
| motor vehicles | 0.0565 | 0.0417 | 0.4332 | 0.3099 |
| other transport equipment | 0.0669 | 0.0358 | 0.3749 | 0.2204 |
| electrical machinery | 0.0206 | 0.0180 | 0.3698 | 0.2224 |
| other machinery & equipment | 0.0306 | 0.0146 | 0.3804 | 0.1998 |
| non-metallic minerals | 0.0189 | 0.0094 | 0.1906 | 0.0935 |
| other durables | 0.0289 | 0.0159 | 0.2755 | 0.1379 |
| processed foods | 0.0189 | 0.0125 | 0.1435 | 0.0953 |
| beverages & tobacco | 0.0116 | 0.0077 | 0.1154 | 0.0634 |
| textiles | 0.0222 | 0.0132 | 0.2850 | 0.1619 |
| apparel | 0.0120 | 0.0085 | 0.2140 | 0.1113 |
| leather | 0.0238 | 0.0136 | 0.2480 | 0.1334 |
| paper, pulp, & publishing | 0.0549 | 0.0334 | 0.1652 | 0.0880 |
| petrochemicals | 0.1210 | 0.1160 | 0.1898 | 0.1761 |
| chemicals, rubber, plastics | 0.0286 | 0.0160 | 0.2791 | 0.1602 |
| trade | 0.0108 | 0.0041 | 0.0696 | 0.0241 |
| transport | 0.0099 | 0.0051 | 0.0751 | 0.0205 |
| information | 0.0042 | 0.0020 | 0.0281 | 0.0073 |
| finance & insurance | 0.0027 | 0.0010 | 0.0546 | 0.0168 |
| business services | 0.0090 | 0.0021 | 0.0556 | 0.0193 |
| consumer services | 0.0066 | 0.0039 | 0.0661 | 0.0210 |
| real estate | 0.0006 | 0.0001 | 0.0099 | 0.0007 |
| other services | 0.0100 | 0.0032 | 0.0903 | 0.0176 |

Table 2
Indirect Exports

Indirect exports -- domestic activity per dollar of exports

| | United States | | Canada | |
|-------------|----------------------------|-------------------------------------|----------------------------|-------------------------------------|
| | Indirect activities, value | Indirect activities, share of total | Indirect activities, value | Indirect activities, share of total |
| Primary | 0.1560 | 0.0376 | 0.1850 | 0.0737 |
| Durables | 0.8500 | 0.2048 | 0.9290 | 0.3701 |
| Nondurables | 0.5940 | 0.1431 | 0.4570 | 0.1821 |
| Services | 2.5510 | 0.6146 | 0.9390 | 0.3741 |

Annex Table A-1

Canadian input shares of U.S. input costs -- by industry

| | consuming U.S. industry | | | | |
|-----------------------------|-------------------------|---------------|---------------|---------------|---------------|
| | agriculture & fisheries | forestry | mining | utilities | construction |
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0030 | 0.0011 | 0.0000 | 0.0000 | 0.0003 |
| forestry | 0.0000 | 0.0010 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0001 | 0.0000 | 0.0043 | 0.0040 | 0.0002 |
| utilities | 0.0000 | 0.0000 | 0.0005 | 0.0022 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 0.0070 |
| iron & steel | 0.0000 | 0.0000 | 0.0008 | 0.0000 | 0.0004 |
| non-ferrous metals | 0.0000 | 0.0000 | 0.0001 | 0.0003 | 0.0011 |
| fabricated metals | 0.0002 | 0.0000 | 0.0009 | 0.0004 | 0.0033 |
| motor vehicles | 0.0001 | 0.0006 | 0.0004 | 0.0023 | 0.0002 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0006 | 0.0001 |
| electrical machinery | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0002 |
| other machinery & equipment | 0.0016 | 0.0013 | 0.0128 | 0.0027 | 0.0064 |
| non-metallic minerals | 0.0000 | 0.0000 | 0.0005 | 0.0001 | 0.0019 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| processed foods | 0.0017 | 0.0006 | 0.0000 | 0.0000 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0004 | 0.0001 | 0.0001 | 0.0000 | 0.0001 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0006 | 0.0015 | 0.0003 | 0.0001 | 0.0008 |
| petrochemicals | 0.0002 | 0.0000 | 0.0000 | 0.0007 | 0.0000 |
| chemicals, rubber, plastics | 0.0039 | 0.0003 | 0.0059 | 0.0003 | 0.0005 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0001 |
| business services | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| TOTAL | 0.0120 | 0.0065 | 0.0271 | 0.0139 | 0.0225 |

Canadian input shares of U.S. input costs -- by industry

| <i>imported inputs</i> | consuming U.S. industry | | | | |
|-----------------------------|-------------------------|---------------|--------------------|-------------------|----------------|
| | lumber | iron & steel | non-ferrous metals | fabricated metals | motor vehicles |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| forestry | 0.0004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0018 | 0.0007 | 0.0000 | 0.0001 |
| utilities | 0.0000 | 0.0002 | 0.0003 | 0.0000 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0400 | 0.0002 | 0.0000 | 0.0000 | 0.0031 |
| iron & steel | 0.0005 | 0.0082 | 0.0003 | 0.0064 | 0.0006 |
| non-ferrous metals | 0.0005 | 0.0042 | 0.0478 | 0.0138 | 0.0027 |
| fabricated metals | 0.0022 | 0.0011 | 0.0001 | 0.0033 | 0.0019 |
| motor vehicles | 0.0005 | 0.0000 | 0.0000 | 0.0001 | 0.0382 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| electrical machinery | 0.0000 | 0.0001 | 0.0001 | 0.0002 | 0.0012 |
| other machinery & equipment | 0.0008 | 0.0057 | 0.0076 | 0.0021 | 0.0050 |
| non-metallic minerals | 0.0004 | 0.0006 | 0.0001 | 0.0003 | 0.0003 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| processed foods | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0015 | 0.0000 | 0.0000 | 0.0000 | 0.0010 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0003 | 0.0001 | 0.0000 | 0.0005 | 0.0001 |
| petrochemicals | 0.0001 | 0.0001 | 0.0000 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0009 | 0.0006 | 0.0011 | 0.0015 | 0.0023 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0480 | 0.0230 | 0.0583 | 0.0283 | 0.0565 |

Canadian input shares of U.S. input costs -- by industry

| | consuming U.S. industry | | | | |
|-----------------------------|---------------------------------|-------------------------|-----------------------------------|--------------------------|-------------------|
| | other transport equipment | electrical machinery | other machinery & equipment | non-metallic minerals | other durables |
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0003 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| mining | 0.0000 | 0.0000 | 0.0001 | 0.0038 | 0.0001 |
| utilities | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0007 | 0.0000 | 0.0000 | 0.0002 | 0.0025 |
| iron & steel | 0.0006 | 0.0001 | 0.0017 | 0.0003 | 0.0011 |
| non-ferrous metals | 0.0019 | 0.0026 | 0.0045 | 0.0002 | 0.0115 |
| fabricated metals | 0.0019 | 0.0006 | 0.0027 | 0.0004 | 0.0012 |
| motor vehicles | 0.0038 | 0.0000 | 0.0012 | 0.0002 | 0.0000 |
| other transport equipment | 0.0491 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| electrical machinery | 0.0007 | 0.0131 | 0.0024 | 0.0000 | 0.0007 |
| other machinery & equipment | 0.0064 | 0.0021 | 0.0130 | 0.0013 | 0.0015 |
| non-metallic minerals | 0.0003 | 0.0003 | 0.0006 | 0.0069 | 0.0003 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0015 |
| processed foods | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0002 | 0.0000 | 0.0001 | 0.0001 | 0.0007 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0000 | 0.0003 | 0.0010 | 0.0018 | 0.0013 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| chemicals, rubber, plastics | 0.0010 | 0.0013 | 0.0031 | 0.0034 | 0.0060 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0000 | 0.0001 | 0.0001 | 0.0000 | 0.0001 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0002 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0669 | 0.0206 | 0.0306 | 0.0189 | 0.0289 |

Canadian input shares of U.S. input costs -- by industry

| <i>imported inputs</i> | processed | beverages | textiles | apparel | leather |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|
| | foods | and tobacco | | | |
| agriculture & fisheries | 0.0077 | 0.0023 | 0.0013 | 0.0000 | 0.0000 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| utilities | 0.0003 | 0.0000 | 0.0007 | 0.0000 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| fabricated metals | 0.0002 | 0.0005 | 0.0000 | 0.0000 | 0.0006 |
| motor vehicles | 0.0001 | 0.0001 | 0.0000 | 0.0000 | 0.0000 |
| other transport equipment | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| electrical machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other machinery & equipment | 0.0002 | 0.0004 | 0.0011 | 0.0006 | 0.0001 |
| non-metallic minerals | 0.0001 | 0.0014 | 0.0003 | 0.0000 | 0.0000 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 |
| processed foods | 0.0070 | 0.0008 | 0.0000 | 0.0000 | 0.0069 |
| beverages & tobacco | 0.0001 | 0.0036 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0000 | 0.0000 | 0.0086 | 0.0084 | 0.0028 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0009 | 0.0001 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0009 |
| paper, pulp, & publishing | 0.0015 | 0.0008 | 0.0008 | 0.0005 | 0.0067 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0015 | 0.0013 | 0.0090 | 0.0008 | 0.0056 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0001 | 0.0002 | 0.0000 | 0.0001 | 0.0001 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0189 | 0.0116 | 0.0222 | 0.0120 | 0.0238 |

Canadian input shares of U.S. input costs -- by industry

| | paper, pulp, & publishing | petro- chemicals | chemicals, rubber, plastics | trade | transport |
|-----------------------------|------------------------------|---------------------|-----------------------------------|---------------|---------------|
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0002 | 0.0001 | 0.0000 |
| forestry | 0.0001 | 0.0000 | 0.0005 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.1172 | 0.0022 | 0.0000 | 0.0003 |
| utilities | 0.0001 | 0.0002 | 0.0002 | 0.0001 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0015 | 0.0000 | 0.0001 | 0.0001 | 0.0001 |
| iron & steel | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0001 | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| fabricated metals | 0.0002 | 0.0000 | 0.0004 | 0.0005 | 0.0002 |
| motor vehicles | 0.0001 | 0.0000 | 0.0000 | 0.0048 | 0.0005 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0023 |
| electrical machinery | 0.0000 | 0.0002 | 0.0000 | 0.0004 | 0.0001 |
| other machinery & equipment | 0.0017 | 0.0003 | 0.0008 | 0.0014 | 0.0010 |
| non-metallic minerals | 0.0000 | 0.0001 | 0.0003 | 0.0001 | 0.0001 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| processed foods | 0.0002 | 0.0000 | 0.0006 | 0.0003 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0001 | 0.0000 | 0.0003 | 0.0002 | 0.0000 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0480 | 0.0001 | 0.0023 | 0.0014 | 0.0001 |
| petrochemicals | 0.0000 | 0.0024 | 0.0009 | 0.0000 | 0.0025 |
| chemicals, rubber, plastics | 0.0026 | 0.0004 | 0.0194 | 0.0007 | 0.0006 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0016 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0001 | 0.0000 | 0.0001 | 0.0004 | 0.0002 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0002 |
| TOTAL | 0.0549 | 0.1210 | 0.0286 | 0.0108 | 0.0099 |

Canadian input shares of U.S. input costs -- by industry

| <i>Imported inputs</i> | information | finance & insurance | business services | consumer services | real estate | other services |
|-----------------------------|---------------|---------------------|-------------------|-------------------|---------------|----------------|
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0012 | 0.0004 | 0.0000 | 0.0001 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| utilities | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0001 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| fabricated metals | 0.0001 | 0.0001 | 0.0001 | 0.0000 | 0.0001 | 0.0002 |
| motor vehicles | 0.0000 | 0.0001 | 0.0003 | 0.0008 | 0.0000 | 0.0006 |
| other transport equipment | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0014 |
| electrical machinery | 0.0019 | 0.0001 | 0.0023 | 0.0000 | 0.0000 | 0.0002 |
| other machinery & equipment | 0.0009 | 0.0004 | 0.0016 | 0.0004 | 0.0001 | 0.0017 |
| non-metallic minerals | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0000 | 0.0001 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| processed foods | 0.0000 | 0.0000 | 0.0000 | 0.0016 | 0.0000 | 0.0005 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0003 | 0.0000 | 0.0000 |
| textiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0005 | 0.0008 | 0.0016 | 0.0002 | 0.0000 | 0.0014 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0001 | 0.0006 | 0.0006 | 0.0004 | 0.0002 | 0.0028 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0012 | 0.0000 | 0.0001 |
| information | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0001 | 0.0001 | 0.0000 | 0.0000 | 0.0002 | 0.0000 |
| business services | 0.0002 | 0.0004 | 0.0007 | 0.0001 | 0.0000 | 0.0003 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0002 | 0.0000 | 0.0000 | 0.0005 | 0.0000 | 0.0001 |
| TOTAL | 0.0042 | 0.0027 | 0.0090 | 0.0066 | 0.0006 | 0.0100 |

Annex Table A-2

Canadian input shares of U.S. producer price -- by industry

| | consuming U.S. industry | | | | |
|-----------------------------|-------------------------|----------|--------|-----------|--------------|
| | agriculture & fisheries | forestry | mining | utilities | construction |
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0016 | 0.0004 | 0.0000 | 0.0000 | 0.0001 |
| forestry | 0.0000 | 0.0003 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0017 | 0.0017 | 0.0001 |
| utilities | 0.0000 | 0.0000 | 0.0002 | 0.0009 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0031 |
| iron & steel | 0.0000 | 0.0000 | 0.0003 | 0.0000 | 0.0002 |
| non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0005 |
| fabricated metals | 0.0001 | 0.0000 | 0.0004 | 0.0002 | 0.0014 |
| motor vehicles | 0.0001 | 0.0002 | 0.0002 | 0.0010 | 0.0001 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 |
| electrical machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| other machinery & equipment | 0.0009 | 0.0004 | 0.0051 | 0.0011 | 0.0028 |
| non-metallic minerals | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0008 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| processed foods | 0.0009 | 0.0002 | 0.0000 | 0.0000 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0003 | 0.0005 | 0.0001 | 0.0000 | 0.0004 |
| petrochemicals | 0.0001 | 0.0000 | 0.0000 | 0.0003 | 0.0000 |
| chemicals, rubber, plastics | 0.0021 | 0.0001 | 0.0024 | 0.0001 | 0.0002 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0065 | 0.0022 | 0.0109 | 0.0059 | 0.0100 |

Canadian input shares of U.S. producer price -- by industry

| <i>imported inputs</i> | consuming U.S. industry | | | | |
|-----------------------------|-------------------------|---------------|--------------------|-------------------|----------------|
| | lumber | iron & steel | non-ferrous metals | fabricated metals | motor vehicles |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| forestry | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0012 | 0.0005 | 0.0000 | 0.0001 |
| utilities | 0.0000 | 0.0001 | 0.0002 | 0.0000 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0218 | 0.0001 | 0.0000 | 0.0000 | 0.0023 |
| iron & steel | 0.0003 | 0.0053 | 0.0002 | 0.0033 | 0.0004 |
| non-ferrous metals | 0.0003 | 0.0027 | 0.0332 | 0.0071 | 0.0020 |
| fabricated metals | 0.0012 | 0.0007 | 0.0001 | 0.0017 | 0.0014 |
| motor vehicles | 0.0003 | 0.0000 | 0.0000 | 0.0000 | 0.0281 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| electrical machinery | 0.0000 | 0.0001 | 0.0000 | 0.0001 | 0.0008 |
| other machinery & equipment | 0.0004 | 0.0037 | 0.0053 | 0.0011 | 0.0037 |
| non-metallic minerals | 0.0002 | 0.0004 | 0.0001 | 0.0001 | 0.0002 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| processed foods | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0008 | 0.0000 | 0.0000 | 0.0000 | 0.0007 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0002 | 0.0000 | 0.0000 | 0.0003 | 0.0001 |
| petrochemicals | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0005 | 0.0004 | 0.0008 | 0.0008 | 0.0017 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0262 | 0.0147 | 0.0404 | 0.0146 | 0.0417 |

Canadian input shares of U.S. producer price -- by industry

| | consuming U.S. industry | | | | |
|-----------------------------|---------------------------------|-------------------------|-----------------------------------|--------------------------|-------------------|
| | other transport equipment | electrical machinery | other machinery & equipment | non-metallic minerals | other durables |
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0000 | 0.0019 | 0.0000 |
| utilities | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0004 | 0.0000 | 0.0000 | 0.0001 | 0.0014 |
| iron & steel | 0.0003 | 0.0001 | 0.0008 | 0.0002 | 0.0006 |
| non-ferrous metals | 0.0010 | 0.0023 | 0.0021 | 0.0001 | 0.0064 |
| fabricated metals | 0.0010 | 0.0005 | 0.0013 | 0.0002 | 0.0007 |
| motor vehicles | 0.0020 | 0.0000 | 0.0006 | 0.0001 | 0.0000 |
| other transport equipment | 0.0263 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| electrical machinery | 0.0004 | 0.0114 | 0.0012 | 0.0000 | 0.0004 |
| other machinery & equipment | 0.0034 | 0.0018 | 0.0062 | 0.0006 | 0.0009 |
| non-metallic minerals | 0.0002 | 0.0003 | 0.0003 | 0.0034 | 0.0002 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0008 |
| processed foods | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0001 | 0.0000 | 0.0000 | 0.0001 | 0.0004 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0000 | 0.0002 | 0.0005 | 0.0009 | 0.0007 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| chemicals, rubber, plastics | 0.0005 | 0.0011 | 0.0015 | 0.0017 | 0.0033 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0002 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0358 | 0.0180 | 0.0146 | 0.0094 | 0.0159 |

Canadian input shares of U.S. producer price -- by industry

| | processed foods | beverages and tobacco | textiles | apparel | leather |
|-----------------------------|--------------------|--------------------------|---------------|---------------|---------------|
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0051 | 0.0015 | 0.0007 | 0.0000 | 0.0000 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| utilities | 0.0002 | 0.0000 | 0.0004 | 0.0000 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| fabricated metals | 0.0001 | 0.0004 | 0.0000 | 0.0000 | 0.0003 |
| motor vehicles | 0.0001 | 0.0001 | 0.0000 | 0.0000 | 0.0000 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| electrical machinery | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other machinery & equipment | 0.0002 | 0.0002 | 0.0007 | 0.0004 | 0.0000 |
| non-metallic minerals | 0.0001 | 0.0010 | 0.0002 | 0.0000 | 0.0000 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| processed foods | 0.0046 | 0.0005 | 0.0000 | 0.0000 | 0.0039 |
| beverages & tobacco | 0.0001 | 0.0024 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0000 | 0.0000 | 0.0051 | 0.0060 | 0.0016 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0006 | 0.0001 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0005 |
| paper, pulp, & publishing | 0.0010 | 0.0005 | 0.0005 | 0.0003 | 0.0038 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0010 | 0.0009 | 0.0053 | 0.0006 | 0.0032 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0001 | 0.0002 | 0.0000 | 0.0000 | 0.0000 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0125 | 0.0077 | 0.0132 | 0.0085 | 0.0136 |

Canadian input shares of U.S. producer price -- by industry

| | paper, pulp, & publishing | petro- chemicals | chemicals, rubber, plastics | trade | transport |
|-----------------------------|------------------------------|---------------------|-----------------------------------|---------------|---------------|
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| forestry | 0.0001 | 0.0000 | 0.0003 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.1124 | 0.0013 | 0.0000 | 0.0001 |
| utilities | 0.0001 | 0.0001 | 0.0001 | 0.0000 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0009 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| fabricated metals | 0.0001 | 0.0000 | 0.0002 | 0.0002 | 0.0001 |
| motor vehicles | 0.0000 | 0.0000 | 0.0000 | 0.0018 | 0.0003 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0012 |
| electrical machinery | 0.0000 | 0.0002 | 0.0000 | 0.0001 | 0.0000 |
| other machinery & equipment | 0.0010 | 0.0003 | 0.0005 | 0.0005 | 0.0005 |
| non-metallic minerals | 0.0000 | 0.0001 | 0.0002 | 0.0000 | 0.0000 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| processed foods | 0.0001 | 0.0000 | 0.0003 | 0.0001 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0000 | 0.0000 | 0.0002 | 0.0001 | 0.0000 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0292 | 0.0001 | 0.0013 | 0.0005 | 0.0000 |
| petrochemicals | 0.0000 | 0.0023 | 0.0005 | 0.0000 | 0.0013 |
| chemicals, rubber, plastics | 0.0016 | 0.0004 | 0.0108 | 0.0003 | 0.0003 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0008 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0001 | 0.0002 | 0.0001 |
| business services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| TOTAL | 0.0334 | 0.1160 | 0.0160 | 0.0041 | 0.0051 |

Canadian input shares of U.S. producer price -- by industry

| | information | finance & insurance | business services | consumer services | real estate | other services |
|-----------------------------|---------------|---------------------|-------------------|-------------------|---------------|----------------|
| <i>imported inputs</i> | | | | | | |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0003 | 0.0002 | 0.0000 | 0.0000 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| utilities | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| fabricated metals | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| motor vehicles | 0.0000 | 0.0000 | 0.0001 | 0.0005 | 0.0000 | 0.0002 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0005 |
| electrical machinery | 0.0009 | 0.0000 | 0.0005 | 0.0000 | 0.0000 | 0.0001 |
| other machinery & equipment | 0.0004 | 0.0001 | 0.0004 | 0.0002 | 0.0000 | 0.0005 |
| non-metallic minerals | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| other durables | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| processed foods | 0.0000 | 0.0000 | 0.0000 | 0.0009 | 0.0000 | 0.0002 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 |
| textiles | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0002 | 0.0003 | 0.0004 | 0.0001 | 0.0000 | 0.0004 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0000 | 0.0002 | 0.0002 | 0.0002 | 0.0000 | 0.0009 |
| trade | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| transport | 0.0000 | 0.0000 | 0.0000 | 0.0007 | 0.0000 | 0.0000 |
| information | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| finance & insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| business services | 0.0001 | 0.0002 | 0.0002 | 0.0001 | 0.0000 | 0.0001 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0001 | 0.0000 | 0.0000 | 0.0003 | 0.0000 | 0.0000 |
| TOTAL | 0.0020 | 0.0010 | 0.0021 | 0.0039 | 0.0001 | 0.0032 |

Annex Table A-3

U.S. input shares of Canadian input costs -- by industry

| <i>imported inputs</i> | consuming Canadian industry | | | | |
|-----------------------------|-----------------------------|---------------|---------------|---------------|---------------|
| | agriculture & fisheries | forestry | mining | utilities | construction |
| | 0.0207 | 0.0005 | 0.0000 | 0.0001 | 0.0011 |
| agriculture & fisheries | 0.0207 | 0.0005 | 0.0000 | 0.0001 | 0.0011 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0004 | 0.0000 | 0.0022 | 0.0358 | 0.0004 |
| utilities | 0.0006 | 0.0000 | 0.0042 | 0.0030 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0005 | 0.0000 | 0.0000 | 0.0000 | 0.0211 |
| iron & steel | 0.0001 | 0.0003 | 0.0031 | 0.0001 | 0.0077 |
| non-ferrous metals | 0.0000 | 0.0002 | 0.0002 | 0.0000 | 0.0009 |
| fabricated metals | 0.0053 | 0.0124 | 0.0047 | 0.0014 | 0.0343 |
| motor vehicles | 0.0017 | 0.0049 | 0.0055 | 0.0009 | 0.0009 |
| other transport equipment | 0.0011 | 0.0007 | 0.0012 | 0.0001 | 0.0002 |
| electrical machinery | 0.0007 | 0.0100 | 0.0069 | 0.0040 | 0.0023 |
| other machinery & equipment | 0.0183 | 0.0157 | 0.0392 | 0.0069 | 0.0343 |
| non-metallic minerals | 0.0008 | 0.0011 | 0.0010 | 0.0002 | 0.0231 |
| other durables | 0.0011 | 0.0020 | 0.0015 | 0.0005 | 0.0008 |
| processed foods | 0.0067 | 0.0022 | 0.0003 | 0.0005 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0019 | 0.0011 | 0.0003 | 0.0001 | 0.0033 |
| apparel | 0.0000 | 0.0001 | 0.0001 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0008 | 0.0013 | 0.0021 | 0.0035 | 0.0036 |
| petrochemicals | 0.0007 | 0.0004 | 0.0019 | 0.0136 | 0.0001 |
| chemicals, rubber, plastics | 0.0474 | 0.0158 | 0.0200 | 0.0034 | 0.0235 |
| trade | 0.0002 | 0.0003 | 0.0005 | 0.0003 | 0.0005 |
| transport | 0.0003 | 0.0016 | 0.0006 | 0.0006 | 0.0001 |
| information | 0.0002 | 0.0004 | 0.0016 | 0.0003 | 0.0003 |
| finance & insurance | 0.0006 | 0.0004 | 0.0039 | 0.0013 | 0.0013 |
| business services | 0.0002 | 0.0007 | 0.0043 | 0.0026 | 0.0051 |
| consumer services | 0.0002 | 0.0007 | 0.0006 | 0.0001 | 0.0039 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.1106 | 0.0728 | 0.1060 | 0.0795 | 0.1687 |

U.S. input shares of Canadian input costs -- by industry

| <i>imported inputs</i> | consuming Canadian industry | | | | |
|-----------------------------|-----------------------------|---------------|--------------------|-------------------|----------------|
| | lumber | iron & steel | non-ferrous metals | fabricated metals | motor vehicles |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| forestry | 0.0260 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0096 | 0.0401 | 0.0065 | 0.0001 |
| utilities | 0.0000 | 0.0063 | 0.0394 | 0.0001 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0603 | 0.0004 | 0.0002 | 0.0015 | 0.0006 |
| iron & steel | 0.0029 | 0.0812 | 0.0061 | 0.0572 | 0.0076 |
| non-ferrous metals | 0.0015 | 0.0076 | 0.0655 | 0.0424 | 0.0088 |
| fabricated metals | 0.0137 | 0.0342 | 0.0026 | 0.0701 | 0.0137 |
| motor vehicles | 0.0015 | 0.0033 | 0.0011 | 0.0071 | 0.3187 |
| other transport equipment | 0.0002 | 0.0002 | 0.0001 | 0.0005 | 0.0024 |
| electrical machinery | 0.0019 | 0.0035 | 0.0013 | 0.0022 | 0.0042 |
| other machinery & equipment | 0.0060 | 0.0143 | 0.0067 | 0.0075 | 0.0309 |
| non-metallic minerals | 0.0065 | 0.0209 | 0.0029 | 0.0070 | 0.0065 |
| other durables | 0.0023 | 0.0016 | 0.0005 | 0.0008 | 0.0009 |
| processed foods | 0.0003 | 0.0003 | 0.0001 | 0.0002 | 0.0001 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0054 | 0.0003 | 0.0001 | 0.0002 | 0.0024 |
| apparel | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0059 | 0.0017 | 0.0006 | 0.0026 | 0.0010 |
| petrochemicals | 0.0001 | 0.0033 | 0.0007 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0274 | 0.0146 | 0.0094 | 0.0186 | 0.0308 |
| trade | 0.0002 | 0.0004 | 0.0003 | 0.0005 | 0.0004 |
| transport | 0.0010 | 0.0004 | 0.0002 | 0.0005 | 0.0000 |
| information | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0004 |
| finance & insurance | 0.0004 | 0.0003 | 0.0001 | 0.0003 | 0.0005 |
| business services | 0.0007 | 0.0010 | 0.0005 | 0.0011 | 0.0023 |
| consumer services | 0.0000 | 0.0004 | 0.0000 | 0.0003 | 0.0007 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.1643 | 0.2058 | 0.1786 | 0.2274 | 0.4332 |

U.S. input shares of Canadian input costs -- by industry

| | consuming Canadian industry | | | | |
|-----------------------------|---------------------------------|-------------------------|--|---------------|-------------------|
| | other transport equipment | electrical machinery | other machinery & non-metallic equipment | minerals | other durables |
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0004 | 0.0000 | 0.0001 | 0.0000 | 0.0061 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0001 | 0.0002 | 0.0160 | 0.0123 |
| utilities | 0.0000 | 0.0001 | 0.0002 | 0.0018 | 0.0005 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0008 | 0.0007 | 0.0005 | 0.0011 | 0.0094 |
| iron & steel | 0.0161 | 0.0046 | 0.0194 | 0.0039 | 0.0065 |
| non-ferrous metals | 0.0114 | 0.0117 | 0.0220 | 0.0023 | 0.0347 |
| fabricated metals | 0.0100 | 0.0090 | 0.0300 | 0.0082 | 0.0095 |
| motor vehicles | 0.0148 | 0.0065 | 0.0056 | 0.0026 | 0.0060 |
| other transport equipment | 0.2148 | 0.0001 | 0.0010 | 0.0002 | 0.0034 |
| electrical machinery | 0.0142 | 0.1782 | 0.0267 | 0.0041 | 0.0133 |
| other machinery & equipment | 0.0425 | 0.1406 | 0.2344 | 0.0088 | 0.0232 |
| non-metallic minerals | 0.0121 | 0.0023 | 0.0075 | 0.0799 | 0.0017 |
| other durables | 0.0009 | 0.0007 | 0.0010 | 0.0025 | 0.0126 |
| processed foods | 0.0005 | 0.0001 | 0.0001 | 0.0003 | 0.0006 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0012 | 0.0003 | 0.0004 | 0.0005 | 0.0116 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| leather | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0003 |
| paper, pulp, & publishing | 0.0013 | 0.0028 | 0.0037 | 0.0130 | 0.0209 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0020 | 0.0002 |
| chemicals, rubber, plastics | 0.0290 | 0.0082 | 0.0240 | 0.0393 | 0.0982 |
| trade | 0.0002 | 0.0004 | 0.0006 | 0.0005 | 0.0007 |
| transport | 0.0001 | 0.0006 | 0.0004 | 0.0014 | 0.0004 |
| information | 0.0006 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| finance & insurance | 0.0009 | 0.0003 | 0.0004 | 0.0006 | 0.0002 |
| business services | 0.0026 | 0.0024 | 0.0015 | 0.0009 | 0.0008 |
| consumer services | 0.0004 | 0.0001 | 0.0004 | 0.0005 | 0.0020 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.3749 | 0.3698 | 0.3804 | 0.1906 | 0.2755 |

U.S. input shares of Canadian input costs -- by industry

| <i>imported inputs</i> | processed foods | beverages and tobacco | textiles | apparel | leather |
|-----------------------------|--------------------|--------------------------|---------------|---------------|---------------|
| agriculture & fisheries | 0.0558 | 0.0058 | 0.0139 | 0.0307 | 0.0951 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0001 | 0.0000 | 0.0002 | 0.0000 | 0.0000 |
| utilities | 0.0000 | 0.0000 | 0.0002 | 0.0001 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0000 | 0.0000 | 0.0004 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0001 | 0.0001 | 0.0006 | 0.0000 | 0.0000 |
| fabricated metals | 0.0037 | 0.0176 | 0.0018 | 0.0006 | 0.0033 |
| motor vehicles | 0.0006 | 0.0006 | 0.0010 | 0.0004 | 0.0010 |
| other transport equipment | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| electrical machinery | 0.0003 | 0.0006 | 0.0004 | 0.0002 | 0.0002 |
| other machinery & equipment | 0.0030 | 0.0039 | 0.0046 | 0.0020 | 0.0021 |
| non-metallic minerals | 0.0019 | 0.0194 | 0.0009 | 0.0003 | 0.0000 |
| other durables | 0.0004 | 0.0006 | 0.0023 | 0.0033 | 0.0055 |
| processed foods | 0.0509 | 0.0219 | 0.0049 | 0.0000 | 0.0001 |
| beverages & tobacco | 0.0000 | 0.0038 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0002 | 0.0017 | 0.1337 | 0.1611 | 0.0106 |
| apparel | 0.0000 | 0.0000 | 0.0002 | 0.0009 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0021 | 0.0163 |
| paper, pulp, & publishing | 0.0079 | 0.0161 | 0.0068 | 0.0030 | 0.0053 |
| petrochemicals | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0165 | 0.0191 | 0.1101 | 0.0064 | 0.1056 |
| trade | 0.0003 | 0.0005 | 0.0005 | 0.0006 | 0.0007 |
| transport | 0.0003 | 0.0002 | 0.0003 | 0.0003 | 0.0001 |
| information | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| finance & insurance | 0.0004 | 0.0008 | 0.0006 | 0.0005 | 0.0005 |
| business services | 0.0008 | 0.0023 | 0.0006 | 0.0013 | 0.0007 |
| consumer services | 0.0002 | 0.0002 | 0.0006 | 0.0002 | 0.0006 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.1435 | 0.1154 | 0.2850 | 0.2140 | 0.2480 |

U.S. input shares of Canadian input costs -- by industry

| <i>imported inputs</i> | paper, pulp, & publishing | petro- chemicals | chemicals, | trade | transport |
|-----------------------------|------------------------------|---------------------|---------------------|---------------|---------------|
| | | | rubber, plastics | | |
| agriculture & fisheries | 0.0004 | 0.0000 | 0.0035 | 0.0045 | 0.0019 |
| forestry | 0.0043 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0012 | 0.1504 | 0.0035 | 0.0001 | 0.0006 |
| utilities | 0.0022 | 0.0013 | 0.0011 | 0.0004 | 0.0002 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0017 | 0.0000 | 0.0003 | 0.0004 | 0.0003 |
| iron & steel | 0.0001 | 0.0000 | 0.0006 | 0.0001 | 0.0005 |
| non-ferrous metals | 0.0020 | 0.0000 | 0.0032 | 0.0000 | 0.0003 |
| fabricated metals | 0.0027 | 0.0006 | 0.0056 | 0.0010 | 0.0031 |
| motor vehicles | 0.0012 | 0.0002 | 0.0010 | 0.0046 | 0.0080 |
| other transport equipment | 0.0002 | 0.0000 | 0.0001 | 0.0011 | 0.0033 |
| electrical machinery | 0.0035 | 0.0004 | 0.0011 | 0.0009 | 0.0025 |
| other machinery & equipment | 0.0101 | 0.0008 | 0.0055 | 0.0029 | 0.0071 |
| non-metallic minerals | 0.0005 | 0.0010 | 0.0024 | 0.0017 | 0.0006 |
| other durables | 0.0010 | 0.0002 | 0.0012 | 0.0007 | 0.0008 |
| processed foods | 0.0007 | 0.0001 | 0.0070 | 0.0184 | 0.0002 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 |
| textiles | 0.0016 | 0.0000 | 0.0028 | 0.0011 | 0.0008 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0939 | 0.0013 | 0.0062 | 0.0179 | 0.0050 |
| petrochemicals | 0.0019 | 0.0178 | 0.0056 | 0.0004 | 0.0120 |
| chemicals, rubber, plastics | 0.0329 | 0.0143 | 0.2237 | 0.0088 | 0.0106 |
| trade | 0.0006 | 0.0004 | 0.0006 | 0.0004 | 0.0012 |
| transport | 0.0004 | 0.0001 | 0.0005 | 0.0011 | 0.0057 |
| information | 0.0001 | 0.0001 | 0.0001 | 0.0004 | 0.0003 |
| finance & insurance | 0.0002 | 0.0004 | 0.0005 | 0.0003 | 0.0007 |
| business services | 0.0012 | 0.0005 | 0.0018 | 0.0021 | 0.0086 |
| consumer services | 0.0001 | 0.0001 | 0.0012 | 0.0001 | 0.0007 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.1652 | 0.1898 | 0.2791 | 0.0696 | 0.0751 |

U.S. input shares of Canadian input costs -- by industry

| <i>imported inputs</i> | information | finance & insurance | business services | consumer services | real estate | other services |
|-----------------------------|-------------|---------------------|-------------------|-------------------|-------------|----------------|
| agriculture & fisheries | 0.0000 | 0.0001 | 0.0000 | 0.0005 | 0.0000 | 0.0008 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0001 | 0.0000 | 0.0000 | 0.0003 | 0.0000 | 0.0006 |
| utilities | 0.0003 | 0.0002 | 0.0002 | 0.0020 | 0.0000 | 0.0005 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0008 | 0.0000 | 0.0007 | 0.0004 | 0.0000 | 0.0000 |
| iron & steel | 0.0001 | 0.0001 | 0.0003 | 0.0017 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0001 | 0.0001 | 0.0002 | 0.0000 | 0.0000 | 0.0002 |
| fabricated metals | 0.0009 | 0.0001 | 0.0019 | 0.0025 | 0.0000 | 0.0010 |
| motor vehicles | 0.0011 | 0.0001 | 0.0012 | 0.0009 | 0.0000 | 0.0002 |
| other transport equipment | 0.0003 | 0.0000 | 0.0004 | 0.0001 | 0.0000 | 0.0003 |
| electrical machinery | 0.0037 | 0.0015 | 0.0051 | 0.0055 | 0.0000 | 0.0053 |
| other machinery & equipment | 0.0032 | 0.0008 | 0.0052 | 0.0101 | 0.0000 | 0.0394 |
| non-metallic minerals | 0.0000 | 0.0000 | 0.0003 | 0.0013 | 0.0000 | 0.0005 |
| other durables | 0.0002 | 0.0004 | 0.0005 | 0.0017 | 0.0000 | 0.0004 |
| processed foods | 0.0000 | 0.0002 | 0.0002 | 0.0016 | 0.0000 | 0.0031 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0001 |
| textiles | 0.0001 | 0.0002 | 0.0001 | 0.0010 | 0.0000 | 0.0016 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0027 | 0.0084 | 0.0108 | 0.0146 | 0.0000 | 0.0137 |
| petrochemicals | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0000 | 0.0002 |
| chemicals, rubber, plastics | 0.0020 | 0.0013 | 0.0076 | 0.0083 | 0.0000 | 0.0095 |
| trade | 0.0007 | 0.0003 | 0.0008 | 0.0028 | 0.0000 | 0.0006 |
| transport | 0.0006 | 0.0010 | 0.0008 | 0.0033 | 0.0000 | 0.0046 |
| information | 0.0063 | 0.0005 | 0.0003 | 0.0005 | 0.0006 | 0.0009 |
| finance & insurance | 0.0005 | 0.0346 | 0.0003 | 0.0001 | 0.0051 | 0.0005 |
| business services | 0.0019 | 0.0033 | 0.0181 | 0.0007 | 0.0040 | 0.0050 |
| consumer services | 0.0023 | 0.0014 | 0.0003 | 0.0056 | 0.0000 | 0.0013 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0281 | 0.0546 | 0.0556 | 0.0661 | 0.0099 | 0.0903 |

Annex Table A-4

U.S. input shares of Canadian producer price -- by industry

| | consuming Canadian industry | | | | |
|-----------------------------|-----------------------------|---------------|---------------|---------------|---------------|
| | agriculture & fisheries | forestry | mining | utilities | construction |
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0096 | 0.0003 | 0.0000 | 0.0000 | 0.0005 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0002 | 0.0000 | 0.0013 | 0.0099 | 0.0002 |
| utilities | 0.0003 | 0.0000 | 0.0024 | 0.0008 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0002 | 0.0000 | 0.0000 | 0.0000 | 0.0103 |
| iron & steel | 0.0001 | 0.0002 | 0.0017 | 0.0000 | 0.0038 |
| non-ferrous metals | 0.0000 | 0.0001 | 0.0001 | 0.0000 | 0.0004 |
| fabricated metals | 0.0024 | 0.0066 | 0.0027 | 0.0004 | 0.0168 |
| motor vehicles | 0.0008 | 0.0026 | 0.0031 | 0.0003 | 0.0004 |
| other transport equipment | 0.0005 | 0.0004 | 0.0007 | 0.0000 | 0.0001 |
| electrical machinery | 0.0003 | 0.0053 | 0.0039 | 0.0011 | 0.0011 |
| other machinery & equipment | 0.0085 | 0.0083 | 0.0221 | 0.0019 | 0.0168 |
| non-metallic minerals | 0.0004 | 0.0006 | 0.0005 | 0.0001 | 0.0113 |
| other durables | 0.0005 | 0.0011 | 0.0008 | 0.0001 | 0.0004 |
| processed foods | 0.0031 | 0.0012 | 0.0002 | 0.0001 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0009 | 0.0006 | 0.0001 | 0.0000 | 0.0016 |
| apparel | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0004 | 0.0007 | 0.0012 | 0.0010 | 0.0018 |
| petrochemicals | 0.0003 | 0.0002 | 0.0011 | 0.0038 | 0.0000 |
| chemicals, rubber, plastics | 0.0220 | 0.0083 | 0.0113 | 0.0009 | 0.0115 |
| trade | 0.0001 | 0.0001 | 0.0003 | 0.0001 | 0.0002 |
| transport | 0.0001 | 0.0008 | 0.0003 | 0.0002 | 0.0000 |
| information | 0.0001 | 0.0002 | 0.0009 | 0.0001 | 0.0001 |
| finance & insurance | 0.0003 | 0.0002 | 0.0022 | 0.0004 | 0.0007 |
| business services | 0.0001 | 0.0004 | 0.0024 | 0.0007 | 0.0025 |
| consumer services | 0.0001 | 0.0003 | 0.0004 | 0.0000 | 0.0019 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0512 | 0.0384 | 0.0598 | 0.0220 | 0.0827 |

U.S. input shares of Canadian producer price -- by industry

| <i>imported inputs</i> | consuming Canadian industry | | | | |
|-----------------------------|-----------------------------|---------------|--------------------|-------------------|----------------|
| | lumber | iron & steel | non-ferrous metals | fabricated metals | motor vehicles |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| forestry | 0.0154 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0055 | 0.0250 | 0.0033 | 0.0000 |
| utilities | 0.0000 | 0.0037 | 0.0246 | 0.0001 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0357 | 0.0002 | 0.0001 | 0.0007 | 0.0004 |
| iron & steel | 0.0017 | 0.0470 | 0.0038 | 0.0288 | 0.0055 |
| non-ferrous metals | 0.0009 | 0.0044 | 0.0408 | 0.0213 | 0.0063 |
| fabricated metals | 0.0081 | 0.0198 | 0.0016 | 0.0354 | 0.0098 |
| motor vehicles | 0.0009 | 0.0019 | 0.0007 | 0.0036 | 0.2280 |
| other transport equipment | 0.0001 | 0.0001 | 0.0001 | 0.0003 | 0.0017 |
| electrical machinery | 0.0011 | 0.0020 | 0.0008 | 0.0011 | 0.0030 |
| other machinery & equipment | 0.0035 | 0.0083 | 0.0042 | 0.0038 | 0.0221 |
| non-metallic minerals | 0.0038 | 0.0121 | 0.0018 | 0.0035 | 0.0047 |
| other durables | 0.0013 | 0.0010 | 0.0003 | 0.0004 | 0.0006 |
| processed foods | 0.0002 | 0.0002 | 0.0001 | 0.0001 | 0.0001 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0032 | 0.0002 | 0.0000 | 0.0001 | 0.0017 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0035 | 0.0010 | 0.0004 | 0.0013 | 0.0007 |
| petrochemicals | 0.0001 | 0.0019 | 0.0005 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0162 | 0.0084 | 0.0058 | 0.0094 | 0.0220 |
| trade | 0.0001 | 0.0002 | 0.0002 | 0.0003 | 0.0003 |
| transport | 0.0006 | 0.0002 | 0.0001 | 0.0002 | 0.0000 |
| information | 0.0001 | 0.0000 | 0.0001 | 0.0001 | 0.0003 |
| finance & insurance | 0.0002 | 0.0002 | 0.0001 | 0.0001 | 0.0004 |
| business services | 0.0004 | 0.0006 | 0.0003 | 0.0006 | 0.0017 |
| consumer services | 0.0000 | 0.0002 | 0.0000 | 0.0001 | 0.0005 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0974 | 0.1192 | 0.1113 | 0.1146 | 0.3099 |

U.S. input shares of Canadian producer price -- by industry

| | consuming Canadian industry | | | | |
|-----------------------------|---------------------------------|-------------------------|-----------------------------------|--------------------------|-------------------|
| | other transport equipment | electrical machinery | other machinery & equipment | non-metallic minerals | other durables |
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0002 | 0.0000 | 0.0001 | 0.0000 | 0.0031 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0001 | 0.0078 | 0.0062 |
| utilities | 0.0000 | 0.0001 | 0.0001 | 0.0009 | 0.0002 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0004 | 0.0004 | 0.0003 | 0.0005 | 0.0047 |
| iron & steel | 0.0094 | 0.0027 | 0.0102 | 0.0019 | 0.0033 |
| non-ferrous metals | 0.0067 | 0.0070 | 0.0116 | 0.0011 | 0.0174 |
| fabricated metals | 0.0059 | 0.0054 | 0.0157 | 0.0040 | 0.0048 |
| motor vehicles | 0.0087 | 0.0039 | 0.0030 | 0.0013 | 0.0030 |
| other transport equipment | 0.1263 | 0.0001 | 0.0005 | 0.0001 | 0.0017 |
| electrical machinery | 0.0083 | 0.1072 | 0.0140 | 0.0020 | 0.0067 |
| other machinery & equipment | 0.0250 | 0.0845 | 0.1231 | 0.0043 | 0.0116 |
| non-metallic minerals | 0.0071 | 0.0014 | 0.0039 | 0.0392 | 0.0009 |
| other durables | 0.0005 | 0.0004 | 0.0005 | 0.0012 | 0.0063 |
| processed foods | 0.0003 | 0.0001 | 0.0001 | 0.0002 | 0.0003 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0007 | 0.0002 | 0.0002 | 0.0003 | 0.0058 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0001 | 0.0000 | 0.0000 | 0.0000 | 0.0001 |
| paper, pulp, & publishing | 0.0008 | 0.0017 | 0.0019 | 0.0064 | 0.0105 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0010 | 0.0001 |
| chemicals, rubber, plastics | 0.0171 | 0.0049 | 0.0126 | 0.0193 | 0.0492 |
| trade | 0.0001 | 0.0002 | 0.0003 | 0.0002 | 0.0004 |
| transport | 0.0001 | 0.0004 | 0.0002 | 0.0007 | 0.0002 |
| information | 0.0003 | 0.0000 | 0.0000 | 0.0001 | 0.0001 |
| finance & insurance | 0.0005 | 0.0002 | 0.0002 | 0.0003 | 0.0001 |
| business services | 0.0015 | 0.0014 | 0.0008 | 0.0004 | 0.0004 |
| consumer services | 0.0002 | 0.0000 | 0.0002 | 0.0003 | 0.0010 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.2204 | 0.2224 | 0.1998 | 0.0935 | 0.1379 |

U.S. input shares of Canadian producer price -- by industry

| <i>imported inputs</i> | processed foods | beverages and tobacco | textiles | apparel | leather |
|-----------------------------|--------------------|--------------------------|---------------|---------------|---------------|
| agriculture & fisheries | 0.0370 | 0.0032 | 0.0079 | 0.0160 | 0.0512 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0001 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| utilities | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0000 | 0.0000 | 0.0002 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0000 | 0.0001 | 0.0003 | 0.0000 | 0.0000 |
| fabricated metals | 0.0025 | 0.0097 | 0.0010 | 0.0003 | 0.0018 |
| motor vehicles | 0.0004 | 0.0004 | 0.0006 | 0.0002 | 0.0006 |
| other transport equipment | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| electrical machinery | 0.0002 | 0.0003 | 0.0002 | 0.0001 | 0.0001 |
| other machinery & equipment | 0.0020 | 0.0021 | 0.0026 | 0.0010 | 0.0011 |
| non-metallic minerals | 0.0013 | 0.0106 | 0.0005 | 0.0001 | 0.0000 |
| other durables | 0.0002 | 0.0003 | 0.0013 | 0.0017 | 0.0029 |
| processed foods | 0.0338 | 0.0120 | 0.0028 | 0.0000 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0021 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0002 | 0.0009 | 0.0759 | 0.0838 | 0.0057 |
| apparel | 0.0000 | 0.0000 | 0.0001 | 0.0005 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0011 | 0.0088 |
| paper, pulp, & publishing | 0.0052 | 0.0088 | 0.0039 | 0.0016 | 0.0028 |
| petrochemicals | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0109 | 0.0105 | 0.0625 | 0.0033 | 0.0568 |
| trade | 0.0002 | 0.0003 | 0.0003 | 0.0003 | 0.0004 |
| transport | 0.0002 | 0.0001 | 0.0002 | 0.0001 | 0.0001 |
| information | 0.0001 | 0.0001 | 0.0001 | 0.0000 | 0.0001 |
| finance & insurance | 0.0002 | 0.0004 | 0.0004 | 0.0002 | 0.0003 |
| business services | 0.0005 | 0.0013 | 0.0004 | 0.0007 | 0.0004 |
| consumer services | 0.0001 | 0.0001 | 0.0003 | 0.0001 | 0.0003 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0953 | 0.0634 | 0.1619 | 0.1113 | 0.1334 |

U.S. input shares of Canadian producer price -- by industry

| | paper, pulp, & publishing | petro- chemicals | chemicals, rubber, plastics | trade | transport |
|-----------------------------|------------------------------|---------------------|-----------------------------------|--------|-----------|
| <i>imported inputs</i> | | | | | |
| agriculture & fisheries | 0.0002 | 0.0000 | 0.0020 | 0.0015 | 0.0005 |
| forestry | 0.0023 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0007 | 0.1395 | 0.0020 | 0.0000 | 0.0002 |
| utilities | 0.0012 | 0.0012 | 0.0007 | 0.0001 | 0.0001 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0009 | 0.0000 | 0.0002 | 0.0001 | 0.0001 |
| iron & steel | 0.0001 | 0.0000 | 0.0003 | 0.0000 | 0.0001 |
| non-ferrous metals | 0.0011 | 0.0000 | 0.0018 | 0.0000 | 0.0001 |
| fabricated metals | 0.0014 | 0.0005 | 0.0032 | 0.0003 | 0.0008 |
| motor vehicles | 0.0007 | 0.0002 | 0.0006 | 0.0016 | 0.0022 |
| other transport equipment | 0.0001 | 0.0000 | 0.0000 | 0.0004 | 0.0009 |
| electrical machinery | 0.0019 | 0.0003 | 0.0006 | 0.0003 | 0.0007 |
| other machinery & equipment | 0.0054 | 0.0008 | 0.0032 | 0.0010 | 0.0019 |
| non-metallic minerals | 0.0003 | 0.0009 | 0.0014 | 0.0006 | 0.0002 |
| other durables | 0.0005 | 0.0002 | 0.0007 | 0.0003 | 0.0002 |
| processed foods | 0.0004 | 0.0001 | 0.0040 | 0.0064 | 0.0000 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| textiles | 0.0008 | 0.0000 | 0.0016 | 0.0004 | 0.0002 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0500 | 0.0012 | 0.0035 | 0.0062 | 0.0014 |
| paper, pulp, & publishing | 0.0010 | 0.0165 | 0.0032 | 0.0001 | 0.0033 |
| petrochemicals | 0.0175 | 0.0133 | 0.1284 | 0.0031 | 0.0029 |
| chemicals, rubber, plastics | 0.0001 | 0.0003 | 0.0004 | 0.0001 | 0.0003 |
| trade | 0.0003 | 0.0003 | 0.0004 | 0.0001 | 0.0016 |
| transport | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0001 |
| information | 0.0001 | 0.0001 | 0.0000 | 0.0001 | 0.0001 |
| finance & insurance | 0.0001 | 0.0004 | 0.0003 | 0.0001 | 0.0002 |
| finance & insurance | 0.0007 | 0.0004 | 0.0010 | 0.0007 | 0.0023 |
| business services | 0.0001 | 0.0001 | 0.0007 | 0.0000 | 0.0002 |
| consumer services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0880 | 0.1761 | 0.1602 | 0.0241 | 0.0205 |

U.S. input shares of Canadian producer price -- by industry

| | information | finance & insurance | business services | consumer services | real estate | other services |
|-----------------------------|---------------|---------------------|-------------------|-------------------|---------------|----------------|
| <i>Imported inputs</i> | | | | | | |
| agriculture & fisheries | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0002 |
| forestry | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| mining | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0001 |
| utilities | 0.0001 | 0.0001 | 0.0001 | 0.0006 | 0.0000 | 0.0001 |
| construction | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| lumber | 0.0002 | 0.0000 | 0.0002 | 0.0001 | 0.0000 | 0.0000 |
| iron & steel | 0.0000 | 0.0000 | 0.0001 | 0.0005 | 0.0000 | 0.0000 |
| non-ferrous metals | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0000 |
| fabricated metals | 0.0002 | 0.0000 | 0.0007 | 0.0008 | 0.0000 | 0.0002 |
| motor vehicles | 0.0003 | 0.0000 | 0.0004 | 0.0003 | 0.0000 | 0.0000 |
| other transport equipment | 0.0001 | 0.0000 | 0.0001 | 0.0000 | 0.0000 | 0.0001 |
| electrical machinery | 0.0009 | 0.0005 | 0.0018 | 0.0017 | 0.0000 | 0.0010 |
| other machinery & equipment | 0.0008 | 0.0002 | 0.0018 | 0.0032 | 0.0000 | 0.0077 |
| non-metallic minerals | 0.0000 | 0.0000 | 0.0001 | 0.0004 | 0.0000 | 0.0001 |
| other durables | 0.0001 | 0.0001 | 0.0002 | 0.0006 | 0.0000 | 0.0001 |
| processed foods | 0.0000 | 0.0001 | 0.0001 | 0.0005 | 0.0000 | 0.0006 |
| beverages & tobacco | 0.0000 | 0.0000 | 0.0000 | 0.0001 | 0.0000 | 0.0000 |
| textiles | 0.0000 | 0.0000 | 0.0000 | 0.0003 | 0.0000 | 0.0003 |
| apparel | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| leather | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| paper, pulp, & publishing | 0.0007 | 0.0026 | 0.0037 | 0.0046 | 0.0000 | 0.0027 |
| petrochemicals | 0.0001 | 0.0000 | 0.0001 | 0.0001 | 0.0000 | 0.0000 |
| chemicals, rubber, plastics | 0.0005 | 0.0004 | 0.0026 | 0.0026 | 0.0000 | 0.0019 |
| trade | 0.0002 | 0.0001 | 0.0003 | 0.0009 | 0.0000 | 0.0001 |
| transport | 0.0002 | 0.0003 | 0.0003 | 0.0011 | 0.0000 | 0.0009 |
| information | 0.0016 | 0.0001 | 0.0001 | 0.0001 | 0.0000 | 0.0002 |
| finance & insurance | 0.0001 | 0.0106 | 0.0001 | 0.0000 | 0.0004 | 0.0001 |
| business services | 0.0005 | 0.0010 | 0.0063 | 0.0002 | 0.0003 | 0.0010 |
| consumer services | 0.0006 | 0.0004 | 0.0001 | 0.0018 | 0.0000 | 0.0002 |
| real estate | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| other services | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| TOTAL | 0.0073 | 0.0168 | 0.0193 | 0.0210 | 0.0007 | 0.0176 |

Annex Table A-5
Detailed Indirect Export Composition

Indirect exports -- domestic activity per dollar of exports

| | United States | | Canada | |
|-----------------------------|----------------------------|-------------------------------------|----------------------------|-------------------------------------|
| | Indirect activities, value | Indirect activities, share of total | Indirect activities, value | Indirect activities, share of total |
| agriculture & fisheries | 0.1040 | 0.0251 | 0.0790 | 0.0315 |
| forestry | 0.0050 | 0.0012 | 0.0240 | 0.0096 |
| mining | 0.0470 | 0.0113 | 0.0820 | 0.0327 |
| utilities | 0.0830 | 0.0200 | 0.0590 | 0.0235 |
| construction | 0.0720 | 0.0173 | 0.0210 | 0.0084 |
| lumber | 0.0340 | 0.0082 | 0.0770 | 0.0307 |
| iron & steel | 0.0290 | 0.0070 | 0.0370 | 0.0147 |
| non-ferrous metals | 0.0270 | 0.0065 | 0.0420 | 0.0167 |
| fabricated metals | 0.0600 | 0.0145 | 0.0480 | 0.0191 |
| motor vehicles | 0.1270 | 0.0306 | 0.3190 | 0.1271 |
| other transport equipment | 0.0770 | 0.0185 | 0.0830 | 0.0331 |
| electrical machinery | 0.1930 | 0.0465 | 0.0800 | 0.0319 |
| other machinery & equipment | 0.2360 | 0.0569 | 0.2060 | 0.0821 |
| non-metallic minerals | 0.0310 | 0.0075 | 0.0200 | 0.0080 |
| other durables | 0.0360 | 0.0087 | 0.0170 | 0.0068 |
| processed foods | 0.1430 | 0.0344 | 0.1050 | 0.0418 |
| beverages & tobacco | 0.0280 | 0.0067 | 0.0140 | 0.0056 |
| textiles | 0.0340 | 0.0082 | 0.0220 | 0.0088 |
| apparel | 0.0310 | 0.0075 | 0.0190 | 0.0076 |
| leather | 0.0080 | 0.0019 | 0.0040 | 0.0016 |
| paper, pulp, & publishing | 0.0970 | 0.0234 | 0.1130 | 0.0450 |
| petrochemicals | 0.0400 | 0.0096 | 0.0290 | 0.0116 |
| chemicals, rubber, plastics | 0.2130 | 0.0513 | 0.1510 | 0.0602 |
| trade | 0.4520 | 0.1089 | 0.1910 | 0.0761 |
| transport | 0.2170 | 0.0523 | 0.1820 | 0.0725 |
| information | 0.0860 | 0.0207 | 0.0380 | 0.0151 |
| finance & insurance | 0.3400 | 0.0819 | 0.0680 | 0.0271 |
| business services | 0.3770 | 0.0908 | 0.1230 | 0.0490 |
| consumer services | 0.2310 | 0.0556 | 0.0800 | 0.0319 |
| real estate | 0.2310 | 0.0556 | 0.1330 | 0.0530 |
| other services | 0.4620 | 0.1113 | 0.0440 | 0.0175 |

Canada-Chile Free Trade Agreement @ Ten: Beyond the Numbers

William Dymond[♦]

Introduction

The Canada-Chile Free Trade Agreement (CCFTA), which entered into force on July 5, 1997, was in some respects a first for both countries. For Canada, it was the first free trade agreement concluded with a country in South America. For Chile, it was the first comprehensive free trade agreement concluded with any country. During a visit to Santiago in July 2007, Prime Minister Harper stated that the CCFTA had been an “overwhelming success, opening doors to friendship, prosperity, growth and cooperation between Canada and Chile that have exceeded all of our expectations.”¹ Part One of this paper places the CCFTA in the context of Canadian and Chilean trade policy evolution. Part Two reviews the main features of the CCFTA and compares them with other free trade agreements of the two parties. Part Three assesses the trade and investment impact of the CCFTA and records the experiences and perceptions of the private sector. Part Four examines the CCFTA in the context of the rapidly evolving global economy.

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¹ See “Prime Minister Harper signals Canada’s renewed engagement in the Americas,” 17 July 2007, Santiago, Chile, at www.gc.ca.

Part One: Trade Policy Development: Canada and Chile

Canada

The structure and resource endowments of the Canadian economy make substantial participation in international trade indispensable. Ample and easily accessible natural resources, arable farming land capable of production beyond the needs of local consumption, and a vast geography have required the Canadian economy to develop industries whose viability depends on exporting most of the production. Unlike its principal past and current trading partners, Canada has never had a sufficiently large population to enable sustainable economic development to proceed on the basis of internal demand alone². Beyond structural characteristics and resource endowments, a number of critical factors influence the development and implementation of Canadian trade policies.

The first is that Canada is a market economy driven primarily by private sector investment, production, and consumption decisions. While government macro- and micro-economic policies influence these decisions, Canada's trade performance, in terms of markets and products exported and imported, originates from decisions made primarily in the private sector. The second is proximity to the vast US market with a compatible market economy, a common language, and virtually identical business practices and commercial legal system. As Jacob Viner pointed out more than fifty years ago, the Canadian and US economies are complementary. Canada has surpluses of raw materials that the US economy needs; standard US-made capital goods are well adapted to Canadian production techniques and the consumption standards and tastes of the two countries are virtually identical³. There is, accordingly, no organic link be-

² See Michael Hart, *A Trading Nation: Canadian Trade Policy from Colonialism to Globalization*, for a discussion of trade policy and Canadian economic development (Vancouver: UBC Press, 2002), chapter 1.

³ Jacob Viner, "Canada and Its Giant Neighbour," Alan B. Plaunt Memorial Lecture, Carleton University, Ottawa, 20 January and 1 February 1958, p. 37.

tween trade outcomes and the development and implementation of Canadian trade policies that do not address commercial relations with the United States. The third factor is that the network of multilateral trade rights and obligations embodied first in the General Agreement on Tariffs and Trade (GATT) and subsequently in the World Trade Organization (WTO) severely limits the scope for deploying tariff and non-tariff barriers to alter the destinations for Canadian exports and the sources of Canadian imports. Moreover, the success of multilateral negotiations in lowering tariff barriers means that tariff preferences created by regional and bilateral trade agreements are unlikely to have more than a marginal impact on international trade and investment⁴.

The successful conclusion of the CCFTA played a critical role in validating free trade agreements as a valid option for Canadian trade policy. It followed the bilateral agreement with the United States (CUSFTA) and the North American Free Trade Agreement, (NAFTA), both of which were highly controversial in Canada. The CUSFTA represented a departure from exclusive reliance upon multilateralism as the bedrock of Canadian trade policy, and the NAFTA offered tariff-free access to the Canadian market for a low-wage developing country⁵. These agreements effectively reversed a century of Canadian trade policy that was based on the twin goals of supporting and protecting the manufacturing sector while seeking improved access to export markets for natural resources and most agricultural products⁶. By 1997, the trade policy debate was no longer over

⁴ US industrial goods tariffs are in the range of 3 percent on average, while EU tariffs are in the range of 4 percent. A preferential rate of zero with non-US countries might result in some trade diversion from the United States but is hardly sufficient to induce long-term investment since the preference margin can be quickly eliminated by exchange rate changes. There is evidence that trade in certain agricultural products is affected by free trade agreements but since agriculture represents a small and declining percentage of economic output, the macro-economic impact is imperceptible.

⁵ The notable exception was the 1965 Canada-US Auto Pact.

⁶ For an account of the background, rationale, and conduct of these negotiations, see Michael Hart with Bill Dymond and Colin Robertson, *Deci-*

the benefits and disadvantages of free trade agreements but rather over which countries Canada should target in an aggressive free trade agreement strategy: "Let us embrace this agreement and others that will follow," stated Trade Minister Art Eggleton in introducing the CCFTA to the Standing Committee on Foreign Affairs and International Trade, February 20, 1997⁷. While successive trade ministers since then have consistently reaffirmed the primacy of the multilateral system in Canadian trade policy, Canada has since negotiated free trade agreements with Israel, Costa Rica, the European Free Trade Association (EFTA) countries of Iceland, Norway, Switzerland, and Liechtenstein, and Peru⁸. Negotiations have been initiated but not concluded with Singapore, the Central American Four (Honduras, Nicaragua, El Salvador, and Guatemala), South Korea, Colombia and the Dominican Republic. During his visit to Barbados, Prime Minister Harper announced on July 19, 2007, the launch of FTA negotiations with the Caribbean Community (CARICOM). On February 20, 2008, Minister Emerson announced the launch of negotiations toward a free trade agreement with the Hashemite Kingdom of Jordan (Jordan).

It is noteworthy that Canada's record in negotiating and implementing free trade agreements has lagged behind the record of its free trade partners, including Chile, despite the commitment of Canadian governments to negotiating free trade agreements since 1997. The principal reason for this slow pace is the absence of active, broad-based and public support for such agreements combined with effective opposition by well organized and concentrated groups hostile to one or more of the provisions of these agreements. In the case of the EFTA agreement, Canadian shipbuilding interests only recently abandoned

sion at Midnight: Inside the Canada-US Free Trade Negotiations, (Vancouver: UBC Press, 1994).

⁷ Online at www.international.gc.ca.

⁸ The NAFTA, the CCFTA, the Canada-Costa Rica Agreement and Canada-EFTA Agreement are comprehensive agreements. The Canada-Israel Agreement is basically a goods-only agreement, although there are provisions providing for "best efforts" cooperation in competition policy.

their strenuous resistance to the elimination of Canadian tariffs on ships. In the case of the Central American Four, the Canadian clothing industry maintains its opposition to the elimination of Canadian tariffs on clothing imports, especially from Honduras. In such circumstances, the Canadian government appears to have concluded that the political cost of overriding this opposition could not be justified by the economic gains.

Chile

The structure and resource endowments of the Chilean economy bear a strong resemblance to Canadian circumstances: a small open economy heavily dependent on export markets, equipped with ample mineral and agricultural resources, and a small population. Unlike its principal trading partners and some of its neighbours, Chile's population will always be too small to sustain economic development through reliance on domestic demand alone. Like Canada, the efficient exploitation of this resource base requires access to global markets combined with solid macro- and micro-economic policies designed to foster the efficient development of the resource base. For over three decades, Chile has operated a market economy in which economic outcomes are determined primarily by private sector decisions.

There are also important dissimilarities. Chile's trade partners are diversified across the Western Hemisphere, Europe, and Asia. It does not have the advantages and disadvantages of proximity to a vast highly industrialized market operating in the same language and on transparent and market-based principles for its exports or as a natural source of investment.

Canadian and Chilean trade policies have been largely congruent. Like Canada, Chile, while remaining committed to the multilateral principles of the WTO, has increasingly focused on the negotiation of bilateral trade agreements. The CCFTA negotiations with Canada provided an important proving ground for the deployment of a free trade strategy with a developed country and prepared Chile for negotiations with the United States five years later on a template developed by Canada and the United States for the NAFTA.

Chile has free trade agreements with 18 countries, including with the United States, Mexico, Central American Five (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua), China, South Korea, Japan and EFTA (Iceland, Norway, Switzerland and Liechtenstein), Panama, Colombia and Peru (although not all are in force)⁹. Most of these agreements reflect the comprehensive model.

Chile also has two Association Agreements, one with the European Union (EU) and the Pacific 4 (which includes New Zealand, Singapore and Brunei Darussalam along with Chile).

Further, Chile has "complementation agreements" with a number of South American countries, including Mercosur, and partial scope agreements with Cuba and India.

The large number of Chile's bilateral agreements, which seems likely to grow (Chile has active FTA negotiations with India, Malaysia, Ecuador, Turkey and Australia¹⁰), is not an unalloyed advantage. As the WTO points out, there are growing differences in the treatment of domestic industries, since tariffs are being phased out over varying periods for different goods, and under different time frames overall under each agreement. The resulting complexity is compounded by differing rules of origin. This renders the consistent application of these agreements difficult and could lead to sub-optimal economic outcomes¹¹.

A list and brief description of current Chilean bilateral trade agreements is provided in Annex 1.

⁹ General Directorate for International Economic Affairs, accessed March 7, 2008; http://www.direcon.cl/cuadro_resumen_en.html

¹⁰ Ibid.

¹¹ WT/TPR/S/124, 4 November 2003, Trade Policy Review Body Report by the Secretariat.

Part Two: CCFTA: Main Features: Comparison with NAFTA

The CCFTA is erected upon the template of a modern free trade agreement created by Canada, the United States, and Mexico for the NAFTA. This template, which has been used by both Canada and Chile for the negotiation of free trade agreements with other partners, reconfirms and adds to the existing rights and obligations of both countries under the WTO. The essential features of the CCFTA are:

- Phased elimination of tariffs on most goods and related issues of tariff and customs administration;
- Obligations respecting the protection of investment along the lines of a standard foreign investment treaty;
- Removal of barriers to trade in services with special provisions respecting telecommunications;
- Exceptions on investment and services based on the NAFTA model;
- Temporary business entry provisions;
- Institutional and administrative provisions and general exceptions to the agreement which basically follow those contained in the WTO Agreement;
- Dispute settlement provisions;
- Side agreements on labour and the environment providing for enforcement of laws.

The CCFTA adds two significant obligations to the NAFTA model. One is the mutual elimination of antidumping measures in bilateral trade within six years of the agreement's entry into force. The other is the elimination of export subsidies on bilateral trade in agricultural products.

The most important omissions from the NAFTA model were government procurement and financial services disciplines. With respect to procurement, Chile is not a member of the WTO agreement; it has, however, included procurement obligations in some of its other free trade agreements. In 2006, Canada and Chile completed negotiations on a new procure-

ment chapter to be added to the agreement¹². The provisions have not yet entered into force. Negotiations to add a chapter on financial services have been completed¹³.

Other omissions from the NAFTA model include intellectual property protection, technical barriers to trade, and sanitary/phytosanitary (SPS) measures, which are captured in the WTO obligations of both countries. Given a surge in perceived SPS barriers, a committee was established in 2004 to more quickly resolve bilateral issues and provide a forum to coordinate and consult on multilateral SPS issues.

The progress on government procurement, SPS, and financial services provides a concrete example of the continued evolution of the CCFTA.

Part Three: CCFTA Impact Assessment

To assess the impact of the CCFTA, personnel from the Centre for Trade Policy and Law (CTPL) interviewed 25 companies between March 12-16, 2007, on their experiences with the CCFTA. These companies comprised both Canadian and Chilean-owned companies covering a broad range of goods, services, and investment involved in Canada-Chile trade. They also interviewed Chilean officials from the Ministry of Foreign Affairs, the Canadian Ambassador, and Embassy officers¹⁴.

Overall, company representatives agreed that the negotiation and implementation of the CCFTA had a positive impact on their short and longer-term business interests. They pointed to a number of specific benefits directly related to the agree-

¹² See www.dfait-maeci.gc.ca/tna-nac/RB/ccfta_toc-en.asp

¹³ The negotiation of a Financial Services Chapter was concluded in July 2007. Review of the legal text in English, French and Spanish is currently underway, after which it will be formally signed and then ratified according to each country's domestic procedures before being implemented. See Canada-Chile Free Trade Agreement (CCFTA): Text of the Agreement; <http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/chile-chili/index.aspx?lang=en>, accessed March 7, 2008.

¹⁴ The list of companies interviewed is attached as Annex 3.

ment, as well as some general but indirect benefits that arose from the increased attention on the bilateral relationship.

A specific benefit mentioned by many of the representatives of the equipment and distribution companies was the initial price effect for Canadian suppliers as a result of the reduction of tariffs, particularly in the absence of other preferential trade agreements between Chile and third countries. According to these same representatives, the price effect of the CCFTA has eroded over time, particularly as Chile has subsequently negotiated free trade agreements with the United States and the EU. There is also the general price effect of the implementation of tariff reduction through Chile's commitments under the Uruguay Round Agreement of the WTO. This has contributed to the increasing competitiveness of suppliers from China, in particular, and Asia more generally, even in the absence of preferential trade agreements. These developments now mean that Canadian companies in Chile source globally; the Canadian market is now just one of several options for supply. While this may or may not have a positive effect on bilateral trade flows, the issue for them is, rather, that they are now more competitive in Chile and internationally because they have access to a range of suppliers.

Nevertheless, these companies generally agreed that the price effect remained positive and beneficial, even if reduced in magnitude. For some companies, it provided an important price advantage over other, non-Canadian suppliers to the Chilean market as they grew their business in Chile. Since they compete in a price-sensitive market, many of these companies also said that the price effect shielded them, at least for a short period of time, from less price-competitive suppliers from other countries. This was particularly important for several of the companies interviewed, who said they were just beginning to establish themselves when the CCFTA began to take effect. The price effect certainly helped in these initial stages.

Many of those interviewed said the CCFTA had raised the level of awareness among business people and the Chilean government about Canada and Canadian companies and interests. Those who had been working in Chile prior to the negotiation of the CCFTA all said that the process of Chile deciding to en-

ter into negotiations with Canada, the negotiations themselves, and then the announcement of a deal and ratification of the agreement all contributed to positive perceptions about Canada and Canadian goods and services as well as about Canadian entrepreneurs more generally. For those interviewed, this positive perception has endured and continues to contribute positively to their overall competitiveness in the Chilean market.

Another direct effect of the CCFTA was on the investment side. This effect was particularly cited by the larger companies interviewed. Representatives from this group of companies all agreed that Chile already had a good investment regime prior to the negotiation of the CCFTA. At the same time, the regime was further enhanced by the investment provisions contained in the free trade agreement. The CCFTA, therefore, provided Canadian investors with greater confidence and certainty, which has had a positive impact on Canadian direct investment flows into the Chilean economy.

Many of those interviewed also mentioned that these investment measures were positively enhanced by complementary agreements, and specifically the double taxation agreement negotiated by Canada and Chile, and the regulatory reform effect of the implementation of the agreement. It was this package of direct and indirect effects of the increased attention on Chile as a result of the negotiation of the CCFTA that is one of the positive contributions of the agreement itself.

As for other direct effects of the CCFTA, those interviewed were more reserved. When asked directly whether the CCFTA has a direct effect today on their business decisions, all of those interviewed said either that it has little or no impact. Many of those interviewed, however, qualified their response by saying that this is the case because the effects of trade agreements—the CCFTA and others—have now been fully integrated into the economy and therefore into their decision making. For them, Chile is a stable, open, internationally competitive, and relatively efficient market in which to do business. Chile is also a place where the rule of law is well established, the system is predictable, and everything generally functions much like it does in Canada or other developed countries. Those are the fac-

tors that most directly affect short-term decision making and longer-term strategic planning.

The CCFTA is also limiting in itself in terms of overall impact. This is a direct result of the fact that trade agreements mainly seek to address issues of particular importance to business at the time during which they are being negotiated, with less focus on emerging issues that may have a competitive effect on business in the future.

For example, several of those interviewed said that the CCFTA could benefit from a government procurement chapter. Others interviewed, particularly those in the high-tech and information technology sectors, pointed to the need for mutual recognition of professional services designations and credentials. This would provide companies with greater flexibility in how they can take advantage of skills and expertise of professionals in both countries.

Some of those interviewed pointed to recent attempts by both the Chilean and Canadian governments to market the CCFTA as a way for Canadian business to use Chile as a platform for doing business regionally. They applauded the initiative and suggested that it is generally a good idea to encourage Canadian business to think more aggressively and regionally when investigating markets outside the United States. At the same time, several companies interviewed that have other operations in South America said there are limits to the extent to which Chile can be a base for regional expansion. These limits are a function mainly of the trade and other barriers of other countries in the region that make it uncompetitive for some Canadian businesses to rationalize operations through some kind of regional hub.

In terms of indirect effects of the CCFTA, the negotiation of the CCFTA was the first time that Chile had entered free trade negotiations with a developed country. This was significant in itself as it signalled Chile's confidence that it could compete internationally at the same level as developed countries.

It was also significant that Chile negotiated with Canada instead of another developed country. Many of those inter-

viewed said that Chile's strategy to become more integrated into the world economy through preferential trade agreements likely would have either floundered or even failed if Chile had decided first to negotiate with either the United States or the EU first, since these negotiations would have represented too dramatic and ambitious a leap for Chile to digest politically at the time. As a smaller economy with a different history and relationship with Chile and the region more generally, Canada was the best choice as the first bilateral trade agreement partner for Chile.

This decision to negotiate with Canada first and the ensuing experience and public discussion about preferential trade agreements in Chile, therefore, contributed indirectly to a more general Chilean trade strategy to open the economy further and to focus more attention on international competitiveness.

Generally speaking, those interviewed said they are not experiencing any significant negative effects of Chilean regulatory barriers to trade (e.g., investment restrictions, sanitary and phytosanitary measures, technical barriers, standards) that are impeding their respective businesses from taking full advantage of the CCFTA or the WTO Agreement more generally. While there are some minor regulatory and other issues that have either a negative or irritant effect on some of the businesses of those we interviewed, the feedback is that these issues are not central to their overall competitiveness and therefore can be accommodated.

Some companies recommended standardized customs forms to improve efficiency at the border. Those involved mainly in service-related businesses recommended improvements in the processes for using Canadian labour in Chile and other measures related to recognizing the credentials of skilled labour in both countries. Several companies also recommended an improved promotional and informational campaign to assist business, particularly SMEs, to understand regulatory issues and how they can affect their specific business interests.

Part Four: CCFTA in the Context of the Global Economy

The assessment of the impact of free trade agreements has been rendered significantly more complicated by the growth of global value chains¹⁵. This has been associated with:

- an increasing share of trade accounted for by intermediate inputs;
- an increasing import content in exports;
- an increasing value of service flows;
- an increasing importance of investment income from foreign investments, including profits from sales abroad by foreign affiliates of domestic firms¹⁶;
- an increasing importance of flows internal to global enterprises;
- an increasing proportion of physical flows that do not involve changes in ownership¹⁷.

This complex multi-country production process has rendered conventional statistics inadequate in terms of accurately capturing the origin of value-added¹⁸. This compounds the challenge

¹⁵ For a concise description of the key factors in the rise of value chains, see Aaron Sydor, "The Rise of Global Value Chains," in *Foreign Affairs and International Trade, Eighth Annual Report on Canada's State of Trade* (Ottawa, June 2007), pp. 47-70. See also Hildegunn Kyvik Nordak, "International Production Sharing; A Case for a Coherent Policy Framework," WTO Discussion Paper No. 11 (2007), at WTO.org

¹⁶ UNCTAD reports that, by 2005, some 77,000 firms qualified as multinational in their activities, each accounting for an average of ten separate foreign affiliates. Worldwide sales by foreign affiliates had reached US\$22.2 trillion in 2005, nearly double worldwide exports of goods and services at US\$12.6 trillion. See *World Investment Report* (Geneva: UNCTAD, 2006).

¹⁷ For an overview of the measurement issues raised by global value chains see Art Ridgeway, "Data Issues on Integrative Trade between Canada and the US: Measurement Issues for Supply Chains", in Dan Ciuriak (ed.) *Trade Policy Research 2006* (Ottawa: Foreign Affairs and International Trade Canada).

¹⁸ Alexander Yeats, by analyzing data for selected industries and extrapolating the results more widely, estimates that a third or more of world trade is made up of parts and components. "Just How Big is Global Production Sharing?" in Arndt and Kierzkowski, eds., *Fragmentation: New Produc-*

facing governments when formulating international economic policy because simple statistical assessments of flows of exports and imports or direct investment between trade agreement partners, as set out in Annex 2 which provides a statistical summary of Canada-Chile trade and investment, do not fully reflect the extent to which a bilateral free trade agreement is achieving its objectives¹⁹.

For example, copper ores and concentrates and other ores bearing copper constitute the largest portion of Chile's exports to Canada. Moreover, the rising share of these products in total exports accounts for almost all of Chile's trade surplus with Canada. The application of a mercantilist conception of international trade, in which the object of the game is to develop and exploit exports and minimize imports, would regard Chile's surplus as a problem, requiring either an increase in Canadian exports to Chile or a decrease in Chile copper exports to Canada²⁰. However, the prominence of Chilean copper in Canada-Chile bilateral trade needs to be assessed in the larger context of the role played by copper in the Canadian economy in the context of its place in the wider global economy.

Canada is an important player in the global supply chain of copper and copper products used in a wide variety of industries,

tion Patterns in the World Economy (Oxford: Oxford University Press, 2001), pp. 108-143.

¹⁹ For a detailed discussion of the implications of the rise of global value chains for trade policy formulation, see Michael Hart and Bill Dymond, "Trade Theory, Trade Policy and Cross-Border Integration" in Dan Ciuriak (ed.) *Trade Policy Research 2006* (Ottawa: Foreign Affairs and International Trade Canada, 2007): 103-158. Also see Michael Hart and Bill Dymond, "Navigating New Trade Routes: The Rise of Value Chains, and the Challenges for Canadian Trade Policy", C.D. Howe Institute Commentary No. 259 (March 2008).

<http://www.cdhowe.org/display.cfm?page=publications&yearToUse=2008>

²⁰ Jim Stanford, chief economist for the Canadian Auto Workers Union is the prime exponent of the mercantilist view of international trade. He contends that Canada's bilateral trade agreements with Chile and Costa Rica have been unsuccessful because Canada's trade deficit with each has increased. See Jim Stanford, "Why the rush to ink more deals?" *Globe and Mail*, Monday, September 25, 2006. Online at www.globeandmail.com.

including architecture, automotive, marine, and telecommunications. In 2004, Canada exported CA\$2.9 billion of copper and copper products, importing \$1.9 billion. The United States is the major destination for exports, followed principally by Japan, South Korea, and China. Chile is a major source of imports, primarily of ores and concentrates, but the United States, Peru, and Germany also have significant shares of Canada's import market²¹. It is reasonable to assume that Chilean copper ores and concentrates find their way into a broad range of products manufactured and marketed as part of fragmented global supply chains. These exports are critical components of global networks comprising inter alia design, engineering, manufacturing, marketing, innovation, product design, brand building, and employee training, whether done in-house, out-sourced locally, or internationally.

In the mercantilist model, an import tariff or quota protects domestic production and employment against imports and assigns the cost to the consumers. In the context of global value chains, such a measure is more likely to result in the loss of domestic production if it raises costs to participants in a value chain. A subsidy designed to promote exports seeks to convey advantage to domestic producers in international markets and assigns the cost to the taxpayers. In a value chain, an export subsidy effectively subsidizes all participating producers. The use of such instruments in the evolving international economy driven by global value chains yields often perverse economic outcomes.

From a policy perspective, this suggests that governments switch their focus from measures and agreements anchored on cross-border trade to the intersection of firm-specific value and location-specific value. Governments now compete in promoting policy settings that are congenial to increasingly mobile slices of production by removing barriers and providing incentives. Trade agreements provided the framework that promoted fragmentation and integration but are no longer sufficient tools. The business view of trade policy has been evolving rapidly to

²¹ See www.Nrcan.gc.Canada/mms/cmy.

adjust to the new realities of global trade dynamics. From the foundation of the multilateral trade system in the late 1940s to the conclusion of the Uruguay Round in the 1990s, business was the intimate partner of governments in addressing classical trade barriers. The business agenda aimed to remove barriers to export markets and to maintain barriers to their domestic markets. The language of business trade policy closely paralleled mercantilist trade strategies aimed at strengthening and protecting the domestic market as a basis for export success. While governments have largely remained locked in a mercantilist mindset, business has moved beyond preoccupation with the domestic market and is promoting an agenda more closely attuned to the manner in which international business is increasingly conducted. Rather than calling on governments to withdraw even further from the market or accept tighter disciplines, business is looking for governments to deal with border issues, regulations and institutions for managing inter-governmental relationships in a way that reflects the reality of integrated markets. This new agenda is abundantly plain in the recommendations of "The North American Competitiveness Council" (NACC) to the governments of Canada, the United States, and Mexico. These recommendations, while addressed to North American issues, may be taken as a proxy for the modern business agenda on the management of trade and economic relations²².

Conclusion

The CCFTA captured and reflected in binding provisions the commitment of both Canada and Chile to foster the expansion of bilateral trade and investment. For both countries the validation of the free trade model for national trade policy provided an essential underpinning to long-term investment decisions that benefit both countries. The agreement played an important role in breaking the Canadian and Chilean economies out of the con-

²² See *Enhancing Competitiveness in Canada, Mexico and the United States*, accessed at www.ceocouncil.ca/en/north/north.php.

finances of small domestic markets and contributed to their integration into global value chains.

Since the CCFTA came into force in 1997, it has contributed to a four-fold expansion of bilateral trade in goods from US\$554 million to US\$2 billion. Chilean exports to Canada have grown more rapidly than its imports from Canada reflecting Canadian investment in Chilean copper resources and the appetite of Canadians for off-season Chilean fruits and vegetables. Trade in services has grown more modestly – about 23 percent – although the displacement of direct service exports by a Canadian presence probably masks the overall growth in service transactions between the two countries. Canadian investment in Chile has doubled over this period, principally in the mining sector and expanded beyond the mining sector to transportation, financial and utilities services and chemicals.

The agreement continues to evolve. The creation of a committee to address sanitary and phytosanitary trade barriers will foster increased trade in the agri-food sector. The addition of a chapter for the mutual opening of government procurement markets will open new markets for the exporters of both countries. Similarly, an additional chapter on financial services will allow access to markets for cross-border provision of financial services and for investment in financial institutions, responding to Canadian financial institutions that have identified Chile as a priority market for banking, asset management and other financial services. Stakeholder views suggest that greater efforts by both governments to communicate the advantages of the agreement to the private sector would yield important dividends.

The July 2007 visit to Santiago by Prime Minister Harper was an occasion to celebrate the achievements of the CCFTA and to build for the future. The Prime Minister affirmed that the “Canada-Chile Free Trade Agreement, the cornerstone of the bilateral economic relationship, has been of mutual benefit to both countries for 10 years and has been the catalyst for the overall bilateral partnership.” He announced the establishment of the Canada-Chile Partnership Framework as a commitment to enhance and sustain partnership in key sectors, including economic relations, global and hemispheric cooperation, en-

ergy, health, agriculture, innovation, science and technology, climate and the environment, education, and youth exchanges. He welcomed the forthcoming opening of a new Export Development Canada (EDC) office in Santiago to better assist Canadian exporters working in Chile and other South American countries in a wide range of sectors, including mining, telecommunications, energy, and transportation. The expected return visit to Canada of the President of Chile in 2008 will help sustain the deepening of the bilateral relationship.

Two areas of governance are critical given the rise of value chains as the increasingly dominant paradigm of global trade. The first is the effectiveness of nationally based competition policies to prevent the emergence of anti-competitive practices. The second is the complex of policies governing foreign investment given the rise of foreign mergers and acquisitions and the increasing importance of state owned foreign investors. The Canadian government is reviewing both competition and foreign investment policies to ensure that Canadian legislation is adequate to meet the new challenges. The experiences and perceptions of Chilean and Canadian authorities could provide the basis for developing sustained cooperation in these two areas.

Internationally, both countries have a wealth of trade policy experience and expertise that could usefully be deployed in developing Spanish language trade policy capacity building programmes in Latin America. Such programmes would respond to a long term need for governments in the region to develop and sustain trade policy capacity to manage effectively their interests in the WTO and to negotiate and participate in regional and bilateral free trade agreements.

ANNEX 1:

Highlights of Chile's Trade Agreements

Free Trade Agreements

Chile-United States 2004

Covers all exports of goods to reach a tariff level of 0% over 12 years, including agriculture and textiles. Also covers sanitary and phytosanitary measures, technical barriers to trade, trade remedies, government procurement, investment, services, electronic commerce, labour, environment and dispute settlement.

Chile-Mexico 1999

Similar to Canada-Chile FTA. Trade in goods covers national treatment, market access, rules of origin, customs procedures and safeguard measures. Has a section covering technical rules, such as sanitary and phytosanitary rules and standards, safeguards, investments, services, competition policy, intellectual property rights and dispute settlement. Liberalizes a large part of trade by reduction of the tariff to zero. One hundred products retain various taxes, some with tax rebates. Some goods are subject to quotas.

Chile-Japan 2007

Liberalization of trade in goods, services, promotion and protection of investment, procurement, intellectual property, dispute resolution.

Chile-China 2006

Covers goods only with measures for market access, trade remedies, rules of origin, sanitary and phytosanitary measures, technical barriers to trade, dispute settlement and cooperation (on technology and R&D). Agreement is to provide free access for 92% of Chilean exports and 50% of Chinese exports. MOU signed between labour and social security authorities and side agreement on environment.

Chile-South Korea 2004

Covers trade in goods with provisions for customs procedures, safeguards, antidumping and countervailing duties, sanitary and phytosanitary issues, technical regulations and standards, investments and transborder services, temporary admission for businesspeople, government procurement, and intellectual property and dispute settlement.

Chile-European Free Trade Association (Norway, Liechtenstein, Switzerland, Iceland) 2004

Covers trade in goods, services and investment, competition, government procurement, intellectual property, and dispute settlement. Complementary agreements on trade in agriculture between Chile and Iceland, Norway and Switzerland.

Chile-Central America (Costa Rica, El Salvador, Honduras, Guatemala, Nicaragua) Signed 1999

Common set of disciplines with bilateral protocols to be negotiated between Chile and each of the CA countries. Covers trade in goods, rules of origin,

customs procedures, safeguard measures, unfair trade practices, SPS measures, technical regulations, investment, trade in services, competition policy and dispute settlement. Chile-Costa Rica bilateral protocol entered into force 2002. Chile-El Salvador protocol entry into force 2002. Completion of Chile-Honduras bilateral negotiations 2005.

Chile-Panama Signed 2006 - Not yet in force

Covers market access for goods, investment, transborder services, bilateral cooperation, environment and dispute settlement.

Chile-Peru 1998 - Renegotiated agreement signed 2006

Provides for gradual elimination of tariffs, and an agreement to limit the use of export subsidies. Also contains provisions for SPS, technical regulations, taxation, intellectual property and customs valuation. Renegotiated agreement shortens tariff reduction timelines.

Chile-Colombia Signed 2006 - Not yet in force

Measures covering health, investment, services, procurement and intellectual property.

Association Agreements

Chile-European Union Association Agreement 2003

Sections addressing political dialogue, economic, scientific and cultural cooperation, in addition to trade-related matters. Trade section covers trade in goods, contingency measures, financial services, capital controls and balance-of-payments measures, right of establishment, competition, investment, government procurement, intellectual property, dispute settlement, sanitary and phytosanitary measures and technical regulations, maritime transport, telecommunications. In addition, it contains side agreements on trade in wines and alcoholic beverages with provisions on the protection of geographical indicators and denominations, traditional expressions and complementary quality indicators, trade marks and labels.

Chile-New Zealand-Singapore-Brunei Association Agreement(P4) 2006

95% of Chilean exports to New Zealand to become tariff free, and 75% of exports to other partners to have immediate access with subsequent reductions over the next 10-12 years. Covers trade in goods, services, government procurement, sanitary and phytosanitary measures, an environment agreement and an MOU on labour cooperation.

Complementation Agreements

Chile-MERCOSUR 1996

Provides for trade in goods, unfair business practices, safeguard measures, dispute settlement, customs valuation, technical regulations, SPS measures, export promotion measures, and intellectual property.

ANNEX 2: Tables

Table 1: Top 5 Destinations for Canadian Exports as a Percentage of Total Exports Compared with Chile

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <i>Chile</i> | 0.13 | 0.10 | 0.09 | 0.11 | 0.14 | 0.15 | 0.15 | 0.13 | 0.11 | 0.10 | 0.11 | 0.09 | 0.07 | 0.09 | 0.09 | 0.10 | 0.11 |
| United States | 74.9 | 75.1 | 77.2 | 80.3 | 81.2 | 79.2 | 80.9 | 81.8 | 84.8 | 86.7 | 86.9 | 87.0 | 87.1 | 85.7 | 84.4 | 83.8 | 81.6 |
| United Kingdom | 2.4 | 2.1 | 1.9 | 1.6 | 1.5 | 1.5 | 1.5 | 1.3 | 1.4 | 1.4 | 1.4 | 1.3 | 1.1 | 1.6 | 1.9 | 1.9 | 2.3 |
| Japan | 5.5 | 4.9 | 4.6 | 4.5 | 4.3 | 4.6 | 4.1 | 3.7 | 2.7 | 2.4 | 2.2 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| China | 1.1 | 1.4 | 1.4 | 0.9 | 1.0 | 1.3 | 1.1 | 0.8 | 0.8 | 0.7 | 0.9 | 1.1 | 1.0 | 1.3 | 1.6 | 1.6 | 1.7 |
| Mexico | 0.4 | 0.4 | 0.5 | 0.4 | 0.5 | 0.4 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.7 | 0.6 | 0.6 | 0.8 | 0.8 | 1.0 |

Source: Statistics Canada

Table 2: Top 5 Countries of Origin of Canadian Imports as a Percentage of Total Imports Compared with Chile

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <i>Chile</i> | 0.13 | 0.14 | 0.14 | 0.12 | 0.12 | 0.12 | 0.15 | 0.12 | 0.12 | 0.13 | 0.16 | 0.19 | 0.19 | 0.26 | 0.37 | 0.44 | 0.47 |
| United States | 64.5 | 63.8 | 65.2 | 67.0 | 67.7 | 66.8 | 67.5 | 67.6 | 68.2 | 67.3 | 64.3 | 63.6 | 62.6 | 60.6 | 58.7 | 56.5 | 54.9 |
| China | 1.0 | 1.4 | 1.7 | 1.8 | 1.9 | 2.1 | 2.1 | 2.3 | 2.6 | 2.8 | 3.2 | 3.7 | 4.6 | 5.5 | 6.8 | 7.8 | 8.7 |
| Mexico | 1.3 | 1.9 | 1.9 | 2.2 | 2.2 | 2.4 | 2.6 | 2.6 | 2.6 | 3.0 | 3.4 | 3.5 | 3.7 | 3.6 | 3.8 | 3.8 | 4.0 |
| Japan | 7.0 | 7.6 | 7.3 | 6.3 | 5.6 | 5.4 | 4.5 | 4.6 | 4.7 | 4.7 | 4.7 | 4.3 | 4.4 | 4.1 | 3.8 | 3.9 | 3.9 |
| Germany | 2.8 | 2.8 | 2.4 | 2.1 | 2.2 | 2.1 | 2.1 | 2.0 | 2.0 | 2.2 | 2.2 | 2.3 | 2.4 | 2.6 | 2.6 | 2.7 | 2.8 |

Source: Statistics Canada

Table 3: Total Canadian Merchandise Imports by Sector (%)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Agricultural & fishing products | 6 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 6 |
| Energy products | 6 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 5 | 5 | 5 | 6 | 7 | 9 | 9 |
| Forestry products | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Industrial goods & materials | 19 | 18 | 18 | 19 | 19 | 20 | 20 | 20 | 20 | 19 | 20 | 20 | 19 | 19 | 20 | 20 | 21 |
| Machinery and equipment | 32 | 32 | 32 | 31 | 32 | 34 | 33 | 34 | 34 | 34 | 35 | 33 | 30 | 29 | 29 | 29 | 29 |
| Automotive products | 22 | 23 | 23 | 24 | 24 | 22 | 22 | 22 | 22 | 24 | 22 | 21 | 23 | 23 | 22 | 21 | 20 |
| Other consumer goods | 12 | 12 | 13 | 13 | 12 | 11 | 11 | 11 | 12 | 12 | 11 | 13 | 13 | 14 | 13 | 13 | 13 |
| Others | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 |

Source: Statistics Canada, CANSIM Table 228-0043

Table 4: Total Canadian Merchandise Exports by Sector (%)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Agricultural & fishing products | 9 | 9 | 9 | 8 | 8 | 8 | 8 | 8 | 8 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 |
| Energy products | 10 | 11 | 10 | 10 | 9 | 9 | 10 | 10 | 8 | 8 | 13 | 14 | 12 | 16 | 16 | 20 | 20 |
| Forestry products | 15 | 14 | 14 | 14 | 14 | 15 | 13 | 12 | 12 | 12 | 11 | 10 | 10 | 9 | 10 | 9 | 8 |
| Industrial goods & materials | 20 | 20 | 19 | 17 | 18 | 18 | 18 | 18 | 17 | 15 | 15 | 15 | 16 | 16 | 18 | 18 | 21 |
| Machinery and equipment | 18 | 18 | 18 | 18 | 19 | 20 | 21 | 21 | 23 | 22 | 24 | 22 | 21 | 20 | 19 | 19 | 19 |
| Automotive products | 23 | 23 | 24 | 26 | 26 | 24 | 23 | 23 | 24 | 26 | 23 | 22 | 23 | 22 | 21 | 20 | 18 |
| Other consumer goods | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 4 |
| Others | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 6 | 6 | 6 | 6 | 5 | 5 | 4 | 4 |

Source: Statistics Canada, CANSIM Table 228-0043

Table 5: Chilean Exports by Country of Destination as a % of Total Exports

| | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Colombia | 0.8 | 0.8 | 1.0 | 1.1 | 1.3 | 1.3 | 1.4 | 1.3 | 1.3 | 1.4 | 1.6 | 1.4 | 1.0 | 0.9 | 0.9 |
| Brazil | 4.5 | 4.3 | 5.2 | 6.4 | 6.1 | 5.6 | 5.3 | 4.3 | 5.2 | 4.8 | 3.9 | 4.1 | 4.5 | 4.4 | 4.9 |
| Argentina | 4.6 | 6.3 | 5.5 | 3.6 | 4.6 | 4.6 | 5.0 | 4.6 | 3.5 | 3.1 | 1.3 | 1.6 | 1.4 | 1.6 | 1.3 |
| Canada | 0.6 | 0.7 | 0.6 | 0.6 | 0.9 | 0.8 | 1.0 | 1.1 | 1.3 | 1.5 | 1.5 | 2.0 | 2.5 | 2.7 | 2.2 |
| United States | 15.9 | 17.7 | 17.3 | 14.4 | 16.6 | 15.9 | 17.7 | 19.4 | 17.3 | 19.0 | 20.7 | 18.0 | 15.4 | 16.6 | 16.1 |
| China | 2.2 | 1.9 | 1.1 | 1.8 | 2.3 | 2.5 | 3.1 | 2.3 | 4.9 | 5.8 | 7.0 | 9.0 | 10.3 | 11.3 | 8.8 |
| South Korea | 2.4 | 4.4 | 5.0 | 5.4 | 5.6 | 5.8 | 2.6 | 4.3 | 4.4 | 3.2 | 4.0 | 5.0 | 5.8 | 5.7 | 6.1 |
| Japan | 17.3 | 16.2 | 17.0 | 17.7 | 16.2 | 15.7 | 13.3 | 14.3 | 13.8 | 12.1 | 11.0 | 11.1 | 11.9 | 11.7 | 11.0 |
| United Kingdom | 6.2 | 5.9 | 4.5 | 6.5 | 5.8 | 6.2 | 7.9 | 6.8 | 5.8 | 7.0 | 4.6 | 3.5 | 2.9 | 1.7 | 1.2 |

Source: Banco Central de Chile

Table 6: Imports to Chile by Country of Origin as a % of Total Imports

| | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Colombia | 1.1 | 0.9 | 1.1 | 1.0 | 1.3 | 1.1 | 1.0 | 1.2 | 1.2 | 1.2 | 1.3 | 1.2 | 1.3 | 1.2 | 1.0 |
| Brazil | 10.5 | 10.1 | 9.0 | 8.0 | 6.3 | 6.9 | 6.4 | 6.9 | 7.9 | 9.2 | 10.3 | 11.5 | 12.4 | 12.6 | 12.2 |
| Argentina | 6.7 | 5.5 | 8.6 | 9.3 | 9.7 | 10.1 | 11.1 | 14.4 | 17.1 | 18.9 | 19.5 | 21.4 | 18.5 | 16.1 | 12.9 |
| Canada | 1.7 | 1.9 | 2.4 | 2.1 | 2.4 | 2.4 | 2.9 | 2.9 | 3.0 | 2.6 | 2.0 | 1.9 | 1.6 | 1.4 | 1.4 |
| United States | 21.0 | 23.5 | 23.7 | 25.5 | 24.4 | 23.9 | 23.6 | 21.6 | 19.8 | 17.8 | 16.3 | 14.6 | 15.2 | 15.8 | 16.0 |
| China | 1.6 | 2.0 | 2.5 | 2.6 | 3.1 | 3.6 | 4.4 | 4.7 | 5.7 | 6.2 | 7.0 | 7.3 | 8.2 | 8.5 | 10.0 |
| South Korea | 2.6 | 3.3 | 3.0 | 3.5 | 3.3 | 3.3 | 3.2 | 2.9 | 3.2 | 3.3 | 2.8 | 3.1 | 3.1 | 3.6 | 4.7 |
| Japan | 10.2 | 8.4 | 9.0 | 6.8 | 5.6 | 5.8 | 5.8 | 4.5 | 4.2 | 3.5 | 3.5 | 3.6 | 3.6 | 3.4 | 3.3 |
| United Kingdom | 2.0 | 2.0 | 2.2 | 1.7 | 1.7 | 1.8 | 1.5 | 1.3 | 1.1 | 1.2 | 1.2 | 1.0 | 1.0 | 0.9 | 0.9 |

Source: Banco Central de Chile

Table 7: Chile Merchandise Trade by Sector in % (2005)

| | Imports to Chile | Exports from Chile |
|---------------------------|------------------|--------------------|
| Agricultural Products | 6.6 | 24.9 |
| Fuels and mining products | 23.3 | 54.6 |
| Manufactures | 61.6 | 12.7 |

Source: WTO http://stat.wto.org/CountryProfiles/CL_e.htm

Table 8: Top Chile Exports to Canada (2006)

| | % of Total Chilean Imports | Import Market for Product | |
|---------------------------|----------------------------|---------------------------|------|
| | | % | Rank |
| Copper | 38.5 | 26.8 | 2 |
| Fruit and Nuts | 15.1 | 9.6 | 2 |
| Precious Stones and Metal | 11.4 | 3.5 | 4 |
| Ores, Slag and Ash | 10.6 | 6.8 | 3 |
| Fish | 4.8 | 6 | 4 |
| Beverages | 3.7 | 2.3 | 10 |
| Organic Chemicals | 3.7 | 0.9 | 12 |

Source: Statistics Canada

Table 9: Top Canadian Exports to Chile (2006)

| | % Exports to Chile |
|---------------------------|--------------------|
| Machinery | 19.37 |
| Mineral Fuels and Oils | 19.09 |
| Electrical Machinery | 10.13 |
| Cereals | 7.74 |
| Articles of Iron or Steel | 4.75 |
| Plastics | 4.24 |
| Paperboard | 4.17 |

Source: Statistics Canada

Table 10: Canada's International Trade in Services by Selected Countries (millions of CA\$)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Chile | | | | | | | | | | | | | | | |
| Receipts | 34 | 30 | 24 | 37 | 46 | 132 | 87 | 117 | 61 | 56 | 66 | 72 | 165 | 79 | 84 |
| Payments | 11 | 11 | 14 | 21 | 25 | 56 | 42 | 55 | 27 | 37 | 64 | 53 | 86 | 67 | 75 |
| United States | | | | | | | | | | | | | | | |
| Receipts | 12563 | 13013 | 14134 | 16249 | 18815 | 20175 | 22219 | 24901 | 29258 | 32896 | 36601 | 35736 | 36647 | 35098 | 36013 |
| Payments | 20924 | 22922 | 24285 | 26006 | 26913 | 28271 | 30762 | 32897 | 35142 | 38312 | 41686 | 41286 | 41819 | 41599 | 42797 |
| Argentina | | | | | | | | | | | | | | | |
| Receipts | 100 | 68 | 52 | 57 | 61 | 67 | 70 | 65 | 64 | 66 | 86 | 108 | 81 | 73 | 96 |
| Payments | 21 | 23 | 21 | 31 | 39 | 33 | 31 | 56 | 50 | 62 | 53 | 64 | 29 | 30 | 35 |
| Brazil | | | | | | | | | | | | | | | |
| Receipts | 102 | 93 | 89 | 95 | 83 | 186 | 364 | 400 | 429 | 347 | 412 | 360 | 360 | 333 | 378 |
| Payments | 51 | 50 | 52 | 71 | 77 | 81 | 87 | 142 | 194 | 173 | 189 | 207 | 204 | 160 | 120 |
| Colombia | | | | | | | | | | | | | | | |
| Receipts | * | * | 31 | 33 | 35 | 40 | 45 | 40 | 57 | 72 | 64 | 63 | 52 | 56 | 59 |
| Payments | * | * | 27 | 25 | 27 | 28 | 34 | 31 | 36 | 32 | 50 | 48 | 31 | 40 | 35 |
| Canada Total Services Transactions | | | | | | | | | | | | | | | |
| Total Receipts | 22381 | 23324 | 25122 | 28230 | 32750 | 35796 | 39886 | 43756 | 50222 | 53635 | 59718 | 60064 | 62353 | 59521 | 61816 |
| Total Payments | 33018 | 34743 | 37245 | 41840 | 44413 | 45933 | 48961 | 52619 | 56549 | 60272 | 65500 | 67874 | 70055 | 70915 | 74490 |

Source: Statistics Canada, *Canada's International Transactions in Services, 1999 & 2004*

*data not available

Table 11: Chile – Total Authorized Foreign Direct Investment 1974-2006

| | US\$000s | % share |
|-----------------|------------|---------|
| United States | 29,567,871 | 29 |
| Spain | 16,921,619 | 17 |
| Canada | 16,734,099 | 17 |
| United Kingdom | 8,943,340 | 9 |
| Australia | 6,613,234 | 7 |
| Japan | 3,082,514 | 3 |
| Italy | 2,024,278 | 2 |
| The Netherlands | 1,967,979 | 2 |
| Switzerland | 1,922,115 | 2 |
| France | 1,852,391 | 2 |
| Mexico | 1,319,816 | 1 |
| Germany | 1,281,648 | 1 |

Source: Chile Foreign Investment Committee

Table 12: Canadian Direct Investment Abroad by Selected Country (millions of \$CA)

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Chile | 211 | 285 | 447 | 482 | 1225 | 1878 | 2673 | 3281 | 3876 | 4878 | 5049 | 5421 | 6144 | 6639 | 6487 | 5447 | 5673 | 5171 |
| Brazil | 1679 | 1698 | 1545 | 1880 | 1994 | 2312 | 2458 | 3232 | 3155 | 3975 | 4662 | 6667 | 6276 | 6661 | 5734 | 6984 | 8018 | 8244 |
| Argentina | 115 | 123 | 142 | 225 | 419 | 708 | 1335 | 1658 | 2004 | 2972 | 3274 | 5023 | 6002 | 5052 | 4721 | 4783 | 4621 | 3981 |
| Colombia | 25 | 24 | 33 | 32 | 32 | 186 | 272 | 342 | 383 | 759 | 842 | 898 | 820 | 708 | 270 | 394 | 403 | 453 |

Source: CANSIM Table 376-0051 Aug 2007

Table 13: Chile – Total Accumulated Authorized Investment - Mining and Quarrying Industry 1974-2006

| | US\$000s | % share by industry |
|----------------|-----------|---------------------|
| Canada | 6,578,298 | 31 |
| United States | 5,456,101 | 26 |
| United Kingdom | 4,094,393 | 19 |
| Australia | 2,841,728 | 13 |

Source: Chile Foreign Investment Committee

Table 14: Chile - Total Accumulated Authorized Investment - Chemical Rubber and Plastics Industry, 1974-2006

| | US\$000s | % share by industry |
|-----------------|-----------|---------------------|
| Canada | 1,196,223 | 41 |
| United States | 1,014,271 | 35 |
| United Kingdom | 252,707 | 9 |
| France | 92,399 | 3 |
| The Netherlands | 90,753 | 3 |

Source: Chile Foreign Investment Committee

ANNEX 3:

List of Companies and Organizations Interviewed

Baker & McKenzie, Cruzat, Ortúzar & Mackenna
Banff Ltda.
BGC-Avot Ingeniería Ltda.
CAPE S.A.
COASIN Chile S.A.
Dirección de Asuntos Económicos Bilaterales, Ministerio de
Relaciones Exteriores (DIRECON)
Dorr-Oliver Eimco Chile S.A.
Eagle Copters South America S.A.
Eagle Mapping Sudamérica S.A.
Eecol Electric Ltd.
Embassy of Canada in Chile
Fordia Sudamérica Ltda.
Gemcom América Latina
Golder Associates S.A.
Hatch Ingenieros Consultores Ltda.
Interop Chile Consultores de Negocios Ltda.
Latin Telecomunicaciones S.A.
Methanex Chile Limited
NLT Chile Ltda.
Nortel Networks Chile S.A.
Quebecor World Chile S.A.
Rolec S.A.
Scotiabank Sudamericano
Tecno Tip Top (Chile) S.A.

Preliminary Assessment of the Economic Impacts of a Canada-Korea Free Trade Agreement

Dan Ciuriak and Shenjie Chen*

Executive Summary

This document analyzes the possible economic impacts of a free trade agreement between Canada and Korea, negotiations for which were launched on July 15, 2005.

The economic impacts of tariff elimination are assessed based on simulations using a computable general equilibrium (CGE) model known as the Global Trade Analysis Project (GTAP) and version 6 of its database. Five alternative scenarios are simulated based on a range of assumptions concerning the supply-side response of the economy to expanded trade with Korea, including a central scenario incorporating the assumptions best suited for Canada and Korea respectively. The impact of non-tariff elements of a CKFTA, including impacts on bilateral investment flows and services trade, are taken into account only qualitatively. The main findings are as follows:

- Assuming full elimination of tariffs for industrial and agricultural products, Canada's total merchandise exports to Korea in the central scenario would increase by 56 percent. Based on the level of Canadian exports to Korea in 2005 of \$2.8 billion¹, this would represent an export gain of about \$1.6 billion.

* The authors are with the Office of the Chief Economist, Foreign Affairs and International Trade Canada.

¹ All monetary figures are in Canadian dollars unless otherwise noted.

- Canada's merchandise imports from Korea would increase by 19 percent. Based on the 2005 figure of \$5.4 billion, this would represent an import increase of about \$1 billion.
- The value of Canada's gross domestic product (GDP) would increase, although the estimated extent varies considerably based on alternative assumptions about the economy's response to expanded trade with Korea. In percentage terms, the alternative simulations place the gain at between 0.064 percent and 0.268 percent; in the central scenario, the gain is 0.114 percent. Compared to the size of Canada's GDP in 2005 (\$1,369 billion), the corresponding GDP gain ranges between \$0.88 billion and \$3.6 billion across the five scenarios, with the central scenario estimate at \$1.6 billion. The corresponding estimates for Korean GDP gains, compared to the size of Korea's economy in 2005, range between \$0.23 billion (0.024 percent) and \$6.6 billion (0.691 percent) across the five scenarios, with the central scenario estimate at \$0.66 billion (0.07 percent).
- The simulations suggest that Canadian households would derive an economic welfare benefit, scaled to the size of Canada's economy in 2005, between \$266 million under the most restrictive supply-side-response assumptions and \$3.5 billion under the least restrictive assumptions; the central scenario estimate is \$1.1 billion. The simulations suggest that Korean households would experience a small decrease in economic welfare under the most restrictive assumptions, but would gain benefits that would exceed Canada's in the least restrictive scenario.

The CGE simulations likely understate the *potential* economic gains since they reflect only the impact of tariff elimination on merchandise trade; the CKFTA negotiations, however, are addressing a wide range of issues, including trade in goods, rules of origin, customs procedures, trade facilitation, non-tariff measures, cross-border trade in services, financial services, temporary entry, investment, government procurement, competition, intellectual property, e-commerce, dispute settlement and

institutional provisions. In addition, Canada is pursuing environmental and labour cooperation agreements in parallel with the free trade negotiations. At the same time, Canada's trade gains in areas of Korean sensitivity and Korean trade gains in areas of Canadian sensitivity may be constrained in timing or ultimate extent by special provisions that are not known prior to the conclusion of the agreement.

Provisions dealing with non-tariff measures may also affect the estimated impacts in individual sectors. Given these considerations, together with the fact that the impacts are small relative to the size of the Canadian economy and quite sensitive to the specific assumptions made concerning the economy's response to increased trade, the current simulations represent too blunt a tool to provide reliable estimates of the sectoral impacts of the CKFTA. To assess sectoral impacts, specific studies are required, such as the detailed assessment of the Canadian automotive market commissioned by Foreign Affairs and International Trade Canada².

² Johannes Van Biesebroeck, "The Canadian Automotive Market," May 20, 2006

Introduction

This document analyses the potential economic impacts of a free trade agreement between Canada and Korea. The analysis mainly considers the impact of tariff elimination on merchandise trade. The study briefly considers the impacts of liberalization and facilitation of trade in services and investment, in qualitative terms. However, for reasons discussed below, quantification of these impacts was not possible for the purposes of this preliminary report.

Analytic Approach

The main tool used for the analysis is the Global Trade Analysis Project (GTAP) computable general equilibrium (CGE) model, version 6.0³. This model, which is publicly available, runs on a data set that integrates data on bilateral trade flows, trade protection and domestic support together with national input-output tables that describe the sale and purchase relationships between producers and consumers within each economy. This allows the model to generate estimates of the impact of trade policy changes, such as preferential tariff elimination under free trade agreements (FTAs), on trade flows, the level of national economic output (gross domestic product), employment and economic welfare.

CGE simulations alone cannot, however, adequately take into account the breadth of changes resulting from modern FTAs. For example, negotiations between Canada and Korea are being pursued on a wide range of issues, including trade in goods, rules of origin, customs procedures, trade facilitation, non-tariff measures, cross-border trade in services, financial services, temporary entry, investment, government procurement, competition, intellectual property, e-commerce, dispute settlement and institutional provisions. In addition, Canada is

³ For a full description of the model, see Hertel, T. W. (1997). *Global Trade Analysis: Modeling and Applications*, Cambridge: Cambridge University Press.

pursuing environmental and labour cooperation agreements in parallel with the free trade negotiations⁴.

In addition to direct economic impacts in the areas of services trade and bilateral investment flows, these additional features of FTAs should have an impact on trade in goods, over and above that resulting from tariff elimination. For example, trade facilitation reduces non-tariff costs of market access. Similarly, given complementarities between investment and services trade on the one hand and goods trade on the other, measures to liberalize investment and services trade should induce a stronger response of goods trade to an FTA than tariff considerations alone would indicate. As well, FTAs have been suggested to have galvanizing effects on business behaviour; that is, in the context of sunk costs of market entry, the political commitment and the non-tariff facilitative aspects of an FTA can provide extra inducement to business to commit the resources to take advantage of the new market opportunities. On this basis, the estimated increase in bilateral merchandise trade is likely to underestimate the increase.

Several further cautionary notes are required concerning the interpretation of the reported economic impacts. These are set out below.

Caveat: Interpretation of the results

The results of the simulations are best understood as estimates of the *potential* economic impacts of a CKFTA, not as *forecasts* of the actual results. This reflects the following considerations.

First, FTAs typically include provisions to address impacts in sensitive sectors. Thus, with respect to the CKFTA, Canada's trade gains in areas of Korean sensitivity and Korean trade gains in areas of Canadian sensitivity may be constrained in timing or ultimate extent by special provisions that are not known prior to the conclusion of the agreement.

⁴ See DFAIT, Canada-Korea – Free Trade Agreement Negotiations, <http://www.international.gc.ca/tna-nac/rb/korea-en.asp>.

Second, CGE model simulations compare the structure of a given economy at a given point in time, as it was and as it would have been if the simulated policy change were in place with all economic adjustments in response to that policy change already completed. Typically, FTA provisions are phased in to facilitate adjustment; the adjustment path of the economy is not, however, explicitly addressed in this study.

Third, while there is no explicit time dimension in these simulations, the price elasticities that drive the response to tariff changes are based on long-run changes. In other words, the assumed changes would take some time to be reflected in the economy. At the same time, the myriad developments that might influence actual outcomes during the implementation and adjustment period cannot be taken into account; these include importantly technological changes and reorganization of global production patterns that alter the industrial landscape, and trade policy changes such as preferential agreements with third parties involving either Canada or Korea⁵.

Caveat: Sensitivity of the results to model specifications and assumptions

Economic models, to be tractable, necessarily compress an enormous amount of information on the economy into a relatively small number of equations and estimated parameters that represent the stylized behaviour of consumers and producers. By the same token, the results of model simulations can be heavily influenced by the model structure, parameter estimates, the level of aggregation of the data and assumptions made by the modeller as to how to run the simulations (most important,

⁵ For example, since July 2005, Korea has concluded agreements with Singapore, the European Free Trade Association (EFTA) and the Association of Southeast Asian Nations (ASEAN); has concluded negotiations with the United States; and has trade negotiations under way with, among others, the European Union. Canada, meanwhile, is also negotiating free trade with the Central American Four (CA4), EFTA, and Singapore and exploring free trade with the Andean Community, CARICOM, and the Dominican Republic (see "Regional and Bilateral Initiatives" at <http://www.international.gc.ca/tna-nac/reg-en.asp>.)

as discussed below, are the assumptions concerning “closure” of the model).

Choice of Model

The GTAP 6.0 model used for the CKFTA simulations was chosen because it permits the greatest possible sectoral and regional disaggregations. This level of disaggregation is important to reduce aggregation bias in estimating trade impacts but comes at the expense of a number of limiting features: the model is static and assumes perfect competition as well as constant returns to scale in all sectors. The GTAP family of models also includes a dynamic model; unfortunately this model does not include Canada as a separate entity, and hence cannot be used for this study. The GTAP family of models also includes a version with imperfect competition, which is a more appropriate modelling framework for the non-agricultural sectors; however, this model only permits simulations based on three sectors, agriculture, industrial goods, and services. Simulations using the static, perfectly competitive model likely understate the gains in output and economic welfare for a given amount of trade expansion compared to simulations using the dynamic and/or imperfectly competitive versions, all else being equal.

Level of Disaggregation

The simulations were conducted on a fully disaggregated sectoral basis (57 sectors, of which 43 are merchandise). Due to computer capacity constraints, the full level of regional disaggregation (92 countries and/or composite regions) could not be used. For convenience, the simulations were conducted with the global economy disaggregated into 15 regions:

- Canada and Korea;
- the major industrialized economies: the United States, the European Union and Japan;
- within the Western Hemisphere: Mexico, Mercosur, the Caribbean Community and Common Market (Caricom), and the Andean Community;

- within Asia-Pacific: China, India, Singapore and Australia;
- in Africa: the South African Customs Union (SACU); and
- the rest of the world (ROW).

Model Structure

The main technical features of the GTAP 6.0 model are as follows:

- On the production side, the model features nested constant elasticity of substitution (CES) production functions. Land, labour (skilled and unskilled), and capital substitute for one another in a value-added aggregate in the first nest, and composite intermediate inputs substitute for value-added at the next nest. Labour and capital are assumed to be fully employed, mobile across all uses within a country and immobile internationally. On the demand side, there is a regional representative household whose expenditure is governed by an aggregate utility function. This aggregate utility function is of a Cobb-Douglas form allocating expenditures across private consumption, government spending, and savings. Private household demand is represented by a Constant Difference of Elasticities (CDE) functional form, which has the virtue of capturing the non-homothetic nature of private household demands (i.e., demand structure changes with increased income, reflecting the fact that consumption of particular types of goods such as luxury goods increases more with higher income than does consumption of other goods such as staple food products).
- Bilateral international trade flows are modelled based on the Armington hypothesis that goods and services are differentiated by region of origin and are imperfect substitutes. The standard GTAP 6.0 parameter set was used; the key Armington parameters (the elasticities of substitution between products according to country of origin) have recently been updated based on new econometric research. These elasticities are on average lower than those used in

some other models such as the World Bank's Linkage model; the estimated trade and welfare impacts reported here are thus relatively conservative⁶.

Closure

In performing simulations, the modeller must make some choices with regard to which variables in the model are to be exogenous (i.e., fixed at predetermined values specified by the modeller) and which are to be endogenous (i.e., the values for which are solved by the model). Alternative choices represent alternative "closures" of the model. The choice of closure influences the results significantly.

Under the GTAP model's default microeconomic closure, the factor endowments (i.e. the total supply of labour, both skilled and unskilled, as well as of capital and land) are fixed; factor prices (i.e. wages and return to capital and land) adjust to restore full employment of the factors of production in the post-shock equilibrium⁷. Under alternative microeconomic closures that are sometimes used, the return to capital or to labour can be fixed and the supply of capital and/or labour then adjusts to restore equilibrium⁸.

⁶ The comparative static version of the Linkage model produced income gains for industrialized countries under multilateral trade liberalization that were one third larger using the trade elasticities in the Linkage model compared to those in the GTAP 6.0 dataset. See Dominique van der Mensbrugghe, "Estimating the Benefits of Trade Reform: Why Numbers Change," Chapter 4 in Trade, Doha, and Development: A Window into the Issues (World Bank; <http://siteresources.worldbank.org/INTRANETTRADE/Resources/239054-1126812419270/4.EstimatingThe.pdf>); at p. 71.

⁷ This is sometimes described as reflecting a medium-term time horizon in which labour supply is relatively "sticky."

⁸ The closure rule in which the rate of return to capital is fixed is sometimes described as reflecting longer-run "steady-state" growth conditions. For an example of the implications of fixing the return to capital and allowing investment to adjust, see John P. Gilbert, "GTAP Model Analysis: Simulating the Effect of a Korea-U.S. FTA Using Computable General Equilibrium Techniques"; http://www.iie.com/publications/chapters_preview/326/appbiie311x.pdf. Gilbert reports net economic welfare gains for Korea that are 2.7 times larger, and for the U.S. that are

Each of the above closure rules makes an extreme assumption about the supply of labour and/or capital: it is either perfectly elastic or perfectly inelastic. The reality is likely to be somewhere in between.

The GTAP model can be simulated to approximate intermediate values of the elasticity of supply of capital and/or labour. The modeller's assumptions for these parameters, based on empirical evidence drawn from outside the model, then determine how the gains from an FTA are obtained. For example, for labour, the more inelastic is labour supply, the greater the extent to which gains are achieved in the form of wage increases; conversely, the more elastic is labour supply, the greater the extent to which gains are achieved in the form of additional jobs. Similarly, for the economy as a whole, the gains reflect either improved prices or increased output—or some combination of the two—depending on the assumptions about supply-side elasticities established in the chosen closure. Given the sensitivity of the results to the specific assumption made, we report the results of simulations for five alternative closure rules:

- (i) labour and capital supply fixed (the standard or default closure);
- (ii) labour supply flexible, capital supply fixed;
- (iii) labour supply fixed, capital supply flexible;
- (iv) both labour and capital supply flexible; and
- (v) the central scenario, which as described immediately below reflects judgments as to the most appropriate assumptions for Canada and Korea respectively, coupled with the default closure for all other countries or regions:

2.4 times larger, with this closure compared to standard closure. For an example of the use of the labour market closure rule under which the wage rate is fixed, see Joseph F. Francois and Laura M. Baughman, "U.S.-Canadian Trade and U.S. State-Level Production and Employment," in John M. Curtis and Dan Ciuriak (eds.) *Trade Policy Research 2004* (Ottawa: DFAIT, 2004).

- With regard to the long-run supply of labour, the economic literature supports a positive but not infinite supply elasticity—i.e., somewhere between the two extreme assumptions for labour market closures. On the basis of recent empirical evidence, we adopt a labour market closure for Canada and Korea based on fixing the elasticity of labour supply at approximately one⁹.
- With regard to the long-run supply of capital, for Canada, a small open economy that has relatively untrammelled access to capital, the most plausible assumption for capital supply is that it is relatively elastic; this corresponds closely to the steady state closure rule for capital. For Korea, which has in recent memory experienced a major international liquidity crisis and which does not yet have the same degree of institutional development as Canada, we expect the capital supply schedule to be upward sloping; we arbitrarily set the capital supply elasticity at approximately one. From the perspective of the results, this is a conservative assumption since the economic gains for Korea rise steeply with higher capital supply responses¹⁰.

The second aspect of closure is macroeconomic closure. Two approaches are available here: the standard approach with the GTAP model, which is used in the present simulations, is to

⁹ For a discussion of the elasticity of supply of labour see John C. Ham and Kevin Reilly, "Using Micro Data to Estimate the Intertemporal Substitution Elasticity for Labor Supply in an Implicit Contract Model," July 2006; available online at <http://client.norc.org/jole/SOLEweb/hamreilly.pdf>. This study finds statistically significant inter-temporal labour supply elasticities of 0.9 with the Panel Study of Income Dynamics (PSID) data set and 1.0 with the Consumer Expenditure Survey (CES) data set.

¹⁰ This is a well-established result with the GTAP model. See Joseph F. Francois, Bradley J. McDonald and Håkan Norström, "Liberalization and Capital Accumulation in the GTAP Model," GTAP Technical Paper No. 7, July 1996.

allow the current account to adjust to the trade shock, with passive accommodation by international investment flows. The change in the current account implies a change in domestic investment. In the GTAP model, the change in investment is reflected in the profile of final demand, which in turn affects the profile of production and trade but does not feed through into the productive capacity of industries/regions. The alternative macroeconomic closure is to fix the current account, implicitly assuming no international capital mobility; this is a much less realistic assumption for Canada and this option is accordingly eschewed¹¹.

Caveat: Data issues

There are several issues concerning the underlying database for the GTAP simulations.

The base year for the GTAP 6.0 data is 2001; in other words, the model depicts the global economy as it was in 2001, including the size of trade flows, the level of protection and support for trade in the various economies, as well as the size and composition of GDP and other economic variables for each country/region.

The base year for the input-output tables in the GTAP 6.0 data base, however, varies from country to country; for Korea the reference year is 2000 but for Canada it is 1990—in other words, the internal linkages in the Canadian economy as mapped out in the GTAP 6.0 data base reflect the Canadian economy's internal linkages as of 1990, prior to its adjustment to the Canada-U.S. FTA and the NAFTA, the Uruguay Round, China's accession to the World Trade Organization (WTO), and other changes in the domestic and global economic environment since 1990.

¹¹ See Gilbert (op. cit.) for a comparison of the impact of using alternative macroeconomic closures in the context of modelling the U.S.-Korea FTA. The fixed current account simulations substantially reduce the economic welfare gains for Korea (to 3/5 the level of the simulation with flexible current account) and marginally (by 5%) for the United States.

Given the rapidity of economic change in recent years, several steps are taken in the present analysis to make it as up-to-date as possible:

- The measures of trade protection in the GTAP 6.0 database are updated to include the completion of implementation of the Uruguay Round tariff cuts, China's accession commitments to the WTO and the expiry of the WTO Agreement on Textiles and Clothing (ATC)¹².
- The model simulations are otherwise performed with the 2001 base year data in the GTAP 6.0 database (in which values are expressed in 2001 U.S. dollar terms), we also present key data (Canada's imports from and exports to Korea, as well as Canadian GDP and consumer welfare estimates) adjusted for scale and composition to reflect the Canadian economy as it was in 2005, and expressed in 2005 Canadian dollars. This is done simply by applying percentage changes generated in the GTAP model to the corresponding 2005 data. This serves to at least partly take into account the implications of the growth of, and structural shifts within, the economy between 2001 and 2005. In the case of Canada's imports from and exports to Korea, this additional step takes into account some particularly important changes in the product composition of bilateral trade between 2001 and 2005. However, this falls short of a consistent updating of the data to reflect the economy in 2005; the 2005-based estimates are thus indicative only.
- Foreign Affairs and International Trade Canada (DFAIT) is arranging for the updating of the Canadian input-output data in the GTAP database. The present preliminary analysis is, however,

¹² The methodology for updating the protection data is that developed for the World Bank. For a description see Dominique van der Mensbrugge, "Estimating the Benefits of Trade Reform: Why Numbers Change," in World Bank, *Trade, Doha, and Development: A Window into the Issues*; <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/TRADE/0,,contentMDK:20732399~pagePK:148956~piPK:216618~theSitePK:239071,00.html>; at p. 61.

based on the 1990 input-output structure; an update to this report will reflect more up-to-date input-output data, when those become available. The outdated input-output data reduce the level of confidence in the estimated sectoral output changes in the present simulations, since these changes combine the direct impact on sectors of own-tariff changes (e.g., the impact on the steel sector of changes in the tariff on steel) with the indirect impact of changes in production in other sectors induced by the FTA (e.g. steel sector output changes in response to a change in auto production induced by tariff changes on autos), based on the input-output structure as represented in the model. Moreover, the sectoral output numbers reflect the structure of trade in 2001. For these reasons, we do not report detailed sectoral output results since these could be quite misleading, given the significant changes in Canada's economic structure since 1990 and trade since 2001.

Background on the Canadian and Korean Economies

Table 1 sets out summary information on the Canadian and Korean economies.

Korea ranked 11th globally in terms of gross domestic product (GDP) in 2005 with an economy measured at market exchange rates about 70% the size of 9th-ranked Canada's. Measured in terms of gross national income (GNI) at purchasing power parity exchange rates, Korea's economy was slightly larger than Canada's in 2005. Korea's population in 2005 was almost 50% larger than Canada's, resulting in substantially lower levels of per-capita income when compared at purchasing power parity exchange rates, and even more so when compared at market exchange rates.

Like Canada, Korea is a highly open economy, with two-way trade in goods and services equivalent to 82.5% of GDP in 2005 (versus 71.9% for Canada). In 2005, Korea ranked 12th in the world in two-way merchandise trade of \$660.3 billion. However, Korea is much less open in terms of two-way investment than it is in trade: the stock of inward foreign direct investment (FDI) in Korea in 2004 amounted to \$114 billion or 12.9% of Korea's GDP; the stock of

outward investment totalled only \$42 billion or 4.7% of Korea's GDP.

Over time, Korea's industrial structure has come to increasingly resemble the structure of the advanced economies. Compared to Canada, Korea's primary and services sector are smaller, while manufacturing and other industry accounts for a greater share of output than in Canada.

Table 1: Canada and Korea: Summary Statistics, 2005

| | Korea | Canada |
|--|----------|----------|
| Income | | |
| GDP at market prices (C\$ billions) | \$955 | \$1,369 |
| Gross National Income at purchasing power parity (US\$ billions) | \$1,055 | \$1,040 |
| Population (2005, millions) | 47.82 | 32.27 |
| Per-capita GDP at market prices (C\$) | \$19,972 | \$42,423 |
| Per-capita GNI at purchasing power parity (NB: US= \$41,950) | \$21,850 | \$32,220 |
| Trade and Investment | | |
| Exports of goods and services as share of GDP | 42.5% | 37.8% |
| Imports of goods and services as share of GDP | 40.0% | 34.1% |
| Two-way trade in goods and services as share of GDP | 82.5% | 71.9% |
| Outward direct investment as share of GDP (2004) | 4.7% | 35.0% |
| Inward direct investment as share of GDP (2004) | 12.9% | 29.5% |
| Economic Structure: shares of total output* | | |
| Primary (agriculture, forestry, fishery & mining) | 3.7% | 7.2% |
| Secondary (manufacturing, construction & utilities) | 40.0% | 25.1% |
| Tertiary (services) | 56.3% | 67.7% |

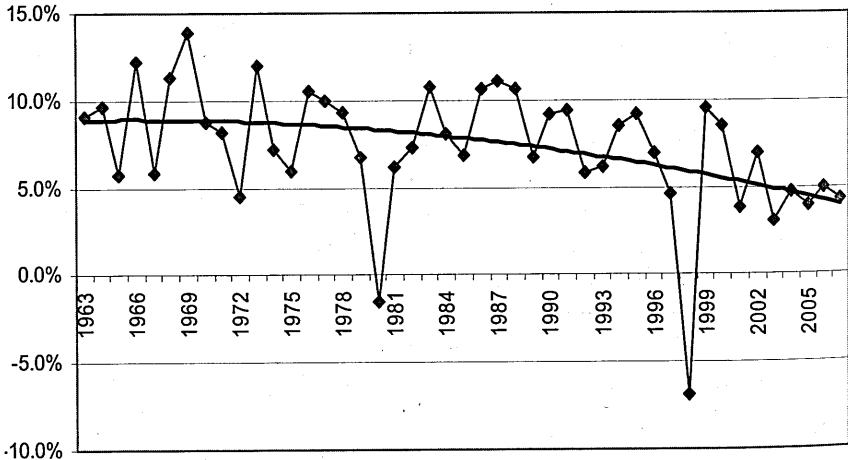
Source: GDP and population figures are from the International Monetary Fund (IMF), *International Financial Statistics*; purchasing power parity data are from the World Bank, *World Development Report 2007*, Table 1; the Canada-Korea exchange rate used to convert Korean won data into Canadian dollars is from the Bank of Canada website; trade and industrial structure data and inward and outward investment are from Korea National Statistical Office and Statistics Canada respectively.

*Shares of GDP at factor cost. For Korea, industrial structure is as of 2005; for Canada as of 2002 based on current dollar GDP shares.

Korea's macroeconomic performance and prospects

Korea's economic growth has slowed from the torrid pace of 8.3% maintained from 1963 through 1996, which served to elevate Korea from an impoverished agrarian economy to OECD membership status in 1996. Since then, a period that includes the steep recession at the time of the Asian Economic and Financial Crisis, Korea has averaged 4.2% real growth; however, in the context of the global upswing from the global recession of 2001, Korea has maintained an average growth rate of 4.7%. Current IMF projections suggest that Korea will maintain a 4.7% pace in 2006-2007 on average¹³.

Figure 1: Trend Real Growth in GDP, 1963-2007



Source: Historical data from the IMF, *International Financial Statistics*; 2006-2007 projections from the IMF, *World Economic Outlook*, September 2006. Trend line is a polynomial trend fitted with Excel.

The short- and medium-term prospects for the Korean economy are broadly positive. Inflation has been moderate (3.3% average CPI growth over 2001-2005 with “core inflation” at 2.2% in mid-2006) and unemployment has been low (average

¹³ International Monetary Fund, *World Economic Outlook*, September 2006.

of 3.7% over 2001-2005 and 3.5% in mid-2006). The external accounts have been in steady surplus since the Asian crisis (including a trade surplus equivalent to 2.5% of GDP in 2005). External debt is moderate (about 25% of GDP in 2005) and fully covered by foreign exchange reserves, which reached US\$228.2 billion in September 2006.

Korea's economic policy posture is essentially neutral. Korea was expected to achieve a modest budget surplus of about 1% of GDP in 2006¹⁴. Korean short-term interest rates rose to the 4% to 5% range in 2006, reflecting some tightening of policy since 2005; however, the yield curve has remained moderately upward sloping.

Bilateral Canada-Korea Economic Relations

In 2005, Korea was Canada's seventh-largest merchandise trading partner. From Korea's perspective, Canada was its 21st-largest trading partner. Two-way merchandise trade is substantial, with Korea in the surplus position by about \$2.2 billion, going by import statistics to measure the bilateral flows¹⁵.

¹⁴ Global Insight, *Quarterly Review and Outlook: Asia-Pacific*, First Quarter 2006.

¹⁵ Trade statistics collected by one country frequently differ from statistics measuring the same trade flow collected by its trading partners. In the case of Canada-Korea trade, a trade data reconciliation exercise conducted on the 2001 and 2002 bilateral trade data indicated that Canada's bilateral deficit and Korea's bilateral surplus were both overstated. The main source of errors in the data was underreporting of exports due to non-filing of export documents and indirect trade (e.g. Canadian shipments to the U.S., which then are sent onwards to Korea might be reported as exports to the U.S. in Canadian statistics, overstating Canada-U.S. trade and understating Canada-Korea trade). As Statistics Canada notes in its comment on the reconciliation exercise "Customs offices are generally more attentive to goods entering the country rather than leaving because of the requirement for tariff assessment and the application of trade agreements. Consequently, import data are usually more reliable than export data." Accordingly, for unreconciled data such as the 2005 figures, the most accurate measure of the balance is on the basis of import-import data. For a fuller discussion see Sandra Bohatyretz, "Tiger by the Tail? Canada's Trade with South Korea," in *Canadian Trade Review*, Statistics Canada Catalogue No. 65-507-MIE, (2004).

**Table 2: Canada-Korea Merchandise Trade, 2005,
C\$ Millions**

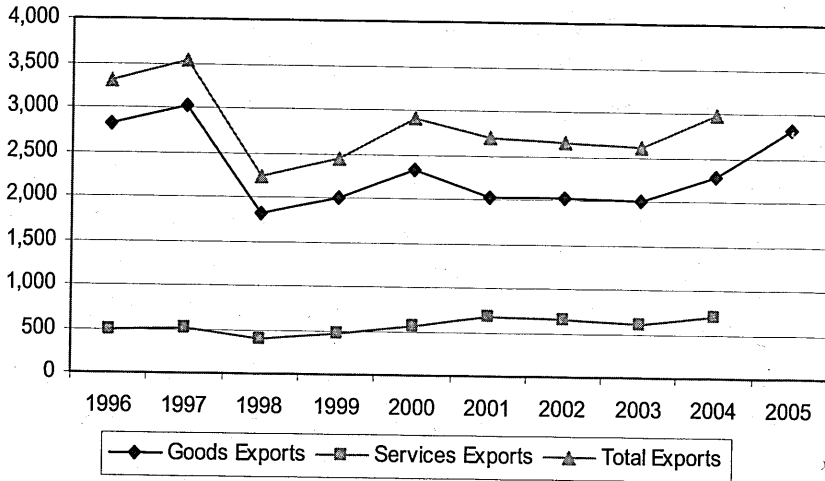
| | |
|----------------------------------|--------|
| Korean Statistics | |
| ○ Exports to Canada | 4,171 |
| ○ Imports from Canada | 3,147 |
| ○ Two-way trade | 7,318 |
| ○ Balance (Korean perspective) | 1,024 |
| Canadian Statistics | |
| ○ Exports to Korea | 2,806 |
| ○ Imports from Korea | 5,374 |
| ○ Two-way trade | 8,181 |
| ○ Balance (Canadian perspective) | -2,568 |
| Import-Import Comparison | |
| ○ Korean Imports from Canada | 3,147 |
| ○ Canadian Imports from Korea | 5,374 |
| ○ Two-way trade | 8,522 |
| ○ Balance (Canadian perspective) | -2,227 |

Source: World Trade Atlas

Following the Asian Economic and Financial Crisis, which resulted in a steep depreciation of the won against the Canadian dollar, Canada's merchandise exports to Korea fell off sharply and remained low for several years. Since 2003, however, they have rebounded strongly. In 2005, Canadian exports were 54% higher than the low point in 1998, although they still have to regain the peak of 1997 (Figure 2).

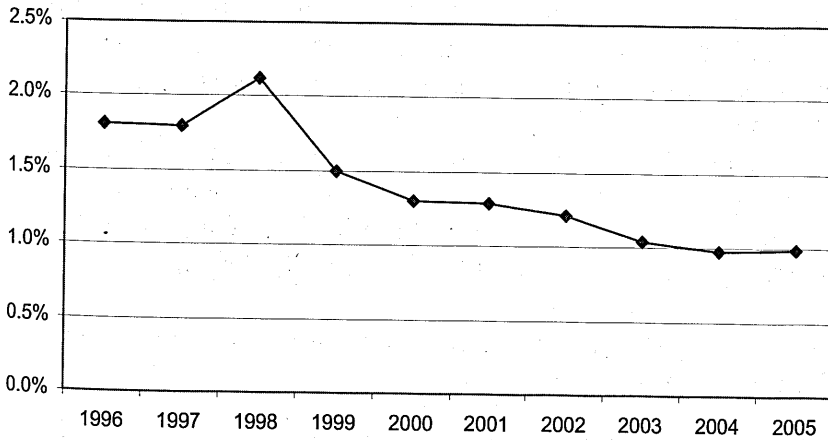
In terms of market share, Canada has witnessed a decline in its share of Korean imports from the 2% range in the mid-1990s to the 1% range (Figure 3). Canada-Korea cross-border services trade has grown in recent years but remains small and flows have been rather volatile from year to year (see Table 3). Of particular note, it is difficult to discern a sustained dynamic expansion in the area of commercial services, the main area for potential gain from a services component in the CKFTA and an area in which trade has been growing very rapidly worldwide in the age of outsourcing, notwithstanding the lack of progress in the multilateral negotiations on trade in services.

**Figure 2: Canadian Exports to Korea
1996-2005, CAD millions**



Source: Statistics Canada

Figure 3: Canada's Share of Total Korean Merchandise Imports



Source: World Trade Atlas

Table 3: Canada-Korea Cross-border Trade in Services, 1996-2004, C\$ millions

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|------|------|------|------|------|------|------|------|------|
| Services Receipts (Canadian exports) | | | | | | | | | |
| Total | 479 | 506 | 400 | 456 | 568 | 681 | 643 | 607 | 706 |
| Travel | 195 | 204 | 109 | 146 | 238 | 284 | 269 | 251 | 273 |
| Commercial services | 180 | 190 | 190 | 182 | 149 | 198 | 192 | 183 | 171 |
| Transport | 105 | 113 | 100 | 127 | 181 | 199 | 182 | 173 | 262 |
| Services Payments (Canadian imports) | | | | | | | | | |
| Total | 257 | 249 | 166 | 176 | 303 | 229 | 216 | 296 | 350 |
| Travel | 60 | 60 | 15 | 27 | 28 | 27 | 31 | 66 | 60 |
| Commercial services | 71 | 74 | 66 | 47 | 140 | 77 | 60 | 125 | 106 |
| Transport | 126 | 115 | 85 | 101 | 135 | 125 | 125 | 105 | 184 |

* Including government services.

Source: Statistics Canada

Overall, Canada has thus experienced an erosion of its share of the Korean market since the mid-1990s. Given Korea's program of free trade negotiations (see footnote 3), Canada's presence in this dynamic East Asian economy is at risk of further marginalization.

While the bilateral investment relationship has been expanding, it remains modest. The stock of Canadian direct investment in Korea was \$779 million in 2005, while the stock of Korean direct investment in Canada was \$364 million.

Simulation Results: Impact of Canada-Korea Merchandise Trade Liberalization

This section describes the impact of tariff elimination on Canada-Korea bilateral merchandise trade and the implications for GDP and economic welfare. The simulation involves full elimination of trade protection as captured in the GTAP database, updated as described above, for all industrial and agricultural

sectors. Two interventions are made to take account of developments affecting the auto and dairy sectors:

- (a) Explicit account is taken of the impact on automotive shipments from Korea to Canada of the establishment of Korean brand auto production in the United States. These "transplants" are assumed to reduce automotive shipments from Korea to Canada by 57.2% compared to the level that otherwise would have been the case.
- (b) The dairy sector impacts are constrained to nil to reflect a WTO dispute settlement ruling that constrains Canadian exports of dairy products and the lack of Korean export capacity.

A detailed discussion of the rationales and methods for these interventions, with supporting evidence, is provided in Appendix 1.

Sectoral Aggregation, Armington Elasticities and Protection Levels

The simulations were run with a full sectoral disaggregation. The definitions of the GTAP merchandise trade sectors are given in Table 4a below, along with the values of the corresponding Armington elasticities of substitution.

The protection data in the GTAP 6.0 database are obtained from Market Access Map (MAcMap), which was produced and is maintained collaboratively by the Paris-based Centre d'Etudes Prospectives et d'Informations Internationales (CEPII) and the International Trade Centre (ITC) in Geneva. The tariff data are compiled at the Harmonized Tariff System 6-digit level and include the *ad valorem* equivalent of specific tariffs and the tariff equivalent of tariff rate quotas (TRQs). The GTAP 6.0 protection data are, however, current only as of 2001; accordingly, as previously noted, these data were updated to take into account the full implementation of the Uruguay Round tariff cuts, China's accession commitments to the WTO, and the expiry of the WTO Agreement on Textiles and Clothing (ATC).

Table 4a: GTAP sectors and Armington elasticities

| | Full GTAP description | Armington Elasticities | |
|------------------------|------------------------------------|------------------------|--|
| | | Domestic vs. Imports | Between alternative sources of imports |
| Rice | Paddy rice | 5.1 | 10.1 |
| Wheat | Wheat | 4.4 | 8.9 |
| Cereal grains | Cereal grains | 1.3 | 2.6 |
| Vegetables & fruit | Vegetables, fruit, nuts | 1.9 | 3.7 |
| Oil seeds | Oil seeds | 2.5 | 4.9 |
| Sugar | Sugar cane & sugar beet | 2.7 | 5.4 |
| Plant-based fibres | Plant-based fibres | 2.5 | 5 |
| Crops | Crops | 3.3 | 6.5 |
| Live animals | Cattle, sheep, goats, horses | 2 | 4 |
| Animal products | Animal products | 1.3 | 2.6 |
| Wool | Wool, silk-worm cocoons | 6.4 | 12.9 |
| Forestry | Forestry | 2.5 | 5 |
| Fishing | Fishing | 1.3 | 2.5 |
| Coal | Coal | 3 | 6.1 |
| Oil | Oil | 5.2 | 10.4 |
| Gas | Gas | 17.2 | 34.4 |
| Minerals | Minerals | 0.9 | 1.8 |
| Bovine meat | Meat: cattle, sheep, goats, horses | 3.8 | 7.7 |
| Meat products | Meat products | 4.4 | 8.8 |
| Vegetable oils | Vegetable oils & fats | 3.3 | 6.6 |
| Dairy products | Dairy products | 3.7 | 7.3 |
| Processed rice | Processed rice | 2.6 | 5.2 |
| Processed sugar | Sugar | 2.7 | 5.4 |
| Food products | Food products | 2 | 4 |
| Beverages & tobacco | Beverages & tobacco products | 1.1 | 2.3 |
| Textiles | Textiles | 3.8 | 7.5 |
| Apparel | Wearing apparel | 3.7 | 7.4 |
| Leather products | Leather products | 4.1 | 8.1 |
| Wood products | Wood products | 3.4 | 6.8 |
| Paper & publishing | Paper products & publishing | 3 | 5.9 |
| Petroleum & coal | Petroleum & coal products | 2.1 | 4.2 |
| Chemical products | Chemical, rubber, plastic products | 3.3 | 6.6 |
| Mineral products | Mineral products | 2.9 | 5.8 |
| Ferrous metals | Ferrous metals | 3 | 5.9 |
| Metals | Metals | 4.2 | 8.4 |
| Metal products | Metal products | 3.8 | 7.5 |
| Motor vehicles & parts | Motor vehicles & parts | 2.8 | 5.6 |
| Transport equipment | Transport equipment | 4.3 | 8.6 |
| Electronic equipment | Electronic equipment | 4.4 | 8.8 |
| Machinery & equipment | Machinery & equipment | 4.1 | 8.1 |
| Other mfg products | Other manufacturing products | 3.8 | 7.5 |

Source: GTAP

Table 4b presents the updated Canadian and Korean bilateral protection data for the GTAP merchandise trade classification¹⁶, along with the 2001 trade levels in the GTAP database on the basis of which the simulations were run. Generally speaking, the size of the trade impact is determined largely by the size of the elasticities and the size of the "wedge" between domestic prices and imports created by protection. As can be seen, Canada has high tariffs (9.9-113.9%) in few product categories, namely dairy, transport equipment, vegetable oils, and textiles and apparel. These products accounted for 13.3% of total Canadian imports from Korea, with textile products accounting for more than half of this total (7.2%). The bulk of Canadian imports from Korea faced duty rates that ranged between 0.1% and 8.6%. Electronic equipment was clearly the most significant sector in this group, representing 28.9% of total Canadian imports, followed by motor vehicles and parts with a trade-weighted tariff rate of 5.9%. Other major Canadian imports from Korea were machinery and equipment as well as chemical products. The duty rates for these products were low.

Korea has much higher levels of protection than Canada. About 0.3% of Canadian exports to Korea faced tariffs ranging between 206.8% and 1,000%. The main Canadian exports in this category were cereal grains (tariff rate of 321.7%) and beverages and tobacco (206.8%). About 7.8% of Canadian exports to Korea faced tariffs of 10.4% to 47.4%. Most products in this category were agricultural and food products, in which Canada has a clear comparative advantage. The majority (71.6%) of total Canadian exports to Korea faced duty rates of 0.1% to 8.1%. Sectors in this category included coal, chemical products, metals, electronic equipment, machinery and equipment, and mineral products. About 20.3% of Canadian exports (pulp and paper products) to Korea were duty-free.

¹⁶ In the simulation, tariffs for sectors with zero trade (e.g. Canadian exports of rice) are set to zero in order to avoid a spurious surge in exports/imports upon tariff elimination. This is consistent with standard practice in GTAP-model simulations.

Table 4b: Canadian and Korean bilateral tariffs & trade weights, GTAP classification

| | Trade-weighted Canadian tariffs, updated (%) | Canadian imports from Korea in 2001 | % of Canadian imports | Trade-weighted Korean tariffs, updated (%) | Korean imports in 2001 (US\$ millions) | % of Korea imports |
|--------------------|--|---|--------------------------|--|--|-----------------------|
| Rice | 0 | 0 | 0 | 1,000.00 | 0 | 0 |
| Wheat | 2.1 | 0 | 0 | 2.2 | 49.5 | 3.2 |
| Cereal grains | 0 | 0 | 0 | 321.7 | 2.6 | 0.2 |
| Vegetables & fruit | 1.1 | 5.8 | 0.2 | 31.4 | 1.6 | 0.1 |
| Oil seeds | 0 | 0.1 | 0 | 33.7 | 0.8 | 0.1 |
| Sugar | 0 | 0 | 0 | 2.9 | 0 | 0 |
| Plant-based fibres | 0 | 0 | 0 | 1.8 | 0 | 0 |
| Crops | 0.5 | 2.1 | 0.1 | 47.7 | 20.9 | 1.3 |
| Live animals | 0 | 0 | 0 | 0.1 | 0.2 | 0 |
| Animal products | 0 | 0.7 | 0 | 3.3 | 38.4 | 2.4 |
| Wool | 0 | 0 | 0 | 3 | 0 | 0 |
| Forestry | 0 | 0.1 | 0 | 2 | 3.8 | 0.2 |
| Fishing | 0 | 0.5 | 0 | 19.7 | 0.1 | 0 |
| Coal | 0 | 0 | 0 | 1 | 225.5 | 14.4 |
| Oil | 0 | 0 | 0 | 5 | 16.4 | 1 |
| Gas | 0 | 0 | 0 | 1 | 16.1 | 1 |
| Minerals | 0 | 0.2 | 0 | 1.4 | 104.5 | 6.7 |
| Bovine meat | 6.5 | 0.1 | 0 | 32.9 | 20.9 | 1.3 |
| Meat products | 9.9 | 0.4 | 0 | 24.5 | 29.6 | 1.9 |
| Vegetable oils | 17.5 | 0.1 | 0 | 14.4 | 6.1 | 0.4 |

| | | | | | | |
|------------------------|------|---------------|------------|----------|---------------|------------|
| Processed rice | 0 | 0.7 | 0 | 1,000.00 | 0 | 0 |
| Processed sugar | 6 | 0 | 0 | 11.9 | 0.4 | 0 |
| Food products | 4.3 | 26 | 0.9 | 15.1 | 31.9 | 2 |
| Beverages & tobacco | 8.6 | 6.8 | 0.2 | 206.8 | 2.6 | 0.2 |
| Textiles | 9.9 | 214.5 | 7.2 | 8.1 | 17.9 | 1.1 |
| Apparel | 16.8 | 161.5 | 5.4 | 10.4 | 2.4 | 0.2 |
| Leather products | 6.1 | 28.7 | 1 | 5.1 | 3 | 0.2 |
| Wood products | 3.6 | 4.8 | 0.2 | 5.7 | 19.3 | 1.2 |
| Paper & publishing | 0 | 15.1 | 0.5 | 0 | 318.2 | 20.3 |
| Petroleum & coal | 0 | 34 | 1.1 | 6 | 4.8 | 0.3 |
| Chemical products | 3 | 187.9 | 6.3 | 3.3 | 182.2 | 11.6 |
| Mineral products | 0.9 | 16.9 | 0.6 | 7.9 | 6.4 | 0.4 |
| Ferrous metals | 0.2 | 113.6 | 3.8 | 3 | 1.2 | 0.1 |
| Metals | 0.1 | 14.6 | 0.5 | 3 | 128.3 | 8.2 |
| Metal products | 2.7 | 85.2 | 2.9 | 7.2 | 6.8 | 0.4 |
| Motor vehicles & parts | 5.8 | 730.8 | 24.6 | 8 | 43.9 | 2.8 |
| Transport equipment | 21 | 17.5 | 0.6 | 2.4 | 49.7 | 3.2 |
| Electronic equipment | 0.1 | 859.4 | 28.9 | 0.6 | 91.8 | 5.8 |
| Machinery & equipment | 0.9 | 400.2 | 13.5 | 5.6 | 109.2 | 7 |
| Other mfg products | 2.3 | 41.5 | 1.4 | 7.2 | 6.4 | 0.4 |
| Total | | 2970.3 | 100 | | 1570.6 | 100 |

Source: Authors' calculation based on the GTAP data.

Given the generally higher tariffs faced by Canadian exporters to Korea than Korean exporters to Canada, the CKFTA would be expected to result in a larger percentage increase in Canadian exports than in Canadian imports. Given Korea's high levels of protection, particularly in the agricultural sector, Canadian exports to Korea would also be expected to be boosted by market share captured from third-country exporters. Such a trade diversion would reduce Korea's economic welfare gains derived from expanded trade with Canada.

Merchandise Trade Impacts

Table 5 sets out the changes in Canada's exports to Korea as a result of tariff elimination on bilateral trade in industrial and agricultural products based on the central scenario for closure.

Based on the 2001 level and sectoral composition of Canada's merchandise exports to Korea, the CKFTA induces an increase of 56% (these results are reported in columns 1 through 3). Applying the percentage changes by GTAP sector to the 2005 level and sectoral trade composition (set out in columns 4 through 6) shows the implications for these results of the changes in Canada-Korea trade levels and composition between 2001, the base year for the GTAP model, and the most recent year for which we have complete sectoral merchandise trade data. Overall, the increase in Canadian exports is at the same at 56%. Based on the 2005 data, the value of Canadian exports to Korea would increase by \$1,581 million¹⁷.

The major export gains are in the primary and processed food sectors, areas where Canada has been making inroads into the Korean market in recent years. Exports of other manufactured goods are boosted to a lesser degree, although the gains are still substantial.

¹⁷ Note: the bilateral trade figures are not significantly influenced by the choice of closure. Accordingly, we report only the results for the central scenario for closure. As shown below, the main impact of alternative closures is on the extent of trade diversion experienced by third countries.

Table 5: Changes in Canada's merchandise exports (f.o.b) to Korea under a CKFTA

| Pre-FTA 2001 US\$ millions (1) | Change in 2001 US\$ millions (2) | % Change (3) | 2005 Base in C\$ mil- lions (4) | Change in C\$ mil- lions (5) | % Change (6) |
|---|---|--------------------|--|---------------------------------------|--------------------|
| Primary sectors & food products (GTAP 1-25) | | | | | |
| 516 | 606 | 117% | 1,296 | 1,177 | 91% |
| Other manufactured products (GTAP 26-41) | | | | | |
| 939 | 211 | 22% | 1,386 | 333 | 24% |
| Total merchandise exports | | | | | |
| 1,456 | 817 | 56% | 2,806 | 1,581 | 56% |

Source: Authors' calculations based on GTAP simulations; central scenario closure. Note: differences in the percentages in column (3) vs. (6) reflect differences in weights and a minor difference in the definition of total merchandise trade in the GTAP database and the total as given by Statistics Canada based on the harmonized system (HS) classification of merchandise trade.

Table 6 sets out the changes in Canada's imports from Korea as a result of tariff elimination on bilateral trade in industrial and agricultural products. Based on the 2001 level and sectoral composition of Canada's merchandise imports from Korea, the simulation results indicate a 29% increase. Based on the 2005 level and sectoral composition, the increase is smaller at 19%; this largely reflects the steep decline in Korean exports of textiles and clothing since 2001. This difference demonstrates the potential sensitivity of the results to the initial conditions reflected in the model database; by the same token, it shows the importance of taking into account significant structural changes that have occurred in the post-base-year period, such as in this case, the major reorganization of global trade in textiles and clothing due to China's emergence and the expiry of the WTO's Agreement on Textiles and Clothing, which resulted in the dismantling of the quota-based system of trade in this sector. Based on the 2005 data, the value of Canadian imports from Korea would increase by \$1,006 million.

In contrast to Canada's export gains, which are concentrated in the primary and food products sectors, Canada's import increases are primarily in the other manufactured goods sectors.

Table 6: Changes in Canada's imports (c.i.f) from Korea as a result of a CKFTA

| Pre-FTA 2001 US\$ millions | Change in 2001 US\$ millions | % Change | 2005 Base in C\$ mil- lions | Change in C\$ mil- lions | % Change |
|---|------------------------------------|-------------|-----------------------------------|--------------------------------|-------------|
| (1) | (2) | (3) | (4) | (5) | (6) |
| Primary sectors & food products (GTAP 1-25) | | | | | |
| 44 | 8 | 18% | 46 | 8 | 17% |
| Other manufactured products (GTAP 26-41) | | | | | |
| 2,926 | 848 | 29% | 4,891 | 19% | 24% |
| Total merchandise exports | | | | | |
| 2,970 | 856 | 29% | 5,374 | 1,006 | 19% |

Source: See Table 5

Trade Creation and Trade Diversion

The relative sizes of the trade creation/diversion effects of a CKFTA in respect of imports and exports are shown in Tables 7 and 8 below. All data in these tables are on the original GTAP 6.0 basis, based on 2001 trade levels and expressed in 2001 U.S. dollars.

Preferential access to a market created by a free trade agreement can lead to both trade creation and trade diversion. A concrete example serves to illustrate these effects. Consider, for example, the substantial increase in Canadian exports to Korea of primary and food products predicted by the model (as shown in Table 5). One such food product is boneless beef, which currently faces a 40% tariff in the Korean market. With the model's assumption of price-sensitive consumer preferences, the elimination of this tariff on Canadian boneless beef imports would necessarily expand demand in Korea for beef, as lower-priced imports from Canada lead to a decline in boneless beef prices in Korea. However, much of the increase in Canadian exports would not reflect the expansion of final demand, but rather the capture of additional market share in Korea. In part, this additional market share would be captured from higher-priced domestic Korean producers; this is trade creation, which drives efficiency-enhancing structural adjustment in the Canadian and Korean economies. However, in

part, the additional market share would be captured from third-party suppliers of beef (e.g. Australia), which would still face the 40% tariff. So while Korean imports of beef from Canada would increase, imports of beef from third parties would fall; this is trade diversion. As discussed below, whereas trade created by the CKFTA leverages economic welfare gains, diverted trade partly offsets these gains.

Table 7: CKFTA Impact on Source of Canadian and Korean Merchandise Imports Under Alternative Closures, in 2001 US\$ millions

| | Labour & capital fixed (i) | Labour flexible, capital fixed (ii) | Labour fixed, capital flexible (iii) | Labour & capital flexible (iv) | Central Scenario (v) |
|----------------------------|----------------------------|-------------------------------------|--------------------------------------|--------------------------------|----------------------|
| Change in Canadian imports | | | | | |
| Korea | 852 | 858 | 859 | 891 | 856 |
| ROW | -538 | -455 | -510 | -161 | -433 |
| Total | 315 | 403 | 349 | 730 | 423 |
| Change in Korean imports | | | | | |
| Canada | 884 | 887 | 887 | 907 | 887 |
| ROW | -442 | -284 | -321 | 445 | -384 |
| Total | 442 | 604 | 566 | 1,352 | 502 |

Source: Authors' calculation

As can be seen in Table 7, the choice of closure impacts significantly on the extent of trade diversion in import markets. The extent of trade diversion is greatest under the most restrictive closure, in which both capital and labour supply are fixed and the gains from trade in the factor markets take the form of increases in wages and returns to capital. The amount of trade diversion is least in the closure scenario in which both labour and capital supply are fully flexible and gains from trade in factor markets are reflected in increases in jobs and capital. The expanded economic activity due to the increased supply of labour and capital generates additional demand for imports from all parties, offsetting the diversion effect of the CKFTA with the third parties. In the case of Korea, the demand for imports when both supplies of labour and capital are allowed to change more

than offsets the trade diversion effect, resulting in a net increase in imports from third parties.

Table 8 below provides a similar comparison of the trade creation and trade diversion effects on the export side.

Table 8: CKFTA Impact on Destination of Canadian and Korean Merchandise Exports Under Alternative Closures, in 2001 US\$ millions

| | Labour & capital fixed (i) | Labour flexible, capital fixed (ii) | Labour fixed, capital flexible (iii) | Labour & capital flexible (iv) | Central Scenario (v) |
|--------|--------------------------------|--|---|-----------------------------------|-------------------------|
| | Change in Canadian exports to: | | | | |
| Korea | 814 | 818 | 818 | 835 | 817 |
| ROW | -466 | -419 | -374 | 37 | -286 |
| Total | 348 | 399 | 443 | 872 | 531 |
| | Change in Korean exports to: | | | | |
| Canada | 816 | 821 | 822 | 853 | 820 |
| ROW | -404 | -287 | -149 | 841 | -333 |
| Total | 412 | 534 | 673 | 1,694 | 487 |

Source: Authors' calculation

As can be seen, the impact of alternative closures on export trade diversion is even greater than on the import side. For both Canada and Korea, the expansion of productive capacity under the least restrictive closure (iv) is sufficient to support not only the expansion of bilateral trade under the CKFTA but also additional exports to third parties. Conversely, under the most restrictive closure rule with fixed supply of labour and capital, a larger part of the bilateral trade stimulated by the CKFTA in fact requires a reduction in Canadian and Korean exports to third parties. This largely reflects the resource constraints that are assumed in this simulation. Productive resources are assumed to be fixed in supply and fully used in the both the pre-FTA context and the post-FTA context. Accordingly, the additional production to support increased exports to the FTA partner must come from increased efficiency of production; insofar as the efficiency gains induced by the FTA are insufficient, the

implication is diversion of shipments from domestic or third-country markets to the FTA partner.

The empirical literature does not offer a consensus opinion on the extent of trade diversion caused by FTAs. The “conventional wisdom” has been that the trade-creation effect has dominated the trade-diversion effects. Direct attempts to measure whether FTAs reduce the amount of trade with third parties using gravity models have generally failed to show significant negative effects, although different studies have reached opposite conclusions on this point¹⁸. Our central scenario, which has only comparatively modest amounts of trade diversion, is thus not out of line with the empirical literature.

Impact on GDP

Table 9 compares the changes in GDP as a result of the CKFTA for Canada, Korea and other trading partners, under the alternative closure assumptions; all data in this table are on the original GTAP 6.0 basis, based on 2001 data and expressed in 2001 U.S. dollars.

For Canada, the simulations suggest the CKFTA would result in an increase in the value of GDP of between 0.064% in the standard closure scenario (labour and capital supply both fixed) to 0.268% in scenario (vi) where both capital and labour supply are flexible. In the central scenario (labour supply elasticity = 1, capital supply flexible), the GDP gain for Canada is 0.114%.

¹⁸ A 2003 study for the Australian Productivity Commission contradicted this conventional wisdom, finding that most FTAs reported to the WTO were trade diverting. See Adams, R., P. Dee, J. Gali, and G. McGuire. 2003. “The Trade and Investment Effects of Preferential Trading Arrangements—Old and New Evidence.” Staff Working Paper. Australia Productivity Commission. Canberra. However, a more recent review of this same evidence using updated trade data reached the opposite conclusion, namely that most FTAs were net trade creating. See Dean A. DeRosa. 2007. “The Trade Effects of Preferential Arrangements: New Evidence from the Australia Productivity Commission.” Working Paper 07-1, Peter G. Peterson Institute for International Economics, Washington, D.C., January 2003.

Table 9: Changes in GDP as a result of the CKFTA under Alternative Closures, Selected Regions, in 2001 US\$ millions

| | Labour & capital fixed (i) | | Labour flexible, capital fixed (ii) | | Labour fixed, capital flexible (iii) | | Labour & capital flexible (iv) | | Central Scenario (v) | |
|-----------|-------------------------------|---------|--|---------|---|---------|-----------------------------------|---------|-------------------------|---------|
| | US\$ | % ch | US\$ | % ch | US\$ | % ch | US\$ | % ch | US\$ | % ch |
| Canada | 460 | 0.064% | 797 | 0.111% | 557 | 0.078% | 1,921 | 0.268% | 815 | 0.114% |
| Korea | 104 | 0.024% | 653 | 0.152% | 462 | 0.108% | 2,963 | 0.691% | 296 | 0.069% |
| USA | -564 | -0.006% | -481 | -0.005% | -448 | -0.004% | 130 | 0.001% | -412 | -0.004% |
| EU | -124 | -0.002% | -132 | -0.002% | -85 | -0.001% | -5 | 0.000% | -89 | -0.001% |
| Japan | -72 | -0.002% | -84 | -0.002% | -33 | -0.001% | 28 | 0.001% | -45 | -0.001% |
| Mexico | 0 | 0.000% | -1 | 0.000% | 1 | 0.000% | -2 | 0.000% | -2 | 0.000% |
| Mercosur | -32 | -0.004% | -30 | -0.004% | -19 | -0.002% | 20 | 0.002% | -27 | -0.003% |
| Caricom | -9 | -0.009% | -8 | -0.007% | -7 | -0.007% | 2 | 0.002% | -8 | -0.008% |
| Andean | -4 | -0.002% | 4 | 0.001% | 5 | 0.002% | 52 | 0.018% | 1 | 0.000% |
| China | -92 | -0.008% | -86 | -0.008% | -81 | -0.007% | -36 | -0.003% | -86 | -0.008% |
| India | -39 | -0.008% | -40 | -0.009% | -36 | -0.008% | -35 | -0.007% | -37 | -0.008% |
| Singapore | 0 | 0.000% | 1 | 0.001% | 1 | 0.001% | 4 | 0.005% | 0 | 0.000% |
| Australia | -32 | -0.009% | -23 | -0.006% | -21 | -0.006% | 32 | 0.009% | -26 | -0.007% |
| SACU | -3 | -0.002% | -2 | -0.002% | -2 | -0.001% | 4 | 0.004% | -3 | -0.002% |
| ROW | -154 | -0.004% | -91 | -0.002% | -93 | -0.002% | 257 | 0.007% | -112 | -0.003% |
| Total | -560 | -0.002% | 478 | 0.002% | 202 | 0.001% | 5,336 | 0.017% | 266 | 0.001% |

Source: Authors' calculation

Applying these percentage changes to the size of Canada's GDP as it was in 2005 (\$1,369 billion), the corresponding range is from \$876 million to \$3.7 billion, with the central scenario estimate at \$1.6 billion¹⁹.

The value of Korean GDP would increase by between 0.024% and 0.691% across the five scenarios, with the central scenario estimate at 0.059%. Scaled to the size of Korea's economy in 2005 (\$955 billion), this amounts to a range of between \$229 million and \$6.6 billion, with a central scenario estimate of \$659 million.

Whereas the trade impacts generated by the model are relatively stable across the alternative scenarios (with the bilateral trade impacts showing almost no sensitivity), the estimated GDP gains vary greatly across the scenarios and thus depend heavily on the assumptions made by the modeler concerning the supply response of the economy to the incentives created by liberalized trade.

Empirical estimates of the relationship between expanded trade and economic activity suggest a strong impetus to GDP growth but overall smaller gains in GDP than in trade: "Research reported elsewhere ... using a variety of alternative techniques, suggests that annual GDP gains to each partner would amount to 20% of the expanded [bilateral] trade... These gains reflect the adoption of improved production methods in response to competitive pressures, the exit of less efficient firms, scale and network economics, reduced mark-up margins, more intensive use of imported

¹⁹ These figures are not significantly impacted by the change in the expenditure composition of Canada's GDP between 2001 and 2005. A rough check on this can be made by applying the percentage changes generated in the model simulation for individual components of GDP (i.e. consumer expenditure, investment, government spending, exports and imports) to the levels of these GDP components in 2005 and recalculating the total GDP change. Taking this into account marginally reduces the gain in scenario (i) from \$880.8 million to \$872.9 million.

218

inputs, and greater variety in the menu of available goods and services.”²⁰

Applying this rule of thumb to the estimated increase in the trade share of GDP for Canada and Korea generated in the central scenario closure scenario, the implied GDP gain would equal about \$276 million for Canada and \$504 million for Korea. The estimated GDP gain for Korea in the central scenario matches up well with this simple rule of thumb; the gain for Canada is, however, substantially higher.

In considering the plausibility of the size of the estimated GDP gain for Canada, we take note of the following two considerations:

- Given the structural features of the Canadian and Korean economies that would be affected by an FTA, the GTAP simulations show higher gains for GDP for Canada than for Korea under all the alternative closures, save for that where the constraints on both labour and capital are fully relaxed (iv)²¹.
- The estimated GDP gain for Canada is estimated to be substantially larger (\$876 million) in the most restrictive closure scenario in which trade diversion effects are very large. The estimated GDP gain inferred from the rule of thumb would therefore require an implausibly larger trade diversion effect.

²⁰ Dean DeRosa and John Gilbert, “Estimates from Gravity and CGE Models,” Chapter 8 in Gary Clyde Hufbauer and Richard E. Baldwin, “The Shape of a Swiss-U.S. Free Trade Agreement,” *op cit.*; at p. 238.

²¹ For both Canada and Korea, the GDP gains under the least restrictive closure rules (iv) are much bigger than those under the scenarios (ii)-(iii) and (v). This may be understood intuitively on the following basis. When a constraint is imposed on one of primary production factors (labour or capital), economic growth is subject to diminishing returns. When the constraints on all primary factors are removed under the scenario (iv), however, the economy expands under constant returns to scale, which generates a greater GDP impact.

On these grounds, we conclude that the estimated GDP impact for Canada, which is larger than Korea's gain, and is consistent with only modest degrees of overall trade diversion, is in the right ballpark.

For most third parties, the proposed CKFTA is estimated to have a negative impact on GDP under the restrictive standard closure (i). However, the size of the negative impacts diminish as the constraints on the production capacity in both Canada and Korea are relaxed under less restrictive closure rules (ii)-(iii) and (v), and turn into positive gains for many regions under the least restrictive scenario (iv). For instance, the United States is shown to have a reduction of GDP by US\$564 million under the standard closure rule; however, in the least restrictive scenario (iv), it has a positive GDP gain of US\$130 million. Under the central scenario, the GDP impacts on third parties are, for the most part, negative but negligible; and global GDP impacts are overall modestly positive, dominated by the gains experienced by Canada and Korea. This latter outcome is consistent with the positive association between trade liberalization and global growth.

Impact on Household Economic Welfare

The most widely reported measure of the economic benefits or costs of a policy change in computable general equilibrium model simulations is known as "equivalent variation"; this is the amount of money that would make the household sector as well off in the pre-policy shock scenario as in the policy shock scenario²².

Table 10 reports the economic welfare gains generated in the simulation for Canada, Korea and other countries/regions, broken down into three main components:

²² This measure is technically Hicksian equivalent variation calculated using pre-shock prices.

- (a) Changes in allocative efficiency that arise from the reallocation of production inputs (labour and capital) to their most effective applications induced by the reduction in the level of tariff distortions in the FTA partner economies.
- (b) Changes in the terms of trade (the ratio of export to import prices) induced by the impact of the FTA on prices of goods and services in each country.
- (c) Changes in the availability of factor endowments such as labour and capital induced by the FTA under alternative scenarios. This applies to Canada and Korea only; in other regions, the supply of labour and capital in other countries remains fixed.

For purposes of this international comparison, the data are presented in terms of the original GTAP data – i.e., in 2001 US\$ scaled to the size of the various economies in 2001.

As in the case of the GDP impacts, the estimated economic welfare gains vary considerably across the alternative closure scenarios. The simulations suggest that Canadian households would derive an economic welfare benefit of between US\$143 million and US\$1.9 billion, with our central scenario estimate at US\$586 million. Scaled to the size of Canada's economy in 2005, the corresponding range is between \$266 million under the most restrictive assumptions and \$3.5 billion under the least restrictive assumptions; the central scenario estimate is \$1.1 billion²³.

²³ The scaling up from 2001 US\$ figures to 2005 C\$ figures is done as follows: the GTAP figure for equivalent variation for Canada of \$143.1 million in 2001 US\$ is 0.035% of 2001 consumer expenditure. Applying this percentage to consumer expenditure of \$760,380 million in 2005 yields the above estimate of equivalent variation in 2005, expressed in C\$. The other figures are calculated in like fashion.

Table 10: Regional Household Economic Welfare Impacts, in 2001 US\$ millions

| | Labour & capital fixed (i) | Labour flexible, capital fixed (ii) | Labour fixed, capital flexible (iii) | Labour & capital flexible (iv) | Central Scenario (v) |
|-----------------------|-------------------------------|--|---|-----------------------------------|-------------------------|
| Canada (total) | 143 | 514 | 280 | 1,868 | 586 |
| Allocative efficiency | 15 | 192 | 57 | 753 | 192 |
| Terms of trade | 139 | 129 | 113 | 8 | 90 |
| Endowment | 0 | 203 | 117 | 1,103 | 308 |
| Korea | -2 | 632 | 321 | 2,979 | 201 |
| Allocative efficiency | -74 | 62 | -10 | 545 | -32 |
| Terms of trade | 87 | 54 | 33 | -202 | 70 |
| Endowment | 0 | 525 | 308 | 2,611 | 176 |
| U.S. | -130 | -118 | -104 | 2 | -92 |
| Allocative efficiency | -7 | -8 | -8 | -13 | -8 |
| Terms of trade | -111 | -97 | -86 | 28 | -73 |
| ROW | -121 | -95 | -70 | 110 | -101 |
| Allocative efficiency | -44 | -51 | -37 | -38 | -43 |
| Terms of trade | -115 | -85 | -61 | 166 | -86 |
| Total | -110 | 922 | 427 | 4,960 | 594 |
| Allocative efficiency | -110 | 194 | 3 | 1,247 | 110 |
| Terms of trade | 0 | 0 | 0 | 0 | 0 |
| Endowment | 0 | 728 | 424 | 3,713 | 485 |

Note: Allocative efficiency, terms of trade, and endowment effects do not add exactly to the total. The GTAP welfare calculation also includes a term that reflects the price differentials between saving and investment.

For Korea, the results range from a negligible loss under the most restrictive closure scenario to a gain of almost US\$3 billion in the least restrictive scenario²⁴. Most other regions, and the global economy as a whole, would incur losses due to trade diversion under the most restrictive scenario; however, the outcomes for third parties improve sharply under less restrictive scenarios; for the global economy as a whole, economic welfare improves as resource constraints in Canada and Korea are relaxed.

²⁴ The small decline in household economic welfare for Korea in the most restrictive scenario contrasts with the gain in GDP reported earlier for the same scenario. This result reflects the fact that GDP gains are reported taking into account the relative price changes induced by the FTA while equivalent variation, the measure of household economic welfare, does not take these price changes into account. Since Korea experiences terms of trade gains but allocative efficiency losses the choice of post-shock versus pre-shock prices in doing such a calculation can result in one measure being positive and the other negative if both are relatively close to zero.

With regard to the sources of gains/losses, this is influenced heavily by the closure assumption. If capital and labour are fixed, as they are in scenario (i), increased demand largely results in increases in wages and in returns to capital; these higher factor costs are passed on in the form of higher prices which are reflected in the model's accounting as terms of trade gains. In scenarios in which higher factor prices induce greater labour and capital supply, the smaller become the net increases in wages and returns to capital; in welfare accounting, the gains attributed to terms of trade decline while the gains attributed to increases in allocative efficiency and endowments increase. Under the least restrictive scenario (iv), the endowment effect overwhelms all other gains, accounting for roughly 60% and 80% of the total welfare gains for Canada and Korea, respectively.

How Canada and Korea derive benefits from the CKFTA (i.e. whether largely in the form of improved terms of trade or in the form of improved allocative efficiency and/or increased endowments) determines whether the impact on the rest of the world is positive or negative. This can be understood intuitively on the following basis: since one region's export prices are another region's import prices, global terms of trade impacts must net out to zero. Accordingly, improved terms of trade for Canada and Korea necessarily translate into terms of trade deterioration in the rest of the world combined²⁵. Scenarios in which Canada and Korea extract gains in the form of terms of trade improvement thus are necessarily worse for the rest of the world

²⁵ The widespread losses in terms of trade in the most restrictive closure scenario reflect the loss of exports to Canada and Korea due to preference erosion. Since most countries have exports to Canada and Korea, they all tend to be affected in this manner. Mechanically, the loss of exports to Canada and Korea results a price decline of production in other countries to restore equilibrium; this is only partially offset by the extent to which Canadian and Korean imports are reduced (since these imports are also higher priced in the shock scenario) and replaced by domestic production abroad or from third-party imports. The Armington assumption is an essential factor here: the imperfect substitutability of goods according to location of production allows relative increases in prices of Canadian and Korean products—if there were perfect substitutability, competitive forces would negate these terms of trade effects.

than scenarios in which the gains come in the form of improved allocative efficiency and/or increased supply capacity.

The estimated economic welfare gains for Canada in the central scenario (\$1.1 billion) are broadly consistent with the size of the gain in GDP (\$1.5 billion) and the size of the incremental bilateral trade flows (\$2.6 billion). The gains for Canada are greater than for Korea; this is to be expected since the negative welfare impacts of trade diversion for Korea should be greater given the overall higher level of tariffs.

Trade In Services

A specific estimate of the impact of services trade liberalization under the CKFTA is not provided in this study. This reflects the following considerations.

First, the General Agreement on Trade in Services (GATS), which provides the framework for the liberalization of international trade in services, classifies trade in services into 155 service types and four modes of supply:

- (a) Cross-border supply: a service is supplied from a supplier's country of residence to a consumer's country of residence.
- (b) Consumption abroad: a service is supplied through the movement of a consumer to a supplier's country of residence.
- (c) Commercial presence: a service is supplied through the movement of a commercial organization to a consumer's country of residence.
- (d) Presence of natural person: a service is supplied through the movement of a natural person to a consumer's country of residence.

Barriers to trade in services can be put in place in each of the four modes of supply. The measurement of barriers to services trade thus involves quantifying the trade restrictive effect of a wide variety of domestic regulatory measures, which indirectly affect trade in all four modes. Unlike the case of mer-

chandise trade, for which there exists a comprehensive and reasonably reliable data set describing the height of border barriers, a comprehensive database on the barriers to Canada-Korea services trade does not exist²⁶. By the same token, it is not possible to obtain an estimate of the complete elimination of trade barriers, as was done above for goods trade. An estimate of the services component of the CKFTA would require before-the-fact knowledge of the specific measures that would be subject to liberalization, and this is not available.

Second, given the various alternative modes for trade in services, companies will tend to choose the path of least resistance—e.g., opting for commercial presence (mode 3) over cross-border provision (mode 1), or vice versa, depending on which approach is less costly in terms of regulatory compliance. It follows that liberalizing one mode (e.g. cross-border trade) in a context in which another mode is relatively unimpeded (e.g. commercial presence through inward FDI) may yield little in the way of impacts since firms will have already committed resources to the path of least resistance. In other words, there is as much uncertainty about the market response to a change in a restrictive measure as there is about the quantification of the measure's restrictive force.

Third, there are equivalent difficulties to evaluating the liberalizing effect of specific negotiated changes to domestic regulations to the difficulties involved in estimating the overall trade-impeding effect of the regulatory framework.

Several elements of the negotiation agenda address services trade in one mode or another: financial services, cross-border

²⁶ For a detailed review of the issues facing the quantification of services trade barriers and estimating the impact of services trade liberalization, with specific reference to the Canadian context, see the trio of articles in Part II of John M. Curtis and Dan Ciuriak (eds.) *Trade Policy Research 2002* (Ottawa: Department of Foreign Affairs and International Trade, 2003): Brian R. Copeland, "Benefits and costs of trade and investment liberalization in services: Implications from trade theory"; Zhiqi Chen and Lawrence Schembri, "Measuring the Barriers to Trade in Services: Literature and Methodologies"; and Shenjie Chen, "Trade and Investment in Canada's Services Sector: Performance and Prospects."

trade in services, investment and temporary movement of persons. Other elements of the negotiations that facilitate international commerce could also be expected to impact to some extent on the ease of conducting services trade between Canada and Korea. Absent specific estimates, it can be inferred that the results for merchandise trade understate the total trade impact, the impact on GDP and the impact on consumer welfare.

Investment Liberalization

The GTAP scenarios elaborated above do not take into account measures that might be included in a CKFTA to liberalize or facilitate direct investment. To take into account the impact of investment liberalization, a dynamic CGE model that includes FDI is required. Such a model is being developed for Canada but is not yet available. At present, it should be noted that the potential to expand two-way direct investment between Canada and Korea appears to be reasonably strong, particularly with regard to Canadian direct investment into Korea. This can be inferred from an index measuring the overall level of investment restrictiveness in the two countries in terms of tax equivalents. For Canada, restrictions on inward FDI from the FTAP model database²⁷ are evaluated to be equivalent to a 6.11% tax on foreign affiliates' capital; the equivalent figure for Korea is 22.01%.

Absent specific estimates, it can be inferred that the GDP and consumer welfare impacts reported above deriving from merchandise trade liberalization likely understate the extent of gains in these areas from such investment liberalization as might be forthcoming pursuant to the CKFTA.

²⁷ For background on the FTAP model and data see, Australian Productivity Commission "The Structure of the FTAP Model" at <http://www.pc.gov.au/research/rm/ftap/index.html>.

Appendix 1: Sectoral Interventions

This appendix sets out the analytical basis for adjustments to the simulations to take into account structural or institutional developments that have implications for the response of two sectors in the economy—automotive and dairy—to a CKFTA.

Automobiles and auto parts

(Trade data for this category of products are under HS8407-8409, HS860900, HS87)

Since 2001, the base year for the GTAP model, Korean auto assemblers have greatly expanded their sales in North America, including in Canada, and as a result two Korean firms have made the strategic decision to begin production in North America to serve the North American market. As noted in a study on the auto sector commissioned by the Department of Foreign Affairs and International Trade, "...[t]he next investor in North American assembly plants will be Hyundai, which recently opened a plant in Alabama. Early 2006 it decided on a site in Georgia for its Kia subsidiary, nearby its Hyundai plant in Montgomery, AL so it can share suppliers for its two plants. Further capacity expansions are highly uncertain; the viability of the Kia plant already relies on a very ambitious sales projection and the Alabama plant will take some time to ramp up its production to its full capacity of 300,000 vehicles per year."²⁸

As background, Canada's imports of automotive products from Korea totalled \$1.7 billion in 2005 up by about 55% from \$1.1 billion five years ago. Imports of assembled vehicles (almost entirely passenger automobiles) rose by about 50% in this period while imports of automobile parts grew even faster, by

²⁸ Johannes Van Biesebroeck, "The Canadian Automotive Market," May 20, 2006; p 75. According to updated information, Hyundai production in North America is slated to grow from 91,218 units in 2005 to the 450,000 range by 2012. The Kia plant has since been confirmed, with production slated to start in 2010 building to about 250,000 units by 2012. Source: Ward's AutoInfoBank.

174%, albeit from a relatively low base. Table A1 breaks down the growth in vehicle imports from Korea by firm.

Table A1. Sales of Korean Light Vehicle Imports in Canada

| Company | 2001 | 2002 | 2003 | 2004 | 2005 | % Share in 2005 |
|---------|--------|--------|--------|---------|---------|--------------------|
| Daewoo | 1,567 | 403 | 0 | 0 | 0 | 0.000 |
| GM | 0 | 0 | 1,777 | 38,094 | 36,090 | 0.283 |
| Hyundai | 56,166 | 66,917 | 65,378 | 58,666 | 63,061 | 0.494 |
| Kia | 26,013 | 29,014 | 30,523 | 26,409 | 28,286 | 0.222 |
| Suzuki | 0 | 0 | 31 | 626 | 236 | 0.002 |
| Total | 86,746 | 96,334 | 97,709 | 123,795 | 127,673 | 1.000 |

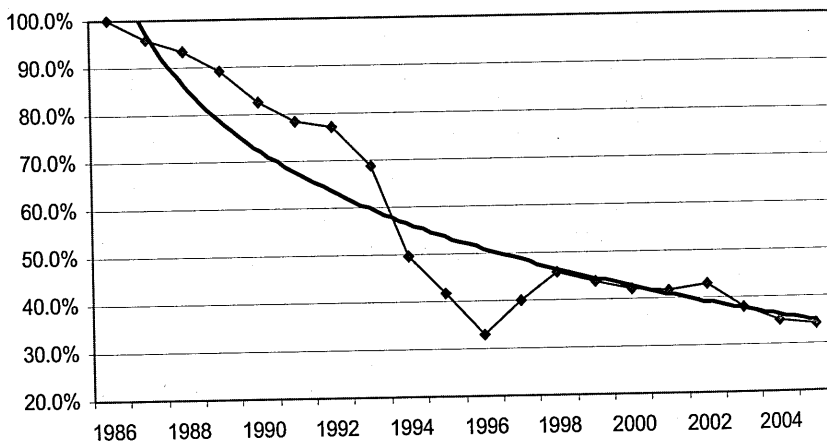
Source: Industry Canada, "Partial Equilibrium Analysis of the Impact of a Canada-Korea FTA on the Canadian Automotive Industry"; citing information obtained from Ward's AutoInfoBank.

Insofar as Canadian demand for particular models is satisfied from these new U.S. plants, this market segment would not be impacted by the CKFTA. The best information available at the present time to assess the implications of the Korean "transplants" on vehicle sourcing is the prior experience of the most comparable suppliers, namely the Japanese auto firms. The following figure describes the sourcing patterns for Canadian sales of Japanese transplants in North America.

As shown, Japanese firms that established plants in North America progressively shifted the bulk of their assembly of units for sale in Canada to their North American operations. Note that the "undershoot" from 1994 to 1997 coincided with a period of very high values for the yen and sharply lower volumes of imports from Japan as well as of total sales of Japanese brands in Canada; subsequently, as volumes picked up as the extent of yen over-valuation eased, the share sourced from Japan resumed a more gradual decline. The trend appears to be flattening out in the 30% to 40% range. This result does not appear to depend upon where in North America the plants are lo-

cated: the pattern of sourcing of Toyota, which has capacity in Canada, is similar to that of Nissan, which does not²⁹.

Share of Japanese Autos Sold in Canada Imported from Japan, 1986-2005



Source: Ward's AutoInfoBank . Trend line is a logarithmic trend fitted using Excel spreadsheet.

The early results from the Hyundai plant in Montgomery, Alabama are consistent with the Japanese patterns: within the first year and half of production, the share of Canadian sales accounted for by North American assembled units has risen to over one quarter and is on a steeply rising trend from month to month. A private-sector forecast projects this share to rise to about 65% by 2012³⁰.

The advent of Korean transplants in North America raises a number of issues for the analysis of a CKFTA. Insofar as Korean transplants do not satisfy NAFTA rules of origin, their importation into Canada from the United States attracts the MFN tariff. However, such a state of affairs is likely to be transi-

²⁹ According to Ward's AutoInfoBank, the share of Nissan automobiles sold in Canada directly imported from Japan declined from 99.9% in 1990 to 33.2% in 2005.

³⁰ Source: Wards Automotive Infobank.

tional, with the transplants organizing their production to meet NAFTA rules of origin, just as the Japanese firms have done. Importantly, this means that automotive parts production for Hyundai and Kia North American vehicles is likely to shift to their North American production centres³¹. Once that happens, the impact of tariff elimination on Korean-brand auto sales in Canada would be limited to models shipped from Korea.

Based on the average Japanese transplant experience and forecast data for Hyundai-Kia North American production, we assume that only 35% of the units sold in Canada would be shipped from Korea; the rest would be assembled in North America. Since Hyundai and Kia account for only 71.6% of assembled vehicles imported into Canada and assembled vehicles account for only 92% of the value of Korean imports, this implies that only 57.2% of the Korean export base to Canada benefits from tariff elimination³². To reflect the impact of tariff elimination in the presence of Korean transplant operations in North America, we therefore reduce the effective protection rate in the GTAP database by 57.2%, from 5.8% to 2.5%.

³¹ A number of major Korean suppliers have already located near the Alabama plant, following the pattern of the Japanese suppliers.

³² The calculation is as follows: Hyundai and Kia accounted for 71.5% of Korean auto imports into Canada in 2005 by number of units. Assuming the non-Hyundai-Kia production destined for Canada (which accounted for 28.5% of Korean auto imports in 2005) remains in Korea, the level of Korean-sourced units sold in Canada in the post-transplant "equilibrium" as a share of the pre-transplant level is then $.716 \cdot .35 + .284 = .535$. Autos account for 92% of Korean shipments to Canada and parts 8%; accordingly the value of Korean total automotive shipments in the post-transplant "equilibrium" as a share of the pre-transplant automotive shipments = $.535 \cdot .92$ plus $.08 = .572$. In the GTAP 6.0 database, the trade weighted tariff rate for Canada's imports of Korean automobile products was 5.8%. The FTA impact is then calculated by reducing the level of border protection by 57.2% from 5.8% to 2.5%.

Dairy products

(Trade data for this category of products are under HS40, HS170211, HS170219, HS210500 and HS350110)

Both Canada and Korea impose high tariffs on the imports of dairy products. The GTAP 6.0 database reports 113.9% for the weighted Canadian import tariff on dairy products and 47.7% for Korea, after taking into account the conventional *ad valorem* tariffs, *ad valorem* equivalents of specific rates, mixed and compound rates, as well as the effective protection provided by tariff rate quotas (TRQs). A simulation of tariff elimination in this sector would result in very large boosts to bilateral trade, as shown in Table A2.

Table A2. CKFTA Impact on Trade in Dairy Products

| Pre-FTA 2001 US\$ millions | Post-FTA, 2001 US\$ millions | Change in 2001 US\$ millions | % Change | Change scaled to 2005 in C\$ millions |
|----------------------------------|------------------------------------|------------------------------------|-----------|---|
| Exports to Korea | | | | |
| 7.0 | 93.1 | 86.2 | 1,239.6% | 186.3 |
| Imports from Korea | | | | |
| 0.5 | 121.8 | 121.3 | 22,888.7% | 87.5 |

Source: Authors' calculations

Neither estimated effect appears to be credible. While Canada has the export capacity to fill the simulated growth in demand from Korea and some established presence in the Korean market³³, Canada's exports of dairy products are subject to WTO constraints. In a WTO challenge to Canada's exports of dairy products under the system of supply management, New Zealand and the United States successfully argued that exports of dairy products from Canada were subsidized and should

³³ In 2005, Canada exported \$279 million worth of dairy products, of which \$149 million went to the U.S. Exports to Korea amounted to only \$9 million, or about 3.5% of total Canadian exports of dairy products; of this total, \$7.9 million were products consisting of natural milk constituents, and the remaining \$1 million were cheese and ice cream.

count against Canada's WTO commitments to reduce subsidized agricultural exports³⁴. In response to the original Canada-Dairy panel and Appellate Body reports, the Canadian supply-management system was modified to exclude export milk from the domestic management scheme. However, in a subsequent challenge to this regime, the WTO determined that this scheme did not bring Canada into compliance with its obligations under the Agreement on Agriculture; even exports based on milk excluded from the domestic management system were deemed to benefit from subsidies, and thus must count against Canada's allowed amount of subsidized exports³⁵. This ruling effectively constrains Canada's exports of dairy products outside of the allocated quotas, restricting any response to a CKFTA.

With regard to Canadian imports, imports of fluid milk are restricted under Canada's negotiated Uruguay Round commitments to milk for household use and subject to a tariff rate quota. Since fluid milk is not traded over large distances because of its weight, for practical purposes the tariff rate quota on fluid milk applies only to the United States for cross-border purchases of milk. Otherwise, imports of dairy products are in the form of constituent milk components and processed foods such as cheese, yoghurt, ice cream, etc. Any Korean expansion of exports to Canada would have to be in these categories.

As shown in Table A3 below, Korea is a major net importer of most dairy products and has minimal exports in any dairy category save for a handful of speciality products in the category of "buttermilk, yogurt, kephir etc, flavoured etc or not," in which in fact it is a small net exporter. Shipments to Canada are minimal. The 15-fold expansion of Korea's worldwide dairy exports implied by the GTAP simulation would appear to require unrealistic supply-side responses in Korea.

Without pre-judging what might be negotiated in a CKFTA with regard to trade in dairy products, for the purposes of the

³⁴ For a review of the case history, see Report of the Panel, *Canada – Measures Affecting the Importation of Milk and the Exportation of Dairy Products*, WT/DS103/RW, WT/DS113/RW, 11 July 2001, p. 11, para 3.2.

³⁵ *Ibid.*, p. 66, para 7.2.

present assessment this sector is excluded on the basis that the GTAP estimates indicate an implausibly large effect and there is no information on hand on which otherwise to base an assessment of dairy trade as it might be affected by a CKFTA.

Table A3: Korea's Trade in Dairy Products with the World, US\$ millions

| HS | Exports | 2004 | 2005 | 2006 |
|------|--|--------|--------|--------|
| 0401 | Milk and cream, not concentrated or sweetened | 0.05 | 0.02 | 0.00 |
| 0402 | Milk and cream, concentrated or sweetened | 0.22 | 0.57 | 0.48 |
| 0403 | Buttermilk, yogurt, kephir etc., flavoured etc. or not | 4.17 | 4.28 | 4.71 |
| 0404 | Whey & milk products NESOI ³⁶ , flavoured etc. or not | 0.07 | 0.25 | 1.75 |
| 0405 | Butter and other fats and oils derived from milk | 0.00 | 0.00 | 0.05 |
| 0406 | Cheese and curd | 0.78 | 1.31 | 0.80 |
| | Total dairy exports | 5.29 | 6.43 | 7.79 |
| HS | Imports | 2004 | 2005 | 2006 |
| 0401 | Milk and cream, not concentrated or sweetened | 5.96 | 4.75 | 2.58 |
| 0402 | Milk and cream, concentrated or sweetened | 7.25 | 13.33 | 14.03 |
| 0403 | Buttermilk, yogurt, kephir etc., flavoured etc. or not | 1.03 | 0.30 | 0.61 |
| 0404 | Whey & milk products NESOI, flavoured etc. or not | 49.42 | 67.64 | 64.73 |
| 0405 | Butter and other fats and oils derived from milk | 5.39 | 9.47 | 6.52 |
| 0640 | Cheese and curd | 88.51 | 106.86 | 111.08 |
| | Total dairy imports | 157.56 | 202.35 | 199.54 |

Source: World Trade Atlas

³⁶ Not elsewhere specified or included

Report of the Canada-Japan Joint Study on Benefits and Costs of Further Promotion of Bilateral Trade and Investment

October 2007

| | |
|---|-----|
| Chapter 1 Introduction: An Analysis of the Bilateral Economic Relationship | |
| 1.1 Outline of the Joint Study..... | 236 |
| 1.2 The Canada-Japan Economic Relationship..... | 240 |
| Chapter 2 Examining Canada-Japan Economic Relations in the Context of Bilateral, Regional and Multilateral Initiatives | |
| 2.1 Introduction..... | 243 |
| 2.2 A Shared Commitment to Multilateralism..... | 243 |
| 2.3 Close Collaboration in Other Forums..... | 244 |
| 2.4 Regional Economic Integration..... | 249 |
| 2.5 Bilateral Trade and Investment Policy Initiatives..... | 256 |
| Chapter 3 Past and Present Trends in the Bilateral Economic Relationship | |
| 3.1 Overview of the Economies of Canada and Japan..... | 261 |
| 3.2 Trends in Bilateral Trade..... | 263 |
| 3.3 Trends in Investment..... | 271 |
| Chapter 4 Summary of Current Areas of Bilateral Economic Collaboration | |
| 4.1 Introduction..... | 276 |
| 4.2 Early Results under the Canada-Japan Economic Framework..... | 277 |
| 4.3 Overview of Ongoing Collaboration..... | 279 |
| 4.4 Sectoral Initiatives..... | 287 |
| 4.5 Role of the Private Sector and Other Key Stakeholders..... | 295 |
| 4.6 Conclusion..... | 299 |
| Chapter 5 Examination of the Existing Measures Limiting the Full Potential of Trade and Investment | |
| 5.1 Introduction..... | 300 |
| 5.2 Consultations at the Second Session of the Joint Study Working Group (In Tokyo)..... | 301 |
| 5.3 Consultations Held in Canada..... | 312 |
| Chapter 6 Analysis of the Implications of Further Promotion and Liberalization of Bilateral Trade and Investment | |
| 6.1 Overview..... | 324 |
| 6.2 Economic Analysis of Trade Liberalization between Canada and Japan... | 324 |
| 6.3. Policy Options..... | 336 |
| Chapter 7 Summary of Findings | 350 |

Chapter 1

INTRODUCTION: AN ANALYSIS OF THE BILATERAL ECONOMIC RELATIONSHIP

1.1 Outline of the Joint Study

Background and Purpose

At the Canada-Japan summit meeting held on January 19, 2005, the leaders of Canada and Japan issued a Joint Statement that set forth an initiative launching an innovative Canada-Japan Economic Framework (the Economic Framework)¹. As a practical means of promoting and revitalizing effective Canada-Japan economic ties in an integrated and coherent manner, the Prime Ministers of Canada and Japan signed an action-oriented and flexible Economic Framework in November 2005 on the margins of the Asia-Pacific Economic Cooperation (APEC) leaders meeting in Busan, Korea. Aimed at reinforcing existing bilateral economic ties and addressing new and emerging commercial challenges and opportunities, the Economic Framework reinvigorates the existing government-to-government dialogue, lays the groundwork for future cooperation on priority areas, and emphasizes the role of the private sector in guiding future initiatives. The Economic Framework includes a shared list of 15 priority areas of cooperation and the terms of reference of this Joint Study.

An important objective of the Economic Framework was the reinforcement of the Joint Economic Committee (JEC) as the central forum for regular, high-level dialogue between senior officials from both governments. Although the JEC was initially established under the 1976 Framework, Canada and Japan further clarified, in 2005, the JEC's role as a strategic oversight

¹ Note that "Canada-Japan" and "Japan-Canada" are used interchangeably in this report.

mechanism charged with monitoring the economic relationship, identifying opportunities for expanding trade and investment, and addressing remaining challenges limiting the growth of bilateral trade and investment. The co-chairs of the JEC, designated at the deputy minister level, meet regularly to discuss traditional issues such as trade and investment irritants, as well as new measures to promote commercial ties and to establish strategic directions for the bilateral relationship.

With a view to focusing on forward-looking strategic priorities, the Economic Framework identifies a number of "priority areas of cooperation" involving policy dialogue, facilitation and promotion of trade and investment, and the promotion of cooperation across a wide range of fields. Fifteen initial areas were identified at the time of the signing of the Economic Framework: social security, anticompetitive activities, food safety, customs, trade facilitation, transportation, investment, science and technology, information and communication technology, e-commerce, e-government, energy and natural resources, climate change, tax convention, and tourism promotion.

At the same time, the two governments recognize the importance of ensuring that these areas remain current, effective and relevant to Canadian and Japanese business. To this end, the Economic Framework provides for a Cooperative Working Group, which reports to the reinvigorated JEC, to oversee progress on the priority areas and to update the priorities as new areas of mutual interest arise.

Moreover, this Joint Study is an integral element of the Economic Framework. A Joint Study Working Group was established to carry out the Joint Study and report the findings to the Prime Ministers upon its completion, within a 12-month time frame. In addition to examining the benefits and costs of the further promotion of trade and investment, the study includes an assessment of the implications of further bilateral trade and investment liberalization. With the recognition that bilateral commercial opportunities remain untapped, the Joint Study will be crucial in helping the two governments develop plans to ensure that the Canada-Japan economic relationship reaches its full potential.

The purpose of the Joint Study is stipulated in Attachment II of the Canada-Japan Economic Framework as follows:

- a) to examine the benefits and costs of the further promotion of trade and investment, as well as other cooperative issues between the two countries;
- b) to identify and describe the current status of the bilateral economic relationship, including the identification of areas for further development;
- c) to consider the possibility of pursuing various cooperative bilateral trade and economic initiatives to re-energize the relationship; and
- d) to give appropriate consideration to the interests of the private sector.

Structure

The contents of each chapter are as follows:

Chapter 1 is an introductory section.

Chapter 2 provides the multilateral, regional and third-party context under which Canada-Japan bilateral economic relations will be evaluated in this study and identifies key areas in which the respective approaches of Japan and Canada converge and are complementary. In examining opportunities for further bilateral engagement on trade and investment issues of interest to both countries, it is first necessary to consider ways in which closer collaboration in existing international forums will help Canada and Japan attain their shared goals. Analysis of the impact of key economic developments that affect both Canada and Japan, including the rise of global value chains, energy and energy security issues, and ongoing bilateral trade and investment negotiations with third parties, will also highlight the value of close cooperation between Canada and Japan in the future.

Chapter 3 provides an overview of the current status of the Canadian and Japanese economies. The chapter describes the past and current status of the bilateral economic relationship and also provides a focus on trends in trade and investment.

Chapter 4 provides a qualitative review of Canada-Japan economic relations, including a description of key ongoing initiatives and priority sectors of interest to both countries. In order to examine ways to enhance the bilateral economic relationship, an evaluation of existing mechanisms for bilateral cooperation and of the views of the private sector will assist in determining where best to focus government attention for future collaboration. The analysis in this chapter of broad areas of key importance to both Canada and Japan, such as investment and science and technology, is complemented by further consideration of developments in specific commercial sectors, as well as the most recent developments under the Economic Framework. Many of these sectors continue to exhibit active collaboration and highlight the value of Canada-Japan cooperation in advancing mutual interests.

Chapter 5 examines existing measures limiting the full potential of trade and investment. Recognizing the critical role of the private sector in identifying challenges to facilitating trade and investment, this chapter largely reflects comments received in the context of consultations with stakeholders.

Chapter 6 examines the benefits and costs of the further promotion of bilateral trade and investment, as well as other cooperative issues between the countries, including an assessment of the implication of further trade and investment liberalization and related policy instruments.

Chapter 7 summarizes the findings of the Joint Study.

Three meetings of the Joint Study Working Group were held between December 2005 and September 2006 in Canada and Japan (please see the attachment for the dates of these meetings and their participants). Through these three meetings, the Joint Study Working Group has deepened its recognition and understanding of the present Canada-Japan economic relationship, reaffirmed the cooperative relationship within the existing areas of cooperation, and examined ways to further strengthen the economic relationship.

1.2 The Canada-Japan Economic Relationship

Steps in the Canada-Japan Economic Relationship

While the signing of the Economic Framework in 2005 marked an important development in the Canada-Japan economic relationship, it is also worth recalling past initiatives that have contributed to the growth and strengthening of the bilateral economic relationship.

1. In 2004, Japan and Canada celebrated 75 years of diplomatic ties and 100 years of formal commercial relations. Their post-war commercial relationship was established in 1954 with the conclusion of the Agreement on Commerce. This bilateral commercial agreement, designed to strengthen the traditional bonds and friendship and to further develop existing commercial relations, contributed to the recovery of the post-war Japanese economy, as well as to the revitalization of the existing Canada-Japan trade relationship at that time.
2. In 1976, the Canada-Japan Framework for Economic Cooperation was established during a visit to Japan by then Canadian Prime Minister Pierre Trudeau. This framework was an expression of political intent to further strengthen the economic relationship between Canada and Japan. It contains provisions for further developing the bilateral relationship, including the establishment of the JEC, which meets once a year to review and promote the Canada-Japan economic relationship. Since then, JEC meetings have been held in both countries, with the 20th JEC meeting in 2006.
3. In 1999, then Canadian Prime Minister Jean Chrétien visited Japan with "Team Canada," at which time "the Global Partnership for the 21st Century between Canada and Japan" was launched. The Global Partnership highlighted the need for expanded cooperation between Canada and Japan in addressing the global challenges of the new century and

included a focus on regulatory cooperation, space development, official development assistance, and peace and security.

4. In addition to these joint initiatives, there exist many other structures between the two countries, including the 1955 Canada-Japan Agreement for Air Services, the 1976 Canada-Japan Cultural Agreement, the 1978 Canada-Japan Agreement on Fisheries, the 1959 Canada-Japan Atomic Energy Cooperation Agreement, the 1964/1986 Canada-Japan Tax Convention and the 1986 Canada-Japan Agreement on Cooperation in Science and Technology.
5. Furthermore, existing dialogues at the governmental level on Telecommunication Policy Consultations, Financial Consultations, the Canola Consultation and the Tourism Conference have continued for a long period of time. Important links have also developed in the private sector. For example, the Committee on Canada of the Japan Business Federation (Nippon Keidanren) and the Canadian Council of Chief Executives held consultations in 2004 and 2005. In addition, the Canada-Japan Forum, a non-governmental eminent persons group, has made significant contributions on economic and other issues through their four reports between 1992 and 2006.

Attachment

Meetings of the Joint Study Working Group

1. First Meeting of the Joint Study Working Group

Dates: December 13-14, 2005

Place: Ottawa, Canada

Participants:

Canada:

Department of Foreign Affairs and International Trade, the Canadian Embassy in Japan, Agriculture and Agri-Food Canada, Industry Canada and Natural Resources Canada

Japan:

Ministry of Foreign Affairs, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, and the Japanese Embassy in Canada

2. Second Meeting of the Joint Study Working Group

Dates: April 5-7, 2006

Place: Tokyo, Japan

Participants:

Canada:

Department of Foreign Affairs and International Trade, Agriculture and Agri-Food Canada, Industry Canada and the Canadian Embassy in Japan

Japan:

Ministry of Foreign Affairs, Cabinet Office, Ministry of Internal Affairs and Communications, Ministry of Finance, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, and the Japanese Embassy in Canada

Private Sector Participants from Canada and Japan

3. Third Meeting of the Joint Study Working Group

Dates: June 5-8, 2006

Place: Toronto and Ottawa, Canada

Participants:

Canada:

Department of Foreign Affairs and International Trade, Agriculture and Agri-Food Canada, Industry Canada and the Canadian Embassy in Japan

Japan:

Ministry of Foreign Affairs, Cabinet Office, Ministry of Agriculture, Forestry and Fisheries, Ministry of Economy, Trade and Industry, and the Japanese Embassy in Canada

Private Sector Participants from Canada and Japan

Chapter 2

EXAMINING CANADA-JAPAN ECONOMIC RELATIONS IN THE CONTEXT OF BILATERAL, REGIONAL AND MULTILATERAL INITIATIVES

2.1 Introduction

Today, regional economic integration and ongoing efforts toward further multilateral trade liberalization are key forces influencing the priorities and strategies of the world's top trading nations, notably many countries in East Asia and North America. As active players in these regions, Canada and Japan are directly affected by increasing regional economic integration and share a strong interest in continuing to collaborate in a broad array of international forums, including the World Trade Organization (WTO), the Asia-Pacific Economic Cooperation (APEC) forum, the Group of Eight (G8) and the Organisation for Economic Co-operation and Development (OECD). While both countries are firmly committed to multilateral and regional efforts to promote open and secure trade, Canada and Japan also recognize the important role that bilateral relationships can play in promoting the principles of free trade and in facilitating closer cooperation in multilateral and plurilateral settings.

2.2 A Shared Commitment to Multilateralism

Canada and Japan share a firm commitment to the rules-based multilateral trading system embodied in the WTO. As trading nations whose well-being depends on secure access to global markets, both countries believe that the WTO is the best forum in which to build a more open and equitable world trading system. The WTO also provides the best multilateral forum to advance commercial relationships with established and potential trading partners around the globe.

Both Canada and Japan remain committed to the WTO and to achieving an ambitious, balanced and comprehensive agreement on the Doha Development Agenda. Over the last few years, Canada and Japan have actively cooperated together across a number of areas in the negotiations in order to press for greater ambition. For example, both countries aim for an ambitious outcome in non-agricultural market access negotiations. Canada and Japan also share an interest in promoting an effective trade facilitation agreement, clarifying and improving WTO rules covering anti-dumping, subsidies and regional trade agreements, and cooperate in areas of mutual interest in the agriculture negotiations. On the services front, Canada and Japan cooperate within the "Quad" and the group of "Really Good Friends of Services," as well as in a number of sector-specific groups, in order to encourage further liberalization of trade in services.

As significant players in the Doha Development Agenda, ideas and proposals put forward by Canadian and Japanese representatives have been important in helping to build consensus across the negotiating groups. Canada and Japan will continue to work together in the negotiations in order to ensure an ambitious, balanced and comprehensive outcome.

2.3 Close Collaboration in Other Forums

Canada and Japan have also built strong ties through a variety of other forums. Dialogues in other international organizations and institutions support the work undertaken at the WTO, help build consensus on key issues and provide a platform for constructive debate on topics of interest to both countries.

Asia-Pacific Economic Cooperation (APEC)

As the premier forum for trans-Pacific economic discussion and cooperation, APEC is an important vehicle for promoting the prosperity and security of the Asia-Pacific region. A shared vision of an economically integrated region, along the lines of APEC's long-term goal of free and open trade and investment, provides ample opportunities for Canada-Japan cooperation.

The two partners work together on several issues of shared interest, including trade facilitation, structural reform, protection of intellectual property rights, secure trade and human security.

Trade facilitation has been an especially notable area of Canada-Japan cooperation in APEC in recent years, and APEC is specifically identified in the Canada-Japan Economic Framework as a forum in which the two countries will continue to work together to advance the work of the WTO Negotiating Group on Trade Facilitation. Through targeted, high-level statements, capacity building and its own program of individual and collective trade-facilitating actions in areas such as standards and conformance and business mobility, APEC has achieved concrete reductions in trade-related transaction costs in Asia Pacific. These reductions have direct benefits for the private sector in Canada, Japan and the rest of the region.

A further area of Canada-Japan cooperation in APEC has been structural reform. Japan drafted the APEC Leaders' Agenda to Implement Structural Reform (LAISR), adopted in 2004, in addition to the work plan toward LAISR 2010 in 2005. Canada, in turn, has emphasized the developmental benefits of certain types of structural reform by taking an active role with regard to public sector governance and by promoting a private sector development agenda for APEC.

Since the tragic events of September 11, 2001, Canada and Japan have supported the expansion of APEC's agenda to confront the full range of challenges facing the Asia-Pacific region, with particular emphasis on security threats. Under the aegis of the Secure Trade in the APEC Region (STAR) initiative, both countries have provided extensive capacity building to APEC's developing members and are planning further assistance in the future. Canada and Japan also support APEC's work on non-traditional security issues, such as health and human security. Both countries recognize that human security is a fundamental prerequisite for the economic prosperity and progress to which APEC is devoted.

Canada and Japan share common views on best practices in the negotiation of high-quality free trade agreements (FTAs), economic partnership agreements (EPAs) and regional trade

agreements (RTAs) through “Best Practices for RTAs/FTAs in APEC.”² Both governments recognize that the success of any bilateral or regional trade agreement depends on the quality of the agreed provisions and the extent to which the agreement reflects the nature of the trade and investment relationship, while also recognizing areas of particular domestic sensitivity.

Beyond its natural role as a forum for regional discussions, APEC also presents excellent opportunities for individual economies to further their bilateral interests, as exemplified by the signing of the Canada-Japan Economic Framework and the launch of this Joint Study on the margins of the APEC leaders meeting in 2005.

Organisation for Economic Co-operation and Development (OECD)

Canada and Japan share a deep commitment to democratic governance and a strong market economy, which are the central pillars of the OECD. As part of this commitment, both countries are actively engaged in various OECD committees that cover a broad array of subjects, including economic and social issues like macroeconomics, trade, investment, competition, education, development, and science and innovation. In addition, Canada and Japan are both active on energy issues through the 26-member International Energy Agency (IEA), an autonomous agency of the OECD wherein member countries share information, coordinate energy policies and develop energy programs.

Canada and Japan have worked together within the OECD to promote business and trade interests. Both countries have pushed for the OECD to increasingly engage with emerging global economic players. In addition, Japan has specifically expressed interest in collaborating with Canada in order to orient the Trade Committee’s 2007-08 Programme of Work and Budget toward a broader focus aimed at examining emerging

² The document is available at:
www.apec.org/etc/medialib/apec_media_library/downloads/ministerial/annual/2004.Par.0004.File.tmp/04_amm_003.pdf

issues and strengthening the multilateral trading system. Canada was very supportive of a horizontal project on services that was initially launched by Japan at the 2003 Ministerial (the conclusions of which were presented at the 2005 Ministerial). Japan consulted with Canada throughout the preparation of the detailed plan on this project, and Canada has been supportive of Japan's efforts across the range of committees where this project was discussed.

As active members of the OECD, Canada and Japan are generally supportive of one another on broader institutional issues, including at the recent discussion at the 2007 Ministerial on OECD enlargement (five countries are to begin accession discussions) and enhanced engagement with global economic players, giving the OECD increased global relevance. Canada and Japan will continue to work closely together over the coming years on an agreement on financial reforms to ensure the OECD has a strong and sustainable financial foundation.

Working Together within the Group of Eight (G8)

Canada and Japan have shared many common positions at G8 summits. Most recently, at the Heiligendamm Summit in 2007, leaders achieved a significant consensus in addressing the challenge of climate change. In particular, Canada's and Japan's decisions, which include at least a halving of global emissions by 2050, as well as those of the European Union (EU), are to be considered seriously for setting global goals. Canada and Japan voiced a common will to pursue commitments made toward Africa at previous G8 summits. Leaders also issued a declaration on growth and responsibility in the world economy, underlining, *inter alia*, the importance of:

- G8 agenda for global growth and stability;
- systemic stability and transparency of financial markets/hedge funds;
- freedom of investment, investment environment, and social responsibility;
- promoting innovation protecting innovation;
- climate change, energy efficiency and energy security;

- responsibility for raw materials transparency and sustainable growth;
- fighting against corruption; and
- trade.

One key result of the Summit was the launch of the Heiligendamm Process, wherein the G8, together with Brazil, China, India, Mexico and South Africa, will engage in a sustained dialogue on four tracks – innovation and intellectual property rights (IPR), investment and corporate social responsibility, development, especially with regard to Africa, and energy efficiency and technology cooperation.

Previously, Canada and Japan have reaffirmed the importance of strengthening individual and collective efforts to combat piracy and counterfeiting and to elaborate concrete actions to combat IPR infringements. In addition, Japan proposed a possible international legal framework on preventing proliferation of pirated goods and counterfeits at the G8 Summit at Gleneagles in 2005. Canada supported the proposal that G8 IPR experts continue to study the international legal framework in the long and medium terms.

In addition, Canada and Japan have worked together at the G8 on issues such as science and technology for sustainable development, and more efficient use of resources and materials. Furthermore, climate change, energy efficiency and energy security are areas of particular importance to both Canada and Japan and were key focal points identified for further work in 2007. Increasing transparency, predictability and stability of global energy markets, improving investment conditions in the environment and energy sector, diversifying the energy mix and enhancing energy efficiency and energy saving, including the development and promotion of energy-efficient technologies, will be the key areas for future cooperation.

Cooperation of G7 Finance Ministers

Canada and Japan have an excellent working relationship in the G7 Finance Ministers process. Of note is that Canada became an official member of the G7 Finance Ministers group in 1986

at the Tokyo Summit. Since then, both countries have worked together, along with other G7 partners, on a number of important issues, including crisis prevention and resolution tools following the 1997 Asian crisis, various development-related projects for Africa and countless financial sector initiatives.

Most recently, Canada and Japan have been working together under the Canada-Japan financial sector dialogue and on International Monetary Fund (IMF) quota reform, which determines a member's voting power. Canada-Japan financial consultations occur every 18 to 24 months in Ottawa or Tokyo and allow for a broad discussion of current macroeconomic, financial sector and international financial issues. Meetings have proven to be a worthwhile means of keeping abreast of developments in our respective economies and providing a forum to discuss important bilateral financial sector issues, including financial services trade irritants.

IMF quota reform is also of particular importance given that the rapid economic growth of emerging markets over the last two decades has meant that their quota shares are considerably out of line with their economic weights in the global economy. Canada and Japan are working closely on this issue of quota reform in order to ensure that quota shares, especially those of the most dynamic members, many of which are emerging markets, better reflect relative weights and roles in the global economy.

2.4 Regional Economic Integration

As evidenced by their engagement in existing international organizations and institutions, both Canada and Japan are clearly committed to regional and multilateral cooperation as a means of increasing prosperity for their citizens and enhancing the overall security of global trade. While the multilateral trading system remains the centrepiece of the trade policy strategies of both countries, regional integration has become an important factor in setting priorities and identifying issues of interest to both Canada and Japan, such as the promotion of two-way in-

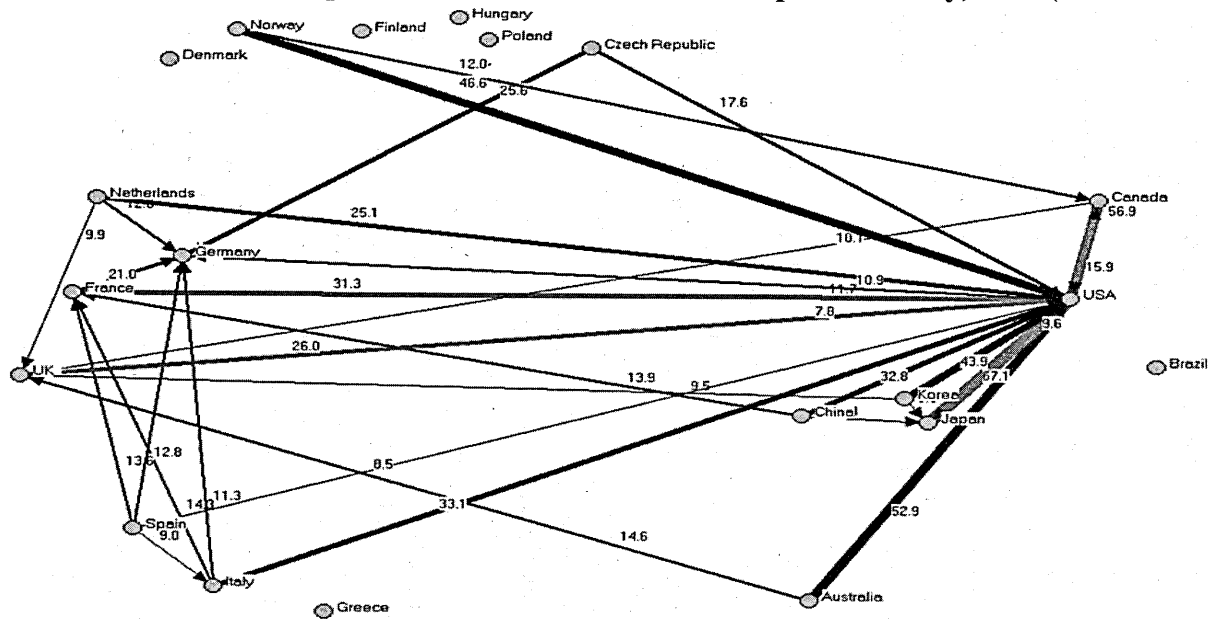
vestment and the negotiation of trade agreements and related initiatives with key strategic partners.

The diverse economies of East Asia and North America are leaders in international commerce, and interregional trade and investment between these two geographic epicentres continues to gather momentum. An increasingly important contributing factor is the overall globalization of production chains. Participation in such production networks can benefit partner countries by organizing trade links and providing access to technology flows. Global production networks are particularly complex for high-technology industries, which require a broad range of specialized inputs that can be sourced globally, either on an arm's-length or intrafirm basis. Figure 2.1, which depicts the global production network for the aerospace industry, provides a good example of this.

As can be seen from the figure below, in the aerospace industry in 1995 there was a significant trans-Pacific element to the global value chains, with Japan serving as a mini-hub that feeds primarily into the U.S. aerospace industry. Canada was also linked into the U.S. hub and served as a mini-hub for regional aircraft, drawing on inputs from the United States and Europe. The organization of these global value chains varies across industrial sectors and is evolving rapidly. Participation in global value chains, which is important in sustaining the engagement of Canadian and Japanese firms in globalized industrial sectors and deepening trans-Pacific trade links, serves to enhance the respective competitive positions of both countries.

In addition to regional integration, the trans-Pacific dimension is becoming increasingly important, particularly in higher-value and technology-intensive areas such as aerospace. Fostering deeper trans-Pacific connections by facilitating economic integration between Canada and Japan across the full spectrum of activities that are subject to globalization will provide Canadian and Japanese firms – including producers of goods and services as well as knowledge – with new competitive advantages in maintaining and expanding their participation in global production networks.

Figure 2.1: A simplified production network for the aerospace industry, 1995 (flows in million USD)



Source: B. Wixted, N. Yamano and C. Webb (2006), "Input-Output Analysis in an Increasingly Globalised World: Applications of OECD's Harmonised International Tables," STI Working Paper 2006-07, Directorate for Science, Technology and Industry, OECD.

East Asian Integration

In Asia, the implementation of regional production chains (or value chains) has been highly successful in large part due to the wide variation in the sophistication of production among many economies in Asia. As a consequence, regional production chains have been a leading driver of Asia's economic growth and development and have attracted significant foreign direct investment from other areas of the world, including North America and Europe. Asian countries with a higher number of skilled workers and greater advancement in technology tend to enter the top of the value chain, providing the essential knowledge- and technology-intensive processes, such as research and development and advanced precision manufacturing. This type of contribution to the value chain is then complemented by production of more labour-intensive products by less developed countries. For example, while Japan provides much of the region's research and development and is home to many of the region's multinational enterprises, many other countries and regions, including Singapore, South Korea, Hong Kong and Malaysia, produce sophisticated inputs and are responsible for an increasing share of product design. Countries such as Indonesia and Vietnam also contribute to these value chains through the supply of an abundance of low-cost labour and their specialization in the final assembly of products.

While increasing Asia's regional integration, the global value chain phenomenon is also ensuring that Asia as a whole is more competitive globally. Overall, Asia's share of world imports has increased from 14.7% in 1980 to 28.8% in 2004. As Asia's largest economy, Japan is clearly a dominant player in global value chains. Japanese direct investment in its Asian neighbours and the proliferation of Japanese technology are central factors directing East Asian production and distribution networks. The vast majority (approximately 93% in 2004) of goods and services produced by Japanese affiliates in East Asia are traded within the region (50% to local markets, 22% to Japan and 21% to other

countries in the region). In addition, these same Japanese affiliates source approximately 95% of their goods and services from the region³. China is also playing an increasingly influential role in all areas of Asian value chains, with more than two-thirds of Chinese imports currently being used as intermediate inputs in the production of exports. Most of these inputs come to China from its neighbours within the region and are then sent on to destinations outside of Asia, such as North America and Europe.

Given these developments, Asia's global value chains and Japan's role in the region are key considerations for Canadian business and government leaders. In addition to being a dominant force in global supply chains and Asia's largest economy, Japan is also a key export market and source of foreign direct investment (FDI) for Canada. In light of the high integration of Japanese companies and the concentration of Japanese direct investment throughout Asia, Japan has the potential to play a valuable role as an entry point to East Asia for Canadian trade and investment.

North American Integration

From a business perspective, North America is one of the most highly integrated regions in the world. North Americans share increasingly integrated energy markets, serve the same customers with an array of financial services, use the same roads and railroads to transport jointly made products to market, fly on the same integrated airline networks and increasingly meet the same or similar standards of professional practice. Canada and the United States have shared a similar political, economic, cultural and geographic heritage for the past two centuries, and this relationship continues to be reinforced through migration and immigration.

³ Fukunari Kimura and Mitsuyo Ando, "The Economic Analysis of International Production/Distribution Networks in East Asia and Latin America: The Implication of Regional Trade Arrangements," Faculty of Economics, Keio University, Tokyo, May 2004, pp. 13-14.

For the past 40 years, the two economies have become increasingly integrated, and the building of this integrated economy has been driven to a large degree by corporate perceptions of changes in global and national markets and environments. As Michael Hart indicates in a paper on Canada's relationship with the United States: "Economic integration is a natural process flowing from the impact of billions of discrete and seemingly unrelated decisions. Policy, however, can smooth or hinder this process."⁴ The Canada-U.S. Free Trade Agreement, which entered into force in 1989, and the North American Free Trade Agreement (NAFTA) established a rules-based framework to smooth such integration.

When it came into force in 1994, the NAFTA created the world's largest free trade area, encompassing over 400 million people and almost \$8 trillion in yearly production. The NAFTA united the economic futures of Canada, the United States and Mexico with a rules-based framework for the conduct of business in the region. In 2006, Canada exported \$361 billion in goods to the United States and imported \$257 billion in return. Services exports totalled \$37 billion in 2006, with corresponding imports valued at \$47 billion. Almost 76% of Canadian exports of goods and services are to the United States. On the other side, about 19% of U.S. exports are bound for Canada, and 38 states have Canada as their primary trading partner. Trade with Mexico has also increased significantly. Bilateral trade had grown by more than 300% since NAFTA to reach \$20 billion in 2006. Mexico is Canada's fifth most important export market, and Canada is Mexico's second largest export market after the United States.

Like in Asia, improved market access has encouraged firms to rationalize production and become more specialized. Trade liberalization has resulted in a significant increase in intrafirm

⁴ Michael Hart, "Canada, the United States and Deepening Economic Integration: Next Steps," *North American Linkages: Opportunities and Challenges for Canada* (Calgary: University of Calgary Press), 2003, p. 429.

trade. It is estimated that over 34% of Canada-U.S. bilateral trade is intrafirm. In sectors ranging from beef to automobiles, products move back and forth across borders all along the value chain. Canada's automotive industry does not merely rely on access to the U.S. market for sales (85% of all vehicles produced being exported to that market); the United States is also the major source of parts for vehicle production as well as finished vehicles for sale. Parts cross the border many times as they are transformed and built into larger assemblies that are ultimately combined into finished vehicles. In the cattle and beef sectors, Mexico exports feeder calves to the U.S. market and Canada exports slaughter cattle, feeder calves and breeding stock. The United States ships feeders, slaughter cattle and breeding stock to Canada and breeding stock to Mexico. Canada and the United States ship beef to each other as well as to Mexico. Some multinational agri-food companies are taking advantage of economies of scale, specialization and input cost competitiveness by concentrating production for the hemispheric market in selected plant locations in Canada and the United States.

According to some independent analyses⁵, other Canadian manufacturing industries that are extensively integrated on a cross-border basis, and in which firms operate as if there were little or no border impediment to trade flows, are machinery manufacturing, computer and electronic product manufacturing, plastics and rubber product manufacturing, and electrical equipment, appliance and component manufacturing. Movements of direct and portfolio investment also clearly point to greater integration. U.S. direct investment in Canada increased to \$274 billion in 2006, while Canadian direct investment in the United States grew to \$224 billion in the same year. Canada is Mexico's fifth most important investor (1993-2004), with

⁵ Dr. Tim O'Neil, Chief Economist, Bank of Montreal, "North American Economic Integration and Its Applications to Canadian Banks," BMO Financial Group, Economics Department, 2002.

\$4.4 billion invested in 2006. Meanwhile, Mexican FDI to Canada reached \$277 million in 2006.

As active trading nations in two of the world's most highly integrated regions, Canada and Japan offer their trade and investment partners access to large and growing markets. Like Japan in Asia, Canada serves as an important access point to North America and, given its position as the largest trading partner of the United States, remains an unequalled point of entry into the world's largest market.

2.5 Bilateral Trade and Investment Policy Initiatives

As a complement to examining ongoing collaboration in existing multilateral and regional forums, Canada and Japan recognize the importance of considering further their respective approaches to key bilateral trade and investment negotiations and discussions with third countries. This section highlights key innovative initiatives that Canada and Japan have developed with third countries, including Canada's free trade and investment protection agreements, Japan's economic partnership agreements and investment treaties, and other initiatives such as joint studies and exploratory talks. While Canada and Japan have also concluded and/or signed a number of bilateral agreements with each other, including an air services agreement, social security agreement, a tax convention and various cooperation agreements in areas such as investment, competition, science and technology, and regulatory cooperation, these initiatives are addressed in greater depth elsewhere in this report.

Canada's Strategy for Bilateral and Regional Trade Policy Initiatives

As a trade-oriented and globally integrated economy, Canada benefits from an open, transparent and rules-based international trading system at the multilateral, regional and bilateral levels. Canada's regional and bilateral trade initiatives are a means to

secure markets for Canadian business, encouraging companies to expand into these markets and create jobs in Canada. While the WTO is the centrepiece of Canada's trade policy, regional and bilateral initiatives are also important pillars. Bilateral trade agreements complement Canada's objectives to improve and strengthen global trade rules. These agreements serve to stimulate the economy, provide innovative solutions to difficult trade and investment issues, and strengthen economic reforms. Canada has concluded FTAs with the United States, Mexico, Israel, Chile and Costa Rica, and, most recently, has concluded negotiations for an FTA with the European Free Trade Association countries (Iceland, Norway, Switzerland and Liechtenstein). Canada continues to recognize the merits of pursuing FTAs and other targeted policy instruments with priority trade and investment partners.

Canada has ongoing FTA negotiations with Singapore, Korea, the Andean Community countries of Colombia and Peru, the Dominican Republic, the Caribbean Community (CARICOM), and a group of four Central American countries (El Salvador, Guatemala, Honduras and Nicaragua). Canada is also studying the feasibility of an FTA with Jordan. In addition to these initiatives, Canada established an Economic Framework with Japan to enhance bilateral economic relations and is working with the EU on a study to examine the costs and benefits of a closer economic partnership.

Canada's FTAs typically follow the NAFTA model, although provisions can vary from one agreement to another so as to reflect developments in international trade law and policy since the NAFTA's inception. For example, Canada has pursued a separate trade facilitation chapter in its most recent FTAs and in ongoing FTA negotiations. Such a chapter endeavours to promote enhanced transparency, predictability, due process, simplification, rapid release, a more efficient use of resources, and effective border control and enforcement – in part to help reduce business costs for all traders, an issue of particular interest to small and medium-sized enterprises.

The complete text of each of Canada's FTAs is publicly available⁶, including tariff elimination schedules, product-specific rules of origin, reservations, backgrounders and analytical pieces. Information, including statistics, relating to the examination of Canada's FTAs by the WTO Committee on Regional Trade Agreements can be found on the WTO website⁷.

Japan's Strategy for Bilateral and Regional Trade Policy Negotiations

While Japan seeks to achieve economic growth by further strengthening the multilateral trading system as embodied in the WTO, Japan is taking the initiative in advancing economic partnerships with other countries in East Asia and other parts of the world as a means to complement the WTO multilateral trading system. Given the deep interdependence with its economic partners worldwide, Japan's bilateral or regional efforts are placed not only in the aspect of trade in goods or services but also in a wide range of areas – or in other words, “WTO plus” – including investment, movement of natural persons, intellectual property and competition policy as well as cooperation. In this light, the bilateral and regional agreements of Japan are called economic partnership agreements (EPAs) rather than free trade agreements (FTAs).

In addition to the Economic Framework that Japan signed with Canada in 2005, Japan's bilateral and regional efforts have continued to evolve. Japan concluded EPAs with Singapore, Mexico, Malaysia and Chile, which took effect in November 2002, April 2005, July 2006 and September 2007 respectively, and signed EPAs with the Philippines, Thailand, Brunei and Indonesia in September 2006, April 2007, June 2007 and August 2007 respectively. EPAs with Vietnam, the Republic of Korea, India, Australia and Switzerland are under negotiation. In paral-

⁶ www.dfait-maeci.gc.ca/tna-nac/reg-en.asp

⁷ www.wto.org

lel with those bilateral efforts, Japan has been conducting negotiations of an EPA with the Association of Southeast Asian Nations (ASEAN) as a whole since April 2005 and an FTA covering trade in goods and services with Gulf Corporation Council (GCC) states since September 2006.

Canada's Approach to Investment Treaties

While serving to reinforce Canada's bilateral relations, investment chapters in FTAs and international investment agreements are designed to assist Canadian firms in obtaining an optimum level of investment abroad, help lower their political risk, and reduce insurance and other attendant costs inherent in investing in emerging economies. The enhanced security that a Foreign Investment Promotion and Protection Agreement (FIPA)⁸ provides also contributes to the overall viability of Canadian companies trading and investing abroad.

In this vein, Canada's FIPAs seek to ensure that Canadian investors abroad will not be treated any worse than similarly situated domestic investors or other foreign investors, will not have their investments expropriated without prompt and adequate compensation, and will not be subject to treatment lower than the minimum standard established in customary international law. In most circumstances, investors should also be free to invest capital and repatriate their investments and returns. Additionally, Canada's policy is to promote and protect investment through a transparent rules-based system in a manner that reaffirms the right of governments to regulate in the public interest.

A new Canadian FIPA model was developed and finalized in 2004 that builds on the experiences Canada has gained through the implementation and operation of the NAFTA investment chapter. The principal objectives of developing a new

⁸ The FIPA is Canada's investment treaty model, which also forms the basis of Canada's FTA investment chapters.

model FIPA were to enhance clarity in the substantive obligations, maximize openness and transparency, balance state sovereignty with investment protection and discipline, and improve efficiency in the dispute settlement procedures. Canada has concluded 25 FIPAs in 18 years, most recently with India and Jordan. Canada is currently negotiating an investment agreement with China, and is engaged in negotiations to revise FIPAs already in force with six new and acceding member states to the EU.

Japan's Approach to Bilateral Investment Treaties

For Japanese companies that are planning to extend – or that have already extended – their business activities abroad, it is very important to ensure their protection and the protection of their assets, together with legal stability and transparency of the relevant laws and regulations of the host countries (investing countries) under a binding framework. This will contribute to the reduction or relaxation of institutional risks that Japanese companies face in foreign countries.

In this regard, investment chapters in EPAs or bilateral investment treaties will play important roles to helping to protect Japanese companies and their assets. Such investment rules incorporate several important elements, which the Canadian side has already stressed the importance of, including treatment not less favourable to local companies or other foreign companies, the clarification of important matters concerned with expropriation and compensation, and the free transfer of investment capital or repatriation of investments. In addition, the transparency of the relevant restrictive laws and regulations and the maintenance of the restriction level will be pursued to the greatest extent possible. Japan signed an investment agreement with Cambodia in June 2007, and negotiations for bilateral investment agreements with Saudi Arabia and Laos and a tripartite investment agreement with China and Korea are ongoing.

Chapter 3

PAST AND PRESENT TRENDS IN THE BILATERAL ECONOMIC RELATIONSHIP

Canada and Japan have long been important economic partners, with significant levels of two-way trade in goods and services, flows of direct and portfolio investment, flows of technology and ideas, and movement of people. Yet, for some time, the overall commercial relationship has underperformed and thus been overshadowed by dynamic growth in bilateral relations with other economic partners.

One contributing factor was the long period of slower growth in Japan following the bursting of the “bubble” economy in the early 1990s, which culminated in the recession of the late 1990s and the Asian economic and financial crisis. A second factor was the strength of the regional dynamic in both North America and East Asia. Intraregional trade and investment growth in these regions outpaced the expansion of trans-Pacific commerce, resulting in a relative decline in the weight of the latter.

Japan’s economic recovery is now strengthening. At the same time, Canada is seeking new opportunities to increase its prosperity by strengthening international linkages. The overall economic relationship between Canada and Japan is thus in a position to move forward more strongly than it has in the recent past.

3.1 Overview of the Economies of Canada and Japan

Canada and Japan are both mature, industrialized economies that rank amongst the world’s largest. Japan’s economy was 3.4 times larger than Canada’s in 2006. This largely reflects different population sizes. Per capita income in Canada in 2006 was

2.1% lower than in Japan, measured in common currency at current market exchange rates. In terms of purchasing power parity, however, Canada's per capita income was 6.7% higher than Japan's per capita income in 2005, reflecting the fact that Japan's prices were somewhat higher on average than Canada's (See Table 3.1).

Table 3.1: Summary Statistics on the Canadian and Japanese Economies

| | Canada | Japan |
|--|------------|------------|
| Gross domestic product, 2006 | | |
| In current USD billions at market exchange rates | US\$1,269 | US\$4,365 |
| In CAD billions at market exchange rates | \$1,439 | \$4,952 |
| In JPY billions at market exchange rates | ¥148,132 | ¥507,693 |
| Population | | |
| 2006 (millions) | 32.85 | 127.7 |
| Gross national income per capita, 2006 (current prices) | | |
| In current USD at market exchange rates | US\$38,440 | US\$35,137 |
| In CAD at market exchange rates | \$43,595 | \$39,859 |
| In JPY at market exchange rates | ¥4,469,907 | ¥4,088,000 |
| Per capita income | | |
| At purchasing power parity, 2005 (Japan = 100) | 106.7 | 100.0 |
| GDP growth | | |
| 2001-06 (average; constant prices) | 2.5% | 1.5% |
| GDP shares (for Canada based on 2002 current dollars; for Japan based on 2005 current prices) | | |
| Primary | 7.2% | 1.4% |
| Secondary | 25.1% | 26.4% |
| Tertiary | 67.7% | 72.2% |
| Trade orientation, 2006 (current prices) | | |
| Exports of goods and services as share of GDP | 36.4% | 16.1% |
| Imports of goods and services as share of GDP | 34.1% | 14.9% |

Sources: International Monetary Fund, *International Financial Statistics*, CD-ROM, for GDP, GNI, population and bilateral Yen/USD and CAD/USD exchange rates. Purchasing power parity data from the World Bank, *World Development Report 2006*, Table 1. Statistics Canada for trade data; trade data are on a balance of payments basis; Bank of Canada for the annual average exchange rate used to convert Canadian dollar data into Japanese yen data. The breakdown of GDP shares is based on the Canadian classification. (Japanese primary sectors include agriculture, forestry and fishing. Secondary sectors include mining, manufacturing and construction. The Tertiary is the rest.)

Japan's gross domestic product (GDP) in 2006 was ¥507,693 billion (approximately \$4,952 billion), the second highest in the world after the United States. During that same year, Canada's GDP registered \$1,439 billion (approximately ¥148,132 billion), placing it eighth in the world ranking. In both economies, services account for the largest share of GDP. Manufacturing and other industrial activity accounts for roughly one-quarter of GDP, while the primary sectors (agriculture, forestry, fishing, and mining and energy extraction) account for only a small share of overall economic activity. The primary sectors are relatively more important in Canada's economy than in Japan's.

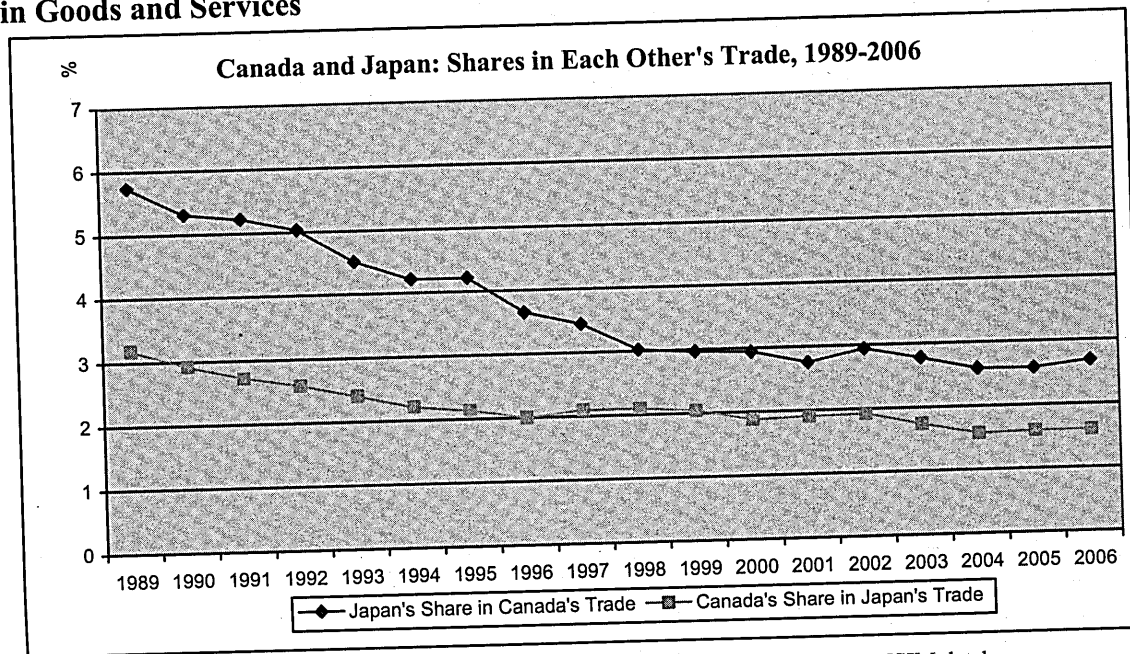
Both economies are deeply engaged in the global economy; that being said, Canada's exports of goods and services as a share of GDP in 2006 stood at 36.4%, which is substantially higher than Japan's at 16.1%.

Both economies are in the midst of cyclical recoveries. In Japan's case, the economic expansion since 2002 represents the strongest sustained growth since the bursting of Japan's "bubble" economy at the beginning of the 1990s. In Canada's case, the economy recorded its 15th consecutive year of growth in 2006

3.2 Trends in Bilateral Trade

The Canada-Japan trade relationship peaked in terms of relative importance in 1989; in that year, Japan accounted for 5.7% of Canada's two-way trade in goods and services, while Canada accounted for 3.2% of Japan's two-way trade in goods and services.

Figure 3.1: Canada's and Japan's Respective Shares in Each Other's Total Trade in Goods and Services



Sources: Statistics Canada, "Balance of International Payments: Canada with Japan," CANSIM database; Ministry of Finance of Japan, "Trade Statistics."

Since then, the value of two-way trade has grown but at a slow pace. According to Canadian statistics, two-way trade in goods and services grew from \$19.3 billion in 1989 to \$27 billion in 2006, a gain of 40.6%, or 2.0% per year. According to Japanese statistics, two-way trade has been flat at ¥2,122 billion in 1989 and ¥2,277 billion in 2006, fluctuating around ¥2,000 billion for the past 10 years. (Canada's and Japan's trade statistics have different standards, such as with respect to how to calculate shipments through third countries, which is reflected in the disparity in the data.)

In the 1990s, the relative importance of Canada-Japan bilateral trade fell more or less steadily, reflecting on the one hand the influence of economic slowdown and recession in Japan, and on the other hand the increase in the U.S. share of Canada's trade due to the Canada-U.S. Free Trade Agreement and its successor, the North American Free Trade Agreement (NAFTA). Since 2000, the relative importance of the trading relationship has continued to decline, but at a much slower pace. During this latter period, the main factor has been the rise in importance of China in both Canadian and Japanese trade.

In 2006, Canada was Japan's 15th largest trading partner in terms of two-way trade in goods and services (balance of payments basis). On the same basis, Japan was Canada's third largest trading partner in terms of two-way trade in goods and services.

3.2.1 Sectoral Trends in Merchandise Trade

Trade in goods between Canada and Japan appears to be largely complementary, with each specializing in products that the other does not intensively export (See Tables 3.2 and 3.3).

Japan's Merchandise Imports from Canada

Canada is one of the world's leading exporters of primary goods (e.g. agricultural, forestry and fisheries products) and natural resources, such as energy, metal and mineral products. Recently, agricultural, forestry and fisheries products have accounted for about 44.6% of Japan's imports from Canada. However, Canada's trade with Japan is slowly evolving toward higher value-added products. For example, the share of Japanese imports from Canada accounted for by higher-technology products such as pharmaceuticals, aerospace, machinery and equipment, and consumer goods has risen from 4.5% in 1994 to 9.5% in 2006. The pattern of Canada-Japan trade is likely to continue to evolve in this direction in the future.

Canada's Merchandise Imports from Japan

Manufactured goods dominate Canada's imports from Japan. Automobiles and automotive parts, machinery and machinery parts, and electrical machinery and electrical machinery parts accounted for 76.6% of the total value of Canadian imports from Japan in 2006.

Table 3.2: Top 10 Items Imported by Japan from Canada, 2006

| HS | | CAD Millions | JPY Millions | Share of total (%) |
|--------------------|--------------------------|-----------------|-----------------|-----------------------|
| 44 | Wood | 1,594 | 163,413 | 14.6 |
| 26 | Ores, slag, ash | 1,434 | 146,994 | 13.1 |
| 27 | Mineral fuel, oil, etc. | 1,194 | 122,440 | 11.0 |
| 12 | Misc. grain, seed, fruit | 974 | 99,821 | 8.9 |
| 2 | Meat | 848 | 86,961 | 7.8 |
| 47 | Wood pulp, etc. | 544 | 55,811 | 5.0 |
| 76 | Aluminum | 475 | 48,706 | 4.4 |
| 3 | Fish & seafood | 471 | 48,319 | 4.3 |
| 10 | Cereals | 431 | 44,179 | 4.0 |
| 85 | Electrical machinery | 401 | 41,146 | 3.7 |
| Total, all sectors | | 10,907 | 1,118,372 | 100 |

Source: *World Trade Atlas*.

Table 3.3: Top 10 Items Imported by Canada from Japan, 2006

| HS | | CAD millions | JPY millions | Share of total (%) |
|--------------------|---|-----------------|-----------------|-----------------------|
| 87 | Motor vehicles, trailers, bicycles, motorcycles and other similar vehicles | 6,681 | 685,052 | 43.5 |
| 84 | Nuclear reactors, boilers, machinery and mechanical appliances | 3,012 | 308,877 | 19.6 |
| 85 | Electrical or electronic machinery and equipment | 2,055 | 210,719 | 13.4 |
| 90 | Optical, medical, photographic, scientific and technical instruments | 787 | 80,695 | 5.1 |
| 88 | Aircraft and spacecraft | 445 | 45,636 | 2.9 |
| 73 | Iron/steel products | 397 | 40,716 | 2.6 |
| 40 | Rubber | 383 | 39,297 | 2.5 |
| 30 | Pharmaceutical products | 139 | 14,241 | 0.9 |
| 72 | Iron and steel | 136 | 13,905 | 0.9 |
| 39 | Plastic | 133 | 13,600 | 0.9 |
| Total, all sectors | | 15,346 | 1,573,457 | 100 |

Source: *World Trade Atlas*.

3.2.2 Trade in Services

Trade in commercial services⁹ between Canada and Japan is becoming an increasingly important part of the bilateral trading relationship. In 2006, two-way services trade amounted to ¥490 billion (\$4.8 billion), accounting for 17.6% of total bilateral trade in goods and services, compared with only 8.8% in 1990.

Travel services play an important role in Canada's cross-border services exports to Japan, comprising \$543 million in 2006 (compared with transportation services at \$512 million, commercial services at \$398 million and government services at \$34 million), according to Canada's statistics (See Table 3.4).

In the area of commercial services, the largest segment of Canada's cross-border services exports to Japan is with respect to royalties and licence fees. However, computer and information services; professional services, such as engineering and architecture; advertising and related services; and other business services also represent a significant proportion of Canada's commercial services exports. Financial services also represent an important sector in Canada's services trade with Japan. However, the majority of Canada's financial services exports are transacted through commercial presence rather than on a cross-border basis and do not, therefore, figure prominently in cross-border trade statistics.

⁹ Statistics on trade in services often underestimate the total volume of services trade taking place, particularly since services statistics typically only measure cross-border services trade and do not take into account other modes of services supply, namely consumption abroad, commercial presence and temporary movement of natural persons. In some sectors, these other modes of services supply may comprise a much higher volume of total trade than cross-border supply. As a consequence, accurate measures of Canada's and Japan's respective trade performances in the area of services are often difficult to obtain, especially at the disaggregate level.

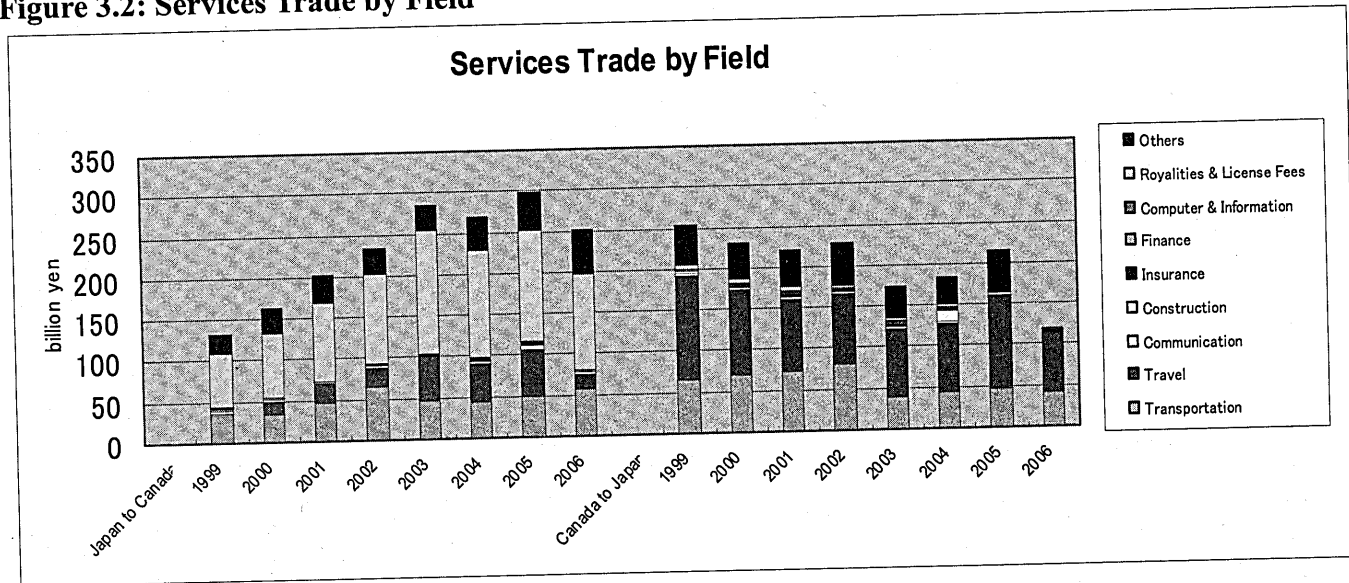
Table 3.4: Bilateral Transactions in Services (million dollars)

| Japan to Canada | | | | |
|-----------------|--------|----------------|------------|------------|
| | Travel | Transportation | Commercial | Government |
| 1999 | 153 | 388 | 1,226 | 43 |
| 2000 | 189 | 479 | 1,348 | 51 |
| 2001 | 204 | 448 | 1,426 | 47 |
| 2002 | 191 | 453 | 2,300 | 42 |
| 2003 | 202 | 506 | 1,975 | 39 |
| 2004 | 245 | 540 | 1,862 | 38 |
| 2005 | 231 | 582 | 1,518 | 36 |
| 2006 | 191 | 578 | 2,484 | 35 |
| Canada to Japan | | | | |
| | Travel | Transportation | Commercial | Government |
| 1999 | 619 | 441 | 416 | 31 |
| 2000 | 731 | 568 | 538 | 32 |
| 2001 | 678 | 593 | 615 | 31 |
| 2002 | 714 | 484 | 548 | 32 |
| 2003 | 398 | 369 | 430 | 32 |
| 2004 | 611 | 546 | 376 | 32 |
| 2005 | 605 | 551 | 325 | 32 |
| 2006 | 543 | 512 | 398 | 34 |

Source: Statistics Canada, "Balance of International Payments: Canada with Japan," CANSIM database.

Commercial services also represent the largest segment of Japan's total cross-border services exports to Canada, comprising ¥251 billion in 2006. According to Japanese statistics, royalties and licence fees represent an extremely high proportion within this segment. Financial services, management services, audiovisual services and other business services represent other important sectors in the area of commercial services. Travel services represented ¥19 billion, transport services ¥56 billion and government services ¥1.0 billion in 2006 (See Figure 3.2).

Figure 3.2: Services Trade by Field



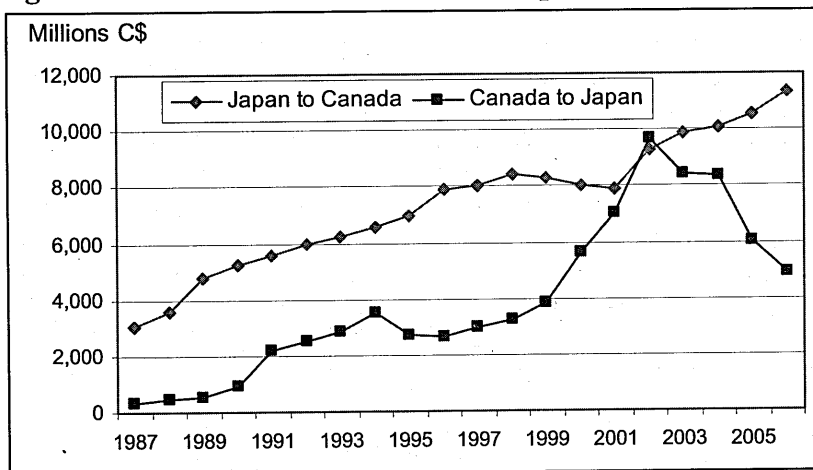
Source: Bank of Japan, "Balance of Payment."

3.3 Trends in Investment

3.3.1 Overview

The value of foreign direct investment (FDI) has in the past been such that FDI flows and stocks from Japan to Canada have tended to be larger than investment in the other direction, although FDI stocks from Canada to Japan exceeded FDI stocks from Japan to Canada in 2002. While FDI stocks from Japan to Canada have been a growth trend recently, FDI stocks from Canada to Japan have been falling since 2002, when the FDI stocks were at their peak (See Figure 3.3).

Figure 3.3: FDI between Canada and Japan (stocks)



Source: Statistics Canada.

The compound annual growth rate in the value of direct investment (stocks) from Japan to other countries since 1996 has been 5.7%, while the growth rate in the value of direct investment from Japan to Canada has been 6.8%. On the other hand, whereas the growth rate in the value of direct investment (stocks) from foreign countries to Japan has been 13.7%, the

average annual growth rate in the value of direct investment from Canada to Japan has been 15.1%.¹⁰

Direct investment from Japan to Canada in 2006 was US\$6,818 million (equivalent to approximately 1.5% of Japan's direct investment position abroad), while direct investment from Canada to Japan was US\$2,284 million (equivalent to approximately 2.1% of Japan's inward direct investment position). From Japan's perspective, although the total value of inward direct investment is low, Canada is an important source of investment in Japan. The scale of its investment is, however, by no means large (see Table 3.5).

Table 3.5: Japan's International Investment Position by Region

| The Position of Foreign Direct Investment in Japan | | | | |
|--|---------|------|---------|------|
| Million US\$ | 1996 | | 2006 | |
| | Value | % | Value | % |
| All countries | 29,942 | | 107,663 | |
| United States | 15,394 | 51.4 | 41,989 | 39.0 |
| European Union | 7,215 | 24.1 | 39,625 | 36.8 |
| Canada | 562 | 1.9 | 2,284 | 2.1 |
| Rest of the world (ROW) | 6,771 | 22.6 | 23,765 | 22.1 |
| The Position of Japan's Direct Investment Abroad | | | | |
| Million US\$ | 1996 | | 2006 | |
| | Value | % | Value | % |
| All countries | 258,653 | | 449,680 | |
| United States | 94,336 | 36.5 | 156,411 | 34.8 |
| European Union | 43,569 | 16.8 | 118,852 | 26.4 |
| Canada | 3,545 | 1.4 | 6,818 | 1.5 |
| ROW | 117,203 | 45.3 | 167,599 | 37.3 |

Source: Japan External Trade Organization (JETRO).

¹⁰ Source of the data for this paragraph: Japan External Trade Organization (JETRO).

While the geographic distribution of FDI in Canada remained relatively stable over the past decade, with the United States dominating, there have been noticeable changes in the pattern of Canadian investment abroad. Canadians diversified their investment, making more investment in many parts of the world than in the traditional U.S. market. Between 1990 and 2006, the share of the United States in total Canadian investment abroad declined from 61.0% to 42.8%, while the corresponding shares for the “rest of the world” – mainly developing countries – increased from 17.1% to 28.7% over the same period (see Table 3.6).

Table 3.6: Canada’s International Investment Position by Region

| The Position of Foreign Direct Investment in Canada | | | | |
|--|--------------|----------|--------------|----------|
| | 1990 | | 2006 | |
| | Value | % | Value | % |
| All countries | 130,932 | | 448,858 | |
| United States | 84,089 | 64.2 | 273,705 | 61.0 |
| European Union | 31,524 | 24.1 | 118,365 | 26.4 |
| Japan | 5,222 | 4.0 | 11,309 | 2.5 |
| ROW | 10,098 | 7.7 | 45,479 | 10.1 |
| The Position of Canadian Direct Investment Abroad | | | | |
| | 1990 | | 2006 | |
| | Value | % | Value | % |
| All countries | 98,402 | | 523,260 | |
| United States | 60,049 | 61.0 | 223,623 | 42.8 |
| European Union | 20,625 | 21.0 | 144,446 | 27.6 |
| Japan | 917 | 0.9 | 4,919 | 0.9 |
| ROW | 16,811 | 17.1 | 150,272 | 28.7 |

Source: Statistics Canada, “Canada’s International Investment Position.”

According to Canadian statistics, Canada's direct investment position in Japan in 2006 was \$4.9 billion (equivalent to 0.9% of Canada's direct investment abroad, up from \$507 million or 0.6% of Canada's overall FDI in 1989). In 2006, Japan was Canada's 15th largest destination for direct investment.

On the other hand, Japan's direct investment position in Canada in 2006 was \$11.3 billion (equivalent to 2.5% of total direct investment in Canada from overseas), making Japan Canada's sixth largest source of direct investment. Looking at changes in Japan's investment position in Canada, the total stock has doubled since 1989, although Japan's share of total foreign investment in Canada has fallen from 4.0%.

Direct investment from Japan to Canada is directed primarily toward the manufacturing industries but also toward commerce and trade, and the financial and insurance industries. According to a survey by the Embassy and Consulates General of Japan in Canada, more than 600 subsidiaries and affiliates of Japanese companies were operating in Canada in 2006.

3.3.2 Investment in the Bilateral Economic Relationship

More Japanese companies are starting to focus on Canada as an investment destination in order to gain access to the North American market, while taking advantage of factors such as lower operating costs in Canada compared to the United States. The growing number of mergers and acquisitions by Japanese companies is also certain to have an impact on investment in Canada. Similarly, Canadian companies often invest in Japan to gain access not only to Japan but to the whole Asian market through the incorporation of their products into exported Japanese goods and services.

The automotive sector in Canada is one with a particularly significant Japanese presence, with Toyota, Honda, Hino and Suzuki (CAMI GM-Suzuki) all producing vehicles in Canada. Toyota, Honda and Hino, along with several Japanese Tier 1

suppliers,¹¹ have recently announced new greenfield investments to increase their production in Canada. According to the Japan Automobile Manufacturers Association (JAMA), Japanese automotive companies in Canada employ over 62,000 people, directly and indirectly, in fields ranging from vehicle and parts manufacturing, to head offices and dealerships.

Japanese investment goes well beyond the automotive sector, with over 600 Japanese companies present in Canada. There has recently been renewed interest by Japanese companies in Canada's natural resources sector, as well as agri-food, and information and communications technologies. This is evidenced by recent investments by companies such as Itochu Canada Ltd. in coal mining, Nisshin Seifun Group's building of a second flour mill, and Cybird's investment into Montreal's Airborne Entertainment, a cellular phone content developer.

Over 100 Canadian companies have established a commercial presence in Japan. Nearly half of these are engaged in the information and communications technologies (ICT) sector, Celestica among them, often as Tier 2 and Tier 3 suppliers. Canadian service companies are also present in a number of sectors, including the transport and financial services sectors. Manulife Insurance, in particular, has significant investments in the financial sector. In the automotive sector, Canadian parts suppliers Magna and ABC Group are expanding their operations and working closely with Japanese automobile manufacturers in order to supply parts to assembly plants located throughout the world.

Examples such as these show the crucial role that investment plays in the context of the economic relationship between Canada and Japan. Investment is responsible not only for creating a significant number of jobs, but also for enabling the large amount of trade between the two countries.

¹¹ A Tier 1 supplier is a supplier under direct contract to manufacturers.

Chapter 4

SUMMARY OF CURRENT AREAS OF BILATERAL ECONOMIC COLLABORATION

4.1 Introduction

Recognizing the importance of establishing strong bilateral commercial relations over and above cooperation in multilateral and regional forums, the Canadian and Japanese governments have developed a myriad of intergovernmental institutions designed to facilitate bilateral trade and investment and lay the groundwork for a productive government-to-government dialogue. Reflecting the depth and breadth of the bilateral relationship, this has resulted over the years in a complex network of joint mechanisms.

At the same time, these interactions have been punctuated by efforts of the two governments to raise the level of coherence and coordination in the relationship. A notable early endeavour involved the conclusion in 1954 of the Canada-Japan Agreement on Commerce. Then, in 1976, the Canada-Japan Framework for Economic Cooperation was signed, creating the first major bilateral trade and investment mechanism established between the two countries, the Joint Economic Committee (JEC). Most recently, encouraged by the private sectors of both countries, Canada and Japan signed, in November 2005, a new strategic, forward-looking Canada-Japan Economic Framework.

However, despite some growth in bilateral investment, the overall trend in two-way trade has remained relatively sluggish, and both governments have identified a need to bring renewed energy and focus to ensuring that the relationship reaches its full potential. This Joint Study provides for a re-examination of Japan-Canada collaboration and consideration of ways to address new and emerging challenges and opportunities.

4.2 Early Results under the Canada-Japan Economic Framework

To reinforce existing bilateral economic ties and address new and emerging commercial challenges and opportunities, the Canada-Japan Economic Framework aims to reinvigorate the existing government-to-government dialogue, lay the groundwork for future cooperation on priority areas, and emphasize the role of the private sector in guiding future initiatives. The Economic Framework includes a list of 15 priority areas of cooperation: social security, anticompetitive activities, food safety, customs, trade facilitation, transportation, investment, science and technology, information and communication technology, e-commerce, e-government, energy and natural resources, climate change, tax convention, and tourism promotion.

Since the launch of the Canada-Japan Economic Framework in January 2005, significant progress has been achieved by the two countries in a number of the priority areas of cooperation. Of key importance to the Canadian and Japanese governments and private sectors was the conclusion of an agreement on anticompetitive activities and an arrangement on customs cooperation, as well as the signing of an agreement on social security and a memorandum of understanding (MOU) on bilateral investment promotion between Canada's Department of Foreign Affairs and International Trade (DFAIT) and the Japan External Trade Organization (JETRO).¹² In addition to these early accomplishments, steps have been taken to enhance policy dialogue in other priority areas, such as cooperation in food safety.

¹² The Japan External Trade Organization (JETRO) is an incorporated administrative agency that works to promote trade and investment between Japan and the rest of the world.

Social Security Agreement

Recognizing the potential to increase and facilitate two-way investment, Canada and Japan signed the Japan-Canada Social Security Agreement in February 2006, and both parties are taking the necessary steps to implement the Agreement. The successful signing of the Agreement represents the endeavours of the two governments to facilitate the creation of an enhanced environment investment in both countries. The Agreement is good news for Japanese companies operating in Canada and Canadian companies operating in Japan, which were previously paying significant pension contributions for workers sent to the other country. These workers will now be able to continue paying into their own country's pension plan while posted abroad, if the length of their assignment is expected to be less than five years. The Agreement will also help to protect the pension rights of nationals of both countries.

Cooperation on Anticompetitive Activities

Facilitating cooperation between competition authorities is increasingly important, as reducing trade barriers accelerate the globalization of markets and raise the risk of anticompetitive business activity with transborder effects. Acknowledging that the sound and effective enforcement of the competition laws of each country is essential to the efficient functioning of their markets and trade between them, Canada and Japan signed a Cooperation Agreement on Anticompetitive Activities, which came into effect on October 6, 2005. Building on previous informal relations, enhanced cooperation will be essential in combatting anticompetitive business practices that could have negative impacts in the markets of both countries. The first formal bilateral meeting under the Agreement between the heads of the respective competition authorities took place in March 2006. Discussions focused on enforcement, policy and international matters of common interest.

Customs Cooperation Arrangement

Reaffirming the importance of customs cooperation, especially its usefulness in combatting smuggling and enhancing the security and facilitation of the international trade supply chains, Canada and Japan entered into an enhanced bilateral customs cooperation arrangement in June 2005. Under the terms of this arrangement, both countries will assist each other to ensure proper application of customs laws, as well as to prevent, investigate and repress customs offences. The arrangement is an example of both countries' efforts to increase international cooperation and will provide more opportunities for Canada and Japan to maximize their contributions to the World Customs Organization.

4.3 Overview of Ongoing Collaboration

Building on the basic structures that guide and manage the overall bilateral relationship, Canada and Japan have also developed, over the years, cooperative mechanisms in a wide range of areas to deal with specific areas of key importance. The two countries have focused on enhancing their mutual capacities in innovation and in knowledge-based industries through regulatory cooperation, science and technology cooperation, and investment promotion. This section provides an overview of key areas that form important building blocks of the bilateral cooperative relationship.

Regulatory Cooperation

As tariffs continue to be reduced, regulatory cooperation is becoming increasingly important in helping to ensure the efficient cross-border flow of goods and services. The Economic Framework outlined the importance both countries placed on regulatory cooperation in the context of facilitating commerce and reaffirmed this commitment, *inter alia*, in the context of our

1999 bilateral Regulatory Cooperation Arrangement in the Global Partnership for the 21st Century. The Economic Framework is expected to encourage Canadian and Japanese regulatory authorities to further promote the 1999 Arrangement's goals of closer cooperation and collaboration toward building mutual confidence between regulatory authorities.

Regulatory reform is important for both governments. In Japan, a Three-Year Plan for the Promotion of Regulatory Reform was established in March 2004, replacing an earlier program instituted under the Council for Regulatory Reform (Council). This body was further renewed as the Council for the Promotion of Regulatory Reform, and a new component, a ministerial-level headquarters for regulatory reform, was added. The Council consists of members of the private sector, academia and others. Its role is to consult publicly (including with international partners), debate various policy options and make recommendations to the Cabinet.

Through this Council, the Canadian Embassy in Tokyo, in close consultation with the Canadian Chamber of Commerce in Japan (CCCJ), has made regular annual submissions to the Japanese regulatory reform authorities, not only in areas of particular concern to Canada, such as telecommunications and financial services, and building standards, but also with respect to more cross-cutting structural issues related to the overall investment environment in Japan. The Council was reorganized in January 2007 in order to address critical issues such as the creation of an open and energetic economic society and works in close cooperation with the Headquarters for the Promotion of Regulatory Reform headed by the Prime Minister and made up of the full Cabinet. Then, the Government of Japan laid out a new three-year plan on regulatory reform on June 22, 2007, based on the results of the "Third Report on the Promotion of Regulatory Reform and the Opening Up of Government-driven Markets for Entry into the Private Sector" (published December

25, 2006) and the “First Report on the Promotion of Regulatory Reform” (published May 30, 2007).

Similarly, Japan has made submissions of its requests on regulatory issues to Canada through the Embassy and Consulates General of Japan in Ottawa, Toronto, Calgary, Vancouver and Montreal in close cooperation with its chambers of commerce in these regions. The Toronto Japanese Association of Commerce and Industry (Toronto Shokokai) actively works with the Japanese government in submitting recommendations for regulatory reform to Canada in broad areas of regulations such as taxation and investment issues.

Canada also recognizes the importance of regulatory reform and introduced in 2002 a government-wide initiative known as “Smart Regulation” aimed at improving the Government of Canada’s regulatory system. It strives for a better-coordinated, more transparent system that remains forward-looking and accountable to citizens. One of the key results of this initiative is the Government of Canada’s *Cabinet Directive on Streamlining Regulation*, which came into force on April 1, 2007. The new *Directive*, which replaces the previous *Regulatory Policy*, takes a life-cycle approach to regulating and introduces specific requirements for the development, implementation, evaluation and review of regulations. A number of other projects have been initiated to strengthen the policies, processes and tools needed to sustain high levels of regulatory performance and facilitate continuous improvement.

Regulatory cooperation between Canada and Japan continues to advance through a myriad of bilateral and multilateral avenues. Complementing the annual submissions to the respective regulatory bodies and dialogue that takes place at the JEC, bilateral regulatory cooperation mechanisms and dialogue exist in specific sectors – from forestry to financial services – which aim to promote better understanding of each other’s regulatory environment and to resolve issues where possible. As outlined

in Chapter 2, Canada and Japan also work in concert multilaterally and regionally, such as in the APEC forum.

Science and Technology

The 1986 Agreement on Cooperation in Science and Technology forms the foundation of the Canada-Japan science and technology (S&T) relationship. Since the signing of the agreement, collaboration between the Canadian and Japanese governments, as well as between universities and research institutions, has multiplied. These partnerships offer each country the opportunity to achieve more than it could independently, in terms of knowledge creation, innovation capacity and commercialization. The Ninth Joint Committee Meeting pursuant to the Agreement, held on October 12, 2005, noted the impressive array of bilateral cooperative projects being undertaken within and outside the framework of the Agreement with the participation of both the public and private sectors.

Significant complementarities between Canada and Japan in S&T exist in the areas of life sciences, information and communication technologies, earth sciences, environment, space, nanotechnology and renewable energy. A foundation has been laid for the promotion of research collaboration in many of these fields through the work of the Canada-Japan Joint Committee on Science and Technology Cooperation and its Joint Panels on Space Science, Earth Science and Environment, and Brain Science.

There have also been notable achievements in people-to-people exchanges, such as the Co-op Japan Program, in which Canadian undergraduate students in engineering, science and other disciplines pursue internships in Japanese companies. Through partnerships between the Canadian granting councils and the Japan Society for the Promotion of Science (JSPS), Canadian graduate students and postdoctoral researchers can conduct short-term research stays in Japan and receive an introduc-

tion to Japanese science policy and infrastructure. S&T personnel exchanges between agencies also allow for collaborative research opportunities, such as a recent exchange between the Japan Aerospace Exploration Agency (JAXA) and the Canadian Space Agency to work on the development of small satellites. Furthermore, Japan's Nanotechnology Research Institute (NRI) has signed an MOU with Canada's new National Institute of Nanotechnology (NINT) under which an NRI expert was seconded to NINT.

In addition, Canada and Japan continue to work together on the Women in Science, Engineering and Technology (WISSET) Exchange Lectureship Program co-administered by the Science Council of Japan and the Royal Society of Canada. The program provides an opportunity for outstanding female researchers from both countries to present lectures to a range of audiences highlighting the role of women in research. Integrating women more effectively into the S&T workforce is an important goal for both Canada and Japan.

In order to advance the commercialization of S&T, the two governments have held research and development (R&D) commercialization workshops, in collaboration with the private sector, to seek ways to cooperate more in this crucial area. In addition, both governments are involved in the promotion of industry-level cooperation between the Kingston Fuel Cell Centre and fuel cell work in the Mie Prefecture of Japan to expand bilateral alliances and potentially lead to increased investment partnerships and commercialization possibilities. There are similar instances of such joint commercialization efforts in the field of biotechnology involving the private sector and facilitated by government. Indeed, in recent years Canada has held a series of science seminars in Tokyo, including a Science/Biotech Week in 2006 that included presentations by experts from both countries on their respective experiences with commercialization of R&D.

Investment Enhancement

The 21st century economy is characterized as one of competitiveness on a world scale, involving more intensive use of international networks of production and global value chains. Investment can clearly be key in both accessing and participating in these networks. Both governments assign importance to investment, in general terms and with respect to each other specifically. However, as noted in Chapter 3, while the role of investment is becoming increasingly important in the context of the economic relationship between Canada and Japan, the scale of investment between the two countries has yet to realize its full potential.

As such, bilateral investment promotion was identified early on in the development of the Economic Framework as a significant component of this initiative. Recognizing the benefits of enhanced bilateral investment, in May 2005, DFAIT and JETRO signed an MOU on bilateral investment promotion cooperation designed to identify and advance key areas of cooperation in this regard. The MOU aims to lay the foundation for greater information exchange and cooperation in investment promotion activities in key industry sectors. Canada and Japan have since identified information and communications technology, biotechnology and services as areas for initial focus.

The two organizations have undertaken a series of bilateral investment promotion seminars in Toronto, Montreal and Vancouver. These seminars, which attracted more than 400 participants, were designed to help Canadian companies think about growing their markets in Japan and Asia, as well as to raise Japanese companies' awareness of the comparative advantages to be gained by expanding existing operations in Canada. Similarly, a series of sector-specific investment seminars have been organized by the Canadian Embassy and Consulates in Tokyo, Osaka and Nagoya on a variety of sectors including natural resources, agri-food, transportation, and information and communications technology.

With a view to advancing commitments undertaken in the MOU, DFAIT and JETRO are making efforts to develop the program of joint investment events, in particular to tailor such outreach to more closely suit specific investment prospects in the various regions of Canada and Japan. The two organizations are also focusing efforts on examining the road ahead in terms of possible joint initiatives to increase awareness of the respective advantages of establishing investment partnerships in both countries.

In addition to these promotional efforts, investment facilitation is a key factor in increasing bilateral investment. Some results of efforts on this front are represented by recently signed instruments, such as the Social Security Agreement and the Cooperation Agreement on Anticompetitive Activities, which will help create an enabling environment to enhance conditions for the Canadian and Japanese private sectors to invest further in each other's country.

Tax Convention

Canada and Japan concluded their existing tax convention in 1986 and amended it in 1999, in order to address the issues of double taxation and fiscal evasion with respect to taxes on income. Since then, both countries have recognized the importance of a continuing dialogue on tax-related issues and an exchange of views on improving the tax convention so that it responds to current business trends.

Air Services

The efficient flow of people, goods and services between Canada and Japan has a significant impact on the bilateral trade and investment relationship. Canada and Japan have had a long-standing air services agreement in place since 1955 and have worked closely over the years to ensure the efficient operation of this agreement. The most recent consultations, which

took place in early 2007, have resulted in a range of improvements, such as the replacement of a complex formula of capacity unit co-efficient to a simplified method of determining capacity entitlements, the removal of prescriptions on the use of certain aircraft types, and the modernization of other aspects of the agreement that benefit both sides. Delegations have decided to meet again in early 2008. Such development is consistent with the main thrust of the Economic Framework, which supports continuing the existing dialogue between Canadian and Japanese aeronautical authorities to support people-to-people, commercial and cultural exchanges between the two countries.

Intellectual Property

As the importance of intellectual property is increasing rapidly, Canada and Japan are discussing possible areas of cooperation in the field of intellectual property, including patent examination. For example, the Japan Patent Office and the Canadian Intellectual Property Office are consulting on (1) establishing mechanisms that allow a patent applicant to obtain a foreign patent expeditiously by providing the foreign patent office with the search and examination results of the domestic patent office (Patent Prosecution Highway), (2) establishing a new legal framework for patent filing and examination that allows a patent applicant to obtain a foreign patent at a low cost by providing the foreign patent office with the search and examination results of the domestic patent office (New Route), and (3) establishing information infrastructures and systems to make patent prosecution history available for patent offices through the Internet. Canada and Japan also work together on intellectual property issues in a number of international forums, including the G8, the Asia-Pacific Economic Cooperation Forum (APEC) and the Organisation for Economic Co-operation and Development (OECD).

4.4 Sectoral Initiatives

Canada and Japan have a long history of positive commercial relations that span the full spectrum of economic activity. In a number of sectors, this has led to the creation of public and private sector mechanisms to improve efficiencies, address issues and develop understanding and cooperation. This section provides a selective overview of sectors where active cooperation, in particular between the governments of Canada and Japan, plays an important role in facilitating trade, investment, and science and technology links between our two countries.

Agriculture and Food

Japan is the largest net importer of agricultural products in the world, while Canada is a leading supplier to Japan of a number of products of key agricultural interest, such as meat, grains, oilseeds and seafood. Moreover, the agriculture and food sector is an area of strong partnership between Canada and Japan that serves the needs of producers and consumers.

The broad partnership has led to collaboration on issues of market access between Agriculture and Agri-Food Canada (AAFC) and the Canadian Food Inspection Agency, together with the Japanese Ministry of Agriculture, Forestry and Fisheries, the Ministry of Health, Labour and Welfare, and the Food Safety Commission. There have been ad hoc discussions on an ongoing basis, both directly and through our respective embassies. As a result of our constructive relationship, a number of trade irritants have been successfully resolved in a mutually beneficial manner, including most notably the progress achieved in 2005 addressing problems associated with access for Canadian and Japanese beef in each other's markets.

Food safety, which has seen tremendous cooperation over the last two years, is one of the priority areas under the Economic Framework. Given the increase in global food trade, new

inspection technologies and new risks, there are many challenges that both countries share in this area. Under the terms of the Economic Framework, the two governments determined specifically to cooperate and share experiences to respond to these challenges through enhanced dialogue and a joint work plan between the relevant Canadian and Japanese authorities. This work plan was finalized in July 2006 and builds upon existing cooperation and dialogue that has achieved important results. For example, past food safety seminars in Japan provided a useful means for exchanging information and experiences on ways to communicate risk to the public.

Canola is an area of long-standing close relations between Canada and Japan, given the mutually dependent nature of our markets in this sector. Japan is Canada's largest market for canola, while Canada is the main supplier of Japan's imports of canola and rapeseed. Since 1976, the Canada-Japan Canola Consultations and Pre-consultations have been an important semi-annual event involving government and industry participants. This 30-year history has fostered mutually beneficial consultations, where issues of concern to the Canadian canola industry and the Japanese importing and crushing industry are discussed, and approaches for addressing these concerns are explored.

With respect to the promotion of agriculture and food trade, Canada and Japan have a long history of cooperation in helping to develop mutually beneficial business opportunities. AAFC, the Canadian Trade Commissioner Service and JETRO play an important role in promoting bilateral trade and investment in the agriculture and food sector by building strong networks and partnership opportunities between Canadian and Japanese firms.

In addition, while agricultural scientific cooperation between Canada and Japan at the institutional level remains relatively modest, exchanges between AAFC and the Japanese private sector have been enhanced through a number of joint science and trade initiatives. For instance, AAFC and a major Japanese

international trading company signed an MOU under which a collaborative scientific cooperation project is providing value-added to commodities suited for the Japanese market. Furthermore, AAFC and the Canadian Embassy in Tokyo have been working closely over the last few years to build a stronger Canada-Japan relationship in the agri-food sector and position Canada as a serious scientific and commercial partner. To date, this partnership has proven highly successful given the significant commercialization opportunities resulting from investment into Canadian scientific research.

Forestry and Building Products

The relationship between Canada and Japan in forestry dates back to the first shipment of Douglas fir lumber from Canada to Japan in 1903, and the years since have been punctuated by significant events. For instance, after the Great Kanto Earthquake of 1923, large Canadian forest companies shipped lumber to Japan to help with reconstruction. In the early 1960s, as the cost of domestic harvesting rose in Japan, Canada became one of Japan's largest suppliers – a trend that continues today. Then in the late 1960s, during a housing shortage, and at a time when the Japanese government was actively looking for new housing technology, a new era of collaboration in forestry and building products between our governments and private sectors arose.

Collaboration and technical exchanges between our governments and private sectors have continued and contributed to many improvements in housing technology and regulations. One key example is in respect of premium-grade softwood lumber and related building products. In the early stages, the sawmill industry in British Columbia worked with Japanese lumber importers and home-building companies to produce premium-grade softwood for Japan, resulting in the special "J" grade, as it is known today. In 1973, the Canadian Council of Forest Industries committed to an aggressive market develop-

ment program in Japan with the support of the Canadian federal and provincial governments and industry. Such efforts, combined with the cooperation of the Japanese government, which was seeking to increase housing options for its citizens, led to the formal approval in 1974 of lumber grading standards and a building code for wooden prefabricated two-by-four structures, the construction of which was not previously possible in Japan. In May 2004, Canada-Japan collaboration led to Japan's recognition and acceptance of large-scale four-storey two-by-four wooden structures in previously restricted zones or urban areas. Subsequently, in October 2006, post-and-beam structures also received Japanese ministerial approval, now on par with two-by-four and other fire-resistant structures. In conjunction with the September 2006 Japanese certification of the strength properties of Canada's new kiln-dried hemlock grade (E120-F330), these technical achievements mark an important step in regaining ground in the Japanese lumber market.

More broadly, the Canadian and Japanese governments have established close relations at the officials' level through the formation of a number of regular bilateral mechanisms (or trilateral with the United States), which are intended to facilitate the exchange of knowledge and address issues of mutual concern. These mechanisms include the Building Experts Committee/Japan Agricultural Standards Technical Committee (BEC/JASTC) Meeting, Canada-Japan Housing Committee (CJHC) and Canada-Japan Housing Research and Development Workshop. The BEC/JASTC is a process launched by Japan with the objective of exchanging views and information, as well as promoting mutual understanding, and involves annual meetings between the Japanese, Canadian and U.S. governments and industry. The CJHC is a biannual policy conference between the Canada Mortgage and Housing Corporation and the Japanese Ministry of Land, Infrastructure and Transport. The Housing R&D Workshop is a science and technology bilateral

mechanism that enables Canadian and Japanese researchers to share and exchange recent advances in the area of housing research and technology development.

Information and Communications Technologies (ICT)

Canada and Japan are global leaders at the forefront of innovation in the field of ICT. The two governments place great importance on this sector and recognize the potential to enhance our respective objectives through collaboration, not only at the multilateral level (e.g. International Telecommunications Union), but also bilaterally. In addition, Canada and Japan are actively endeavouring to strengthen cooperation among research centres, universities and the private sector.

The key bilateral forum for cooperation in this area is the Canada-Japan Telecommunications Policy Consultations, which were established in 1984. These consultations provide an opportunity to share perspectives on key policy developments, to exchange a wide range of opinions on appropriate regulatory decisions and cooperation concerning ICT in Canada and Japan, as well as to identify and advance mutual collaboration in research and development. In 2006, Industry Canada, the Japanese Ministry of Internal Affairs and Communications, and the Ministry of Economy, Trade and Industry signed a joint statement in the field of anti-spam.

Collaboration between various Canadian government departments and JETRO is also ongoing and productive. JETRO has supported Canada's efforts to enhance ICT partnerships by sending information technology (IT) missions to Canada and by providing Canadian IT companies with information and advice about the Japanese market. In April 2003, JETRO and Industry Canada signed an MOU intended to increase levels of data sharing and technical cooperation and to improve electronic access for both Canadian and Japanese firms.

With a view to facilitating business-to-business cooperation in this sector, Industry Canada and DFAIT have worked with JETRO to organize a number of partnering initiatives for ICT companies in Canada, Japan and third countries. For example, partnering initiatives at the Technology Bizmatch at the 2005 Combined Exhibition of Advanced Technologies¹³ in Japan, as well as the Technology Bizmatch at the 2006 Cellular Telecommunications and Internet Association exhibition in the United States, provided an opportunity for Japanese and Canadian ICT companies to meet with potential partners to explore possible areas of cooperation.

In addition, Canada's Communications Research Centre (CRC) and Japan's National Institute of Information and Communications Technology (NICT) have worked together for a number of years, focusing mainly on wireless optical networking, satellite communications and high-definition video conferencing. Past projects include the first-ever demonstration of telemedicine using high-definition television technology. In October 2003, these two national research centres signed an MOU to further solidify the cooperative relationship, promoting exchange opportunities for Canadian and Japanese researchers as well as an ongoing sharing of information and expertise. The collaboration between CRC and NICT has led to an advancement in innovation and knowledge, and to technologies and applications that have tangible social and economic benefits.

Trade in Services

Trade in services is playing a leading role in the transformation to knowledge-based economies in Canada and Japan, where global electronic networks facilitate the delivery of those services to previously inaccessible markets. Trade in services, sig-

¹³ The largest international exhibition in Asia for the technology and electronics sectors.

nificantly, represents the fastest-growing component of bilateral trade, and the two countries continue to work together through the WTO to further enhance the conditions for services trade. In certain areas, such as tourism and financial services, Canada and Japan have developed bilateral cooperation mechanisms that promote dialogue and address mutual areas of concern.

For over two decades, Japanese visitors to Canada have had a significant positive effect on the Canadian tourism industry. More recently, Canadian visitors to Japan have been steadily increasing. The Canadian Tourism Commission and the Japanese Ministry of Land, Infrastructure and Transport continue to cooperate through the Canada-Japan Tourism Conference to identify ways and opportunities to help facilitate increased bilateral tourism flows. Tourism promotion was highlighted as one of the areas of cooperation under the Economic Framework, and both governments have committed to make their best efforts to increase, by 2010, the volume of tourist flows between the two countries to one million (800,000 Japanese tourists to Canada and 200,000 Canadian tourists to Japan).

In the area of financial services, bilateral financial consultations have been a very useful forum for advancing mutual interests on a range of financial services trade and investment-related issues, as well as reinforcing the basis for further cooperation and information sharing on financial sector issues. The Canada-Japan Financial Consultations occur every 18 to 24 months, involving the Ministry of Finance and the Financial Services Agency on the Japanese side, and the Department of Finance, the Office of the Superintendent of Financial Institutions, and the Bank of Canada on the Canadian side. Most recently, in June 2005, Canadian and Japanese authorities met in Ottawa to discuss a range of financial sector policy and international financial cooperation issues, including Asian economic cooperation, the G7 process, and the WTO Doha Round negotiations regarding financial services.

Energy

Commercial activity between Canadian and Japanese firms in the field of energy has been growing steadily over the past few years. This burgeoning relationship includes a wide variety of energy ties, including with regard to coal, uranium, nuclear energy services, oil sands, petroleum and gas, and alternative energies (e.g. wind, solar and fuel cell technology). Canada has a long-standing record as a reliable supplier of uranium to Japan's electrical utilities. Japanese commercial interests have invested directly in Canadian uranium, oil sands and coal production capacity, with Japan supplying oil sands technology, heavy equipment and pipeline pipe, for example. Given the breadth of this sector, the role of government in the domain of bilateral energy ties to date could be characterized as somewhat limited. With the emergence of energy and energy security issues, consideration should be given to enhancing bilateral relations on energy. On the Canadian side, the federal, provincial and territorial governments have been active in facilitating and promoting investment and trade in energy resources and technologies between Canadian and Japanese firms.

One example where bilateral cooperation is rather developed is in nuclear energy, dating back to an agreement signed in 1959 for cooperation in the peaceful use of atomic energy. Since then, there have been extensive exchanges regarding matters affecting nuclear safety and radiation protection, fuel storage and transportation, as well as technical cooperation on the development of products such as pumping seals for application in nuclear power installations in both Canada and Japan. Cooperation also exists at various levels within the nuclear industry, nuclear power regulatory bodies, utilities and research agencies. Collaboration has even extended to third markets, such as the joint cooperation on the construction of two CANDU¹⁴ reactors

¹⁴ CANDU stands for CANada Deuterium Uranium.

in China, in addition to joint efforts to develop an advanced CANDU reactor.

Another example of bilateral cooperation that is starting to develop in this sector is the partnership for onshore natural gas hydrate production research. Japan Oil, Gas and Metals National Corporation (JOGMEC) and Natural Resources Canada (NRCan) have been conducting joint gas hydrate research since the late 1990s. In 1998, the two organizations drilled the first gas hydrate well in the Northwest Territories, Canada, to study the properties of this resource. This was followed by the world's first production test in the same field in 2002 (together with a consortium of international partners), with encouraging results. Currently, JOGMEC and NRCan have negotiated an agreement to conduct a longer-term test of production feasibility in the Mackenzie Delta. The first winter drilling season has been completed and show encouraging results. These tests are an integral part of both countries' strategy to develop the technology for commercial production of natural gas from gas hydrates by 2016.

4.5 Role of the Private Sector and Other Key Stakeholders

For over a century, and even before the establishment of formal diplomatic relations between Canada and Japan, the Canadian and Japanese private sectors have been at the forefront of building mutually rewarding trade relations. The nature of these interactions has covered the full spectrum of activity, with many groups constituting broad membership across the Canadian and Japanese private sectors, while others remain sector-focused. Regardless of the composition of these business associations, the Canadian and Japanese private sectors have been responsible for creating numerous bilateral trade and investment links and driving innovative initiatives that have contributed significantly to the overall economic relationship. Although the latter half of the 1990s saw the end of some formal business mechanisms, such as the Canada-Japan Business Council,

other mechanisms have remained strong, and these have led the push for renewal of the bilateral commercial relationship.

From the very beginning, the Canadian and Japanese private sectors have worked to identify areas in the economic relationship that have been underperforming and to highlight opportunities for greater ambition in furthering the bilateral relationship. Most recently, the Canadian Council of Chief Executives (CCCE)¹⁵ and the Nippon Keidanren¹⁶ were key players in leading efforts to revitalize the bilateral economic relationship and examine options for further enhancing trade and investment between the two countries. While private sector leaders have been the traditional focus of stakeholder consultations undertaken by both governments, non-governmental organizations such as the Canada-Japan Forum have also been important in providing strategic advice and recommendations to both Canada and Japan on ways to enhance the bilateral relationship.

Canada-Japan Forum

Recognizing the challenges facing the bilateral relationship, the Prime Ministers of Canada and Japan established the Can-

¹⁵ Founded in 1976, the CCCE is devoted to strengthening Canada's economy and society through the development of sound public policy in Canada, North America and the world. Its member chief executive officers represent all sectors of the Canadian economy. Key members of the CCCE have been constant supporters of the Canada-Japan economic relationship, working closely with government and private sector organizations in Canada and Japan to further promote trade and investment between the two countries.

¹⁶ Nippon Keidanren (Japan Business Federation) is a comprehensive economic organization created in May 2002 by the amalgamation of Keidanren (Japan Federation of Economic Organizations) and Nikkeiren (Japan Federation of Employers' Associations). In 2005, their membership comprised 1,329 companies, including 130 industrial associations and 47 regional economic organizations. Keidanren, notably through its Committee on Canada, has been active in promoting measures to improve the business environment in both countries by making representations to the governments of both countries.

ada-Japan Forum in 1991 to serve as a non-governmental "eminent persons" group mandated to develop recommendations for a stronger and more effective bilateral partnership. Forum members are selected to represent the business, media, academic and arts communities from each country and serve the unique objective of ensuring ongoing, high-level input by Canadian and Japanese citizens into the bilateral relationship. The recent co-chairs of the Forum were Don Campbell, Executive Vice-President of CAE Inc. (and former Canadian Ambassador to Japan), and Peter Yoshiyasu Sato, Advisor, Tokyo Electric Power Company (and former Japanese Ambassador to the People's Republic of China).

The Forum produced reports in 1992, 1995, 2000 and 2006. On the economic front, Forum reports have made recommendations on bilateral trade and investment between Canada and Japan, NAFTA's impact on Canada-Japan trade, the value of open bilateral economic cooperation (including the promotion of joint investment and cooperation at APEC), improvement of access to the Japanese market, a potential Canada-Japan free trade agreement, and the establishment of a multilateral trade organization, which was eventually realized in the WTO.

The most recent report, which was presented to the Prime Ministers of Canada and Japan on June 28, 2006, suggested that Canada and Japan should intensify their efforts to deepen the bilateral economic relationship, with emphasis on, *inter alia*, the promotion of trade and investment (including a free trade agreement as the ultimate objective of this Joint Study, addressing challenges of small and medium-sized enterprises), the promotion of tourism, and joint research on environmental and energy issues.

CCCE and Nippon Keidanren: A Long History of Cooperation

The CCCE and Nippon Keidanren have worked together for more than two decades on the Canada-Japan economic relationship and have been central in the development and conclusion of the Eco-

conomic Framework. Following a meeting between the CCCE and Nippon Keidanren in 2004, both organizations called for strengthened bilateral economic ties and pressed for the creation of a framework agreement between the two governments. This call for action expedited the decision by the two governments to move ahead with plans for a new economic framework that had been under joint consideration. Shortly thereafter, in January 2005, the Canadian and Japanese Prime Ministers launched the development of the Canada-Japan Economic Framework. At their last meeting in Canada, in November 2005, CCCE and Nippon Keidanren business leaders issued a joint statement urging the Canadian and Japanese governments to move swiftly toward a discussion of opportunities to enhance the bilateral relationship (the joint statement is available at www.ceocouncil.ca or www.keidanren.or.jp).

Canadian Chamber of Commerce in Japan (CCCJ)

The CCCJ has been working since 1975 to promote the interests of Canadian business in Japan and encourage the development of commerce between the two countries. Its members represent a broad cross-section of business leaders and entrepreneurs from Canada, Japan and other countries. Over the years, the CCCJ and the Embassy of Canada in Tokyo have forged a close working relationship through joint efforts to promote Canadian products in the Japanese market and through the work of the CCCJ's Committee on Trade Policy.

Japanese Chambers of Commerce

The Japanese chambers of commerce in Toronto, Calgary, Vancouver and Montreal have been working to promote friendly relations between Canada and Japan through economic, commercial and industrial activities by members, as well as to develop and maintain good relations with the community at large. In particular, the Toronto Japanese Association of Commerce and Industry (the Toronto

Shokokai), which began its activities in 1957, represents many Japanese companies doing business in Canada. The Consulate General of Japan in Toronto has been cooperating closely with the Toronto Shokokai to promote business between Canada and Japan.

4.6 Conclusion

The Economic Framework has galvanized a mutually beneficial history of bilateral cooperation and provided a foundation for re-energizing the relationship. The aim is to give further impetus to the broad array of sectoral and other forms of cooperation that have evolved over the decades of partnership.

Canada and Japan clearly enjoy a rich and prosperous relationship involving a myriad of actors in both the public and private sectors. The existing panoply of multilateral and bilateral policy and private sector mechanisms provides a solid basis upon which to build more vigorous economic relations in the periods ahead. The challenge will be to improve the breadth and variety of mechanisms for collaboration with a higher degree of dynamism, energy and direction so that they play the most effective role possible in generating increased economic activity and prosperity for Canada and Japan. To assess how best to achieve that aim, it is necessary to move beyond an assessment of existing mechanisms – the focus of this chapter – to an analysis of remaining challenges to the further expansion of bilateral trade and investment, which is the focus of the next chapter.

Chapter 5

EXAMINATION OF THE EXISTING MEASURES LIMITING THE FULL POTENTIAL OF TRADE AND INVESTMENT

5.1 Introduction

Canada and Japan share a long history of mutually beneficial trade and investment. Although this relationship remains healthy and largely problem-free, our ability to fully exploit the potential of the bilateral trade and investment relationship can often be limited by existing measures, as well as informal constraints to trade such as foreign business customs. However, in order to overcome these limitations, it is first necessary to identify and understand them. Drawing from input received from the Canadian and Japanese private sectors during roundtable consultations, held in Tokyo and Toronto in April and June 2006 respectively, as well as other sources, this chapter examines existing measures in both Canada and Japan that are seen to limit the full potential of trade and investment between the two countries.

In order to guide the work of the Joint Study Working Group, Canada and Japan conducted consultations with the private sector, in line with the Japan-Canada Economic Framework. The representatives and experts of various sectors were invited to express their views on existing measures of the two countries that may hinder the full development of potential trade and investment, and any other views that would enhance the existing economic relationship. Based on requests from some of the speakers and to preserve confidentiality, this report will not attribute remarks to specific groups or individuals.

Domestic consultations with the private sector have played a vital role in the development of this Joint Study. The valuable input of the private sector and other key stakeholders in both

Canada and Japan also helps ensure that this Joint Study is both comprehensive and meaningful.

The following section is based on the views of the private sector in Canada and Japan and does not necessarily reflect either government's positions.

5.2 Consultations at the Second Session of the Joint Study Working Group (in Tokyo)

5.2.1 Participation from the Private Sector

Consultations with the private sector were conducted on April 6 and 7, 2006, on the occasion of the second session of the Japan-Canada Joint Study Working Group, which was held in Tokyo from April 5 to 7, 2006. Two groups from industrial sectors, two trade/business organizations, one expert on international trade and one expert on food economics and environmental economics participated in these consultations.

5.2.2 Views of the Japanese Private Sector

(1) On a Free Trade Agreement (FTA)/Economic Partnership Agreement (EPA)

(i) Group A

This group recommended that the governments and private sector continue to discuss the possibility of the establishment of an FTA or EPA for the time being while urging that the Joint Study also consider, as matters of high priority, issues such as an investment agreement (including the liberalization of trade in services), dialogue on regulatory reform, the mutual recognition of standards and the promotion of other cooperative issues. This group stated that consideration should be given to Japan's sensitive products, such as agriculture, forestry and fisheries prod-

ucts, and called for multi-level efforts to create a foundation for free economic activity through comprehensive EPAs with countries and regions important to Japan, although concern was expressed about Canadian FTAs and negotiations that could lower the competitiveness of Japanese exports to Canada. The group also pointed to Article XXIV of the General Agreement on Tariffs and Trade (GATT), stipulating that the parties to an FTA or EPA must ensure trade liberalization by eliminating tariffs with respect to "substantially all the trade." It further explained that tariff elimination or reduction should be considered in conjunction with the progress in the WTO Doha Development Agenda negotiations.

The group also explained that if there was a change in *status quo* of the international environment surrounding Japan and Canada, such as Canada signing FTAs with other countries, thus reducing the competitiveness of Japanese goods exported to Canada, an FTA or EPA would be, on the whole, greatly advantageous for both Japan and Canada. In such a case, it was recommended that the two sides should begin consultations on an FTA or EPA. Particular concern was, in fact, expressed that the Japanese business community must keep in mind the progress of ongoing negotiations between Canada and other countries as they pursue FTAs or EPAs, with strong concern noted especially over the progress on a Canada-South Korea EPA/FTA.

(ii) *Group B*

Another group mentioned that Japan is by far a net exporter of industrial goods and the world's largest net importer of agricultural products. It explained that in such a situation, EPAs would not benefit each sector in an equal manner and that Japan should not pursue trade expansion in industrial sectors at the expense of its agricultural sector. The group also stressed the importance of domestic agricultural production in terms of food security

and maintenance of the multifunctionality of agriculture, which they felt serves to prevent floods, to secure water resources and to maintain landscapes and food safety, estimating the impact to be 8 trillion yen per year. The group indicated that EPAs should include necessary exceptional measures for sensitive products in each country. It further pointed out the large gap in agricultural production conditions between Japan and Canada and that the negative impacts of tariff elimination would be unbearably large to Japan. The group concluded that a negotiation with Canada, which would include tariff elimination on agricultural, forestry and fisheries products would be impossible, especially when these products made up 57% of total imports from Canada in 2004, a significant amount of which are products sensitive to Japan. Such an agreement could not be qualified as an FTA (under Article XXIV of the GATT, which defines free trade agreements as covering "substantially all the trade") if these products were excluded. This group mentioned that Canada was a major exporter of agricultural products sensitive to Japanese agriculture and contended that tariff elimination for these products would have negative effects on ongoing domestic agricultural policy reforms. It also explained that liberalization exclusively with Canada would create imbalances with other exporting countries, which may arouse serious opposition from countries not having similar preferential arrangements with Japan.

(iii) Group C

The third group shared the results of their survey conducted with Japanese companies operating in Canada on their expectations regarding an FTA. Asked to rank the most beneficial future FTA and cite the expected benefits, 103 companies expressed their wish for a Japan-Canada FTA, and 68 companies among 103 ranked it as the most beneficial. Seventy-nine companies explained that an FTA would improve market access, and 29 companies replied that it would improve the business environment,

such as through amendments of laws related to labour and other areas. In this context, this group summarized that there was a high expectation for a Japan-Canada FTA among the Japanese companies in Canada.

(iv) A Canadian Group

A Canadian group identified the conclusion of a Canada-Japan FTA as one of its top three priorities, the others being the Social Security Agreement and the Tax Treaty. The group argued that consumers in the two countries would benefit greatly through lower prices, better services, more choices and better use of tax money. An FTA would promote entrepreneurship, innovation and job creation among small and mid-sized companies. The group felt that an FTA would open markets to new goods and services, promote competition (e.g. by reducing costs through tariff savings), promote innovation and increase flows of people between the two countries. It would also help bring about increased transparency in public procurement and bidding practices, along with better pricing of services such as banking and insurance products. The group also emphasized Canada as an FTA partner, including Canada's dynamic markets in labour and capital, its very efficient and strong economy, and a politically stable environment backed by a well-developed financial system.

(v) Japanese Expert A

An economist suggested that, while in the past the WTO played a central role in liberalizing world trade, the WTO function to harmonize world trade rules has come to its limit, and in the future this role would shift to bilateral or regional FTAs where countries share common interests and have a mutual understanding of the nature of liberalization between them. Concerning agricultural products, he indicated that in many cases it is difficult to show Japanese farmers the merits of liberalization

because they usually do not have a comparative advantage. He concluded that, in those cases, the feasibility of an FTA would depend on whether it would be possible to exclude those sensitive products from tariff elimination. He raised a number of such examples from the world's existing FTAs¹⁷. He suggested that rice, wheat and barley, dairy products, sugar and pork are some of Japan's important and sensitive items, and these import restrictions were mostly changed to Tariff Quota items in the GATT Round, and he explained that the elimination of tariffs on those products through FTAs with the U.S., Australia and New Zealand would surely result in the destruction of Japanese agriculture. Finally, he stressed the importance of the role of agriculture and small-scale farming in rural areas, explaining the concept of multifunctionality of agriculture. He also addressed the importance of understanding Japan's efforts to reform its agriculture as well as the anxiety of Japanese people, who depend on foreign countries for 60% of their food.

(vi) Japanese Expert B

Another economist argued the importance and significance of East Asian economic integration, describing it as an immediate "economic need" due to Japan's long-term commitment to the region and the existence of international production and distribution networks. He further stated his views by introducing the fragmentation theory, which enables cost reduction in production blocks and low-cost service links that connect production blocks. Based on this theory, he explained the present political and geopolitical situation surrounding Japan and Asia. He ex-

¹⁷ This economist gave the following examples of exemptions of tariff lines: (1) NAFTA with Canada and Mexico on dairy products, sugar, etc. Canada had 78 items, and Mexico had 87 items exempted. (2) In the EU-Mexico FTA, the EU postponed negotiation on beef, pork, etc., and Mexico postponed on rice, wheat, pork, chicken, etc. (3) Korea-Chile postponed negotiation on beef, chicken, mandarin, etc.

pressed his concern about whether Japan can be comfortable under a China-dominated East Asia. He also stressed that although East Asian economic integration makes sense, it was too early to think of an "East Asian community" in the European sense. But he explained that there was a possible development of plurilateral FTAs among industrialized countries in Asia Pacific that would counterbalance China. Finally, he raised the question as to whether an "Economic Framework" without an FTA could be attractive enough in this era of regionalism, while also arguing that trade protection on agriculture was the only major obstacle for Japanese economic diplomacy¹⁸. He concluded that to have a certain degree of freedom in economic diplomacy in Asia Pacific, policy reform in the agricultural sector was urgently needed from Japan.

(2) On Tariff Elimination and Reduction

(i) Group A

Regarding actual bilateral tariff elimination and reduction, this group explained that the Japanese companies' responses to the questionnaire revealed that tariff items and rates impeded business operations. The group listed major Canadian tariffs, such as those on automobiles and trucks (6.1%), wheels for railway rolling stock (9.5%), photographic film for exposure in cinematographic cameras (6.5%) and electrical insulators of ceramics (3.0%). On the Japanese side, tariffs on spruce-pine-fir products (4.8%), oriented strand board (6.0%) and beef (38.5%) were mentioned.

¹⁸ This economist explained that major Japanese imports from Canada are agricultural, forestry and fishery products. He further explained that although the proportion is high, the number of sensitive items is limited.

(ii) Group C

The third group introduced the interviews it conducted with Japanese companies in Canada on tariffs. It revealed that Japanese companies felt Canadian tariffs on automobiles were high 6.1%.

(3) On Regulatory Issues

(i) Group C

This group conducted interviews with Japanese companies in Canada regarding potential Canadian regulatory issues. It revealed five areas of concern. First were the visa issuance procedures. It said that issuance delays occurred with highly skilled workers that they believed to be valuable to Canada. Second was the area of mutual recognition of safety standards. The companies urged the necessity for a simpler recognition process to facilitate business. Third was the protection of intellectual property. The group pointed out that counterfeits and pirated copies of Japanese goods were easily accessible and sold in some shopping malls, though no specific example was provided. Fourth was the area of tax investigations and application procedures. The group suggested that accelerated, simpler and more accurate procedures were needed, explaining that in some cases transfer pricing investigation could take up to five years. Fifth was an appeal for better coordination between the federal and provincial governments of Canada. One example given was a case that was repealed by the federal government after being approved by a provincial government.

(ii) Group A

This group explained that improving the business environment and promoting regulatory reform in both countries should be pri-

ority areas. The questionnaire conducted by this group revealed that 46.7% of respondents requested regulatory reforms, focusing primarily on the need to eliminate requirements in Canadian corporate law regarding the nationality of executive officers and the avoidance of double taxation between Japan and Canada. The group claimed that resolving these issues would benefit Japan's business community as a whole and would also spur investment in Canada.

This group also identified the liberalization of investment and trade in services as a major priority. This was especially focused on regulations governing foreign investment in financial and insurance services.

The group further requested the establishment of a framework for mutual domestic regulatory reform to develop the business environment, drawing inspiration from other regulatory reform dialogues among industrialized countries.

The group suggested that the Finance Ministers of both countries establish a framework for regular dialogue on tax reform with a view to implementing rapid and practical tax reform measures. It also suggested that they should begin without delay and work toward the conclusion of such an agreement.

The group also listed the following areas of regulatory reform to improve Canada's business environment:

- i) Harmonization of federal and provincial regulations and elimination of trade and investment regulations that the group viewed as unnecessary: The group stated that the duplication of regulations by both federal and provincial levels created complication in applying permits and licences. In some cases, provincial regulations were stricter than the federal ones.
- ii) Liberalization of investment-stage operations and facilitation of business operations to ensure continuity: Priority should be on removing requirements in corporate law regarding the nationality of executive officers and liberalizing insurance services. The group further claimed that an in-

vestment agreement with Canada should ensure that corporate laws be changed to eliminate nationality requirements, following the example of such clauses in Japan's investment agreements with other countries. They stressed that the abolition of nationality requirements was one of the most important regulatory reform issues for the business community and called for swift resolution on this issue.

- iii) Harmonization of standards and certification, and facilitation of the movement of natural persons: It was recommended that the two countries study the harmonization of standards and recognition of professional licences (such as engineering licences). It also stressed the importance of visa issuance procedures being simplified and made more efficient, as well as having the visa validity periods extended.
- iv) Investment promotion and measures to reduce the cost of doing business: The group addressed the importance of tax reforms to promoting investment and reducing business operating costs, including the elimination of capital tax and elimination of duplication whereby unemployment insurance premiums must be paid in both countries.

(4) Specific Areas for Cooperation

One group suggested that the conclusion of a Japan-Canada investment agreement would effectively and efficiently spur regulatory reforms in Canada and the liberalization of Canada's trade and services. The agreement should be comprehensive and advanced, fitting the two countries' developed status. The group stressed the importance of ensuring that the Canadian federal and provincial governments grant most-favoured-nation treatment and national treatment, and stressed that they should prohibit the application of performance requirements, obligating the maintenance of current investment conditions and protecting investment assets.

Besides these areas, the group also introduced the responses of the questionnaires on the following areas of interest:

Energy and natural resources: The group introduced the need for better infrastructure to promote more trade in natural resources with Japan and other Asian countries by constructing a large crude oil export terminal on Canada's west coast, constructing a pipeline to supply the terminal, and supporting investment to promote further development of the oil sands and subsidiary industries.

Tourism promotion: It requested enhancing advertising campaigns to promote tourism and cooperation in developing tourism-related products and also suggested campaigns to attract tourists to Vancouver for the 2010 Winter Olympics.

Investment: Seminars sponsored by JETRO and International Trade Canada were appreciated. It suggested that this type of activity be continued and expanded.

Transportation: It claimed that rail freight fares were high in Canada because of the monopoly of local transport. This should be overcome to boost the transportation of energy and other resources.

Information technology: Recognizing that Canada's electronics industry was highly developed, some companies expressed their hope to absorb know-how and to secure human resources in Canada. For these purposes, the group suggested periodic technical exchange sessions, training of promising engineers and promotion of personnel exchanges.

Food safety: A large part of Japan's imports from Canada is food-related products, and there was a request for cooperation with Canada to ensure food safety. In one example, a respon-

dent mentioned the need to collaborate on issues involving residual pesticides and mould poisons in wheat.

(5) Others

(i) Group B

A group emphasized the specific features and multifunctionality of agriculture in Japan and its decreasing domestic production, causing a decline in its self-sufficiency ratio of food (40%) and a high amount of food imports. The group suggested that, instead of pursuing an FTA that includes tariff elimination in agricultural products, Japan and Canada should rather pursue ways to enhance their economic relations through an exchange of views on agricultural matters, the maintenance of favourable and stable trade relations in agricultural products, and the negotiation of agreements for a stable supply of natural resources and the promotion of investments.

(ii) Group C

Another group introduced the problems Japanese companies face on infrastructure. It introduced concerns by Japanese affiliates that the Port of Vancouver was reaching its capacity limit (short of port workers and space at bulk terminals), resulting in extra stays at the port. It also introduced concerns by the Japanese affiliates that there was an unstable supply of electricity, causing "brownouts," which forces factories to stop machines and affects product quality. This group also explained its role to increase investment between Japan and Canada in both directions. For this purpose, the group spoke of the various seminars and workshops they organized in Japan and Canada. It also explained that it had arranged a number of missions from Canada's automobile parts industry to Japan, as well as dispatching Japanese missions to Canada.

(iii) A Canadian Group in Japan

The group expressed appreciation for the signing of the Social Security Agreement between Canada and Japan, a measure they had strongly advocated over the last decade. It took the opportunity to urge for the swift implementation of the Agreement, which would lead to easier staff transfers and increased investment for years to come.

With respect to the tax treaty, the group explained that the renegotiation of the existing bilateral tax treaty was needed. A renewed and improved agreement, the group argued, would provide greater certainty to taxpayers and avoid discriminatory taxation. It explained that the costs of existing taxation measures were mostly concentrated in royalties, dividends and interest payments that were subject to withholding taxes of 5%-15%.

5.3 Consultations Held in Canada

In Canada, in order to ensure that this study adequately reflects the views and priorities of the private sector, the Government of Canada undertook a domestic consultations process designed to solicit diverse opinions and views from Canadian stakeholders, as well as provincial and territorial governments. This included a notice in the *Canada Gazette* (the "official newspaper" of the Government of Canada), letters sent by the Minister of International Trade to key stakeholders, and an article in *CanadExport* (the official trade newsletter of the Department of Foreign Affairs and International Trade).

To complement this process, Canada and Japan also undertook a second set of joint consultations, similar to those held in Tokyo in April 2006, in Toronto from June 5-6 with key stakeholders on the margins of the third session of the Canada-Japan

Joint Study Working Group¹⁹. These consultations proved useful in continuing to inform both governments of the challenges faced by the business community and options for dealing with them. Comments received both through the *Gazette* process and through the public consultations are detailed below.

5.3.1 Summary of Trade and Investment Barriers and Other Issues in Japan

Canadian stakeholders generally see Japan as an important trade and investment partner, and while the commercial relationship is largely problem-free, there is a strong view that the relationship is underperforming. Stakeholders have welcomed the Joint Study process as a key opportunity to explore ways of re-energizing the relationship, but have clearly stressed the need for substantial outcomes and not more dialogue or processes. In order to move forward toward increased economic cooperation, many stakeholders recommended that the joint study lead to the negotiation of a high-quality FTA that provides guaranteed market access, as well as provisions for dispute settlement in a fair and transparent manner. Some argued for models of economic integration that would go even beyond an FTA, with one stakeholder calling for a comprehensive Japan-Canada Economic Integration and Partnership Agreement (EIPA) that would include most, if not all, aspects of Japan-Canada economic activity. This approach would include all of the traditional elements of a comprehensive FTA, but also incorporate additional elements to reflect new global realities. Adopting a forward-looking vision of deeper economic integration by means of an EIPA, it was argued, could include a dialogue on capital markets and exchange rates, greater cooperation on energy matters and climate change, improvements to the tax convention, as well as the promotion of institutional coopera-

¹⁹ The Joint Study Working Group meetings were then held in Ottawa on June 8, 2006.

tion in areas including intellectual property rights, security and trade matters, standards and certification, and possibly information technology security. Another stakeholder, who also called for an ambitious trade and investment agreement including trade liberalization, noted that Canada and Japan are, among major world economies, two countries that stand to lose the most from missed opportunities to bolster the international trading system, be it multilaterally or bilaterally.

In terms of specific barriers, stakeholders raised a number of tariff and tariff-related issues, services and investment restrictions, and non-tariff barriers that could potentially be addressed effectively in an FTA (or economic partnership agreement). Such an approach would also mitigate concerns of Canadian business about the potential negative effects of Japan's preferential agreements with other countries. There was recognition of various sensitivities in both Canada and Japan in this regard, but some stakeholders were of the view that only a small portion of total trade is truly sensitive and that these concerns could be overcome - either by a better understanding of the nature of the market or through provisions in a prospective agreement.

In addition to the prospect of an FTA, many stakeholders saw value in increasing promotional efforts between the two countries to facilitate greater awareness about the significant opportunities in each country. Moreover, updating the current air services and tax treaties was seen as a key priority.

Tariffs and Related Issues

Tariffs are one of the traditional trade policy tools used to restrict or limit trade in particular products for a variety of reasons. Generally, Japanese tariffs on industrial goods are low, though some concerns have been expressed in areas such as the forestry sector. High tariffs in Japan do exist in the agricultural sector and can be, in some cases, prohibitive to market participation. In 2004, Japan's overall average applied most-favoured-nation

(MFN) tariff was 6.3%; for agricultural products it averaged 16.1%, compared with 3.8% for non-agricultural products. In addition to the tariffs themselves, some concerns have also been raised in respect of related issues, such as escalating tariffs for value-added products, tariff parity, tariff rate quotas and subsidies. A number of these issues are outlined below.

While the Japanese tariff on beef is not prohibitive per se, Canadian beef exporters have indicated that they face a number of tariff and related barriers in Japan that restrict their market access. Canadian beef exports currently face an applied tariff of 38.5% (though the WTO bound rate is 50%). Japan also maintains an emergency tariff measure, allowing the tariff to return to the bound rate of 50% in the event that beef imports exceed a certain level (i.e. when quarterly imports increase by more than 17%). According to Canadian industry, this is particularly problematic at a time when Japan has partially lifted its ban on Canadian beef products (closed in 2003 due to the detection of BSE in Canada) and Canadian beef imports would be merely returning to previous levels of trade (prior to the ban, Canada had traditionally been Japan's third largest supplier of beef).

Similar concerns have been raised by Canadian pork exporters regarding the emergency tariff measure on pork. Japan is the world's largest importer of pork, and Canada has been increasingly filling the demand. However, Canadian pork exporters commented on the emergency tariff measure on pork, which snapbacks the gate price to the bound level whenever total imports in a given quarter are 19% higher than the previous three-year average from the start of the Japanese fiscal year to the end of quarter, raising the minimum import price by approximately 25%. As currently administered, this measure creates considerable market fluctuations for Canadian suppliers.

Canadian stakeholders have expressed concern that Japan's import tariff regime on processed vegetable oil products (e.g. canola/rapeseed and soybean) restricts Canadian exports of these products to Japan. Japan's tariffs on imported cooking oils

are applied on a specific rate basis (i.e. yen per tonne) and the rate for canola and soybean oil (10.9 yen/kg) is higher than for other similar vegetable oils (e.g. corn oil at 5 yen/kg and sunflower oil at 8.5 yen/kg).

The Canadian cereal grain industry has expressed concern regarding the restrictiveness of Japanese tariff quotas on wheat and barley. Although the in-quota duties are free, Japan maintains extremely high over-quota tariffs for wheat and barley at 55yen/kg and 39yen/kg, respectively (WTO bound). Wheat flour is also subject to high tariff quota rates, with an in-quota tariff of 25% and an over-quota tariff of 90yen/kg. Stakeholder concerns were also raised regarding restrictive tariff rate quotas facing Canadian pulses and special crops (e.g. peas, beans), as well as on the tariffs for processed products.

Canadian stakeholders have expressed concern regarding other agricultural products facing high tariffs, including refined sugar, wherein Japan has the highest refined sugar tariff protection in the world. Food products that contain sugar are also subject to high tariffs, in the range of 20%-30%. In some cases, specific tariffs apply, raising similar concerns as with vegetable oil products.

Japan has liberalized its fish and seafood import regime over the years. Although Japan's average tariff rate on fishery products is low (4%), Canadian stakeholders noted the higher rates on a few key products including salted herring roe (8.4%), frozen scallops (10%) and sea urchins (7%), and the import quota on scallops.

Canadian stakeholders have expressed concern regarding tariffs on spruce-pine-fir (SPF) lumber and panel products. Japan's system of tariff classification distinguishes between the species and dimensions of lumber irrespective of end use. Therefore, Canadian SPF lumber imports are subject to a duty of 4.8%, whereas other species imported for the same purpose enter duty-free. The 6% tariff on softwood plywood and ori-

ented strand board is also considered to significantly limit Canadian exports.

Tariff escalation and tariff parity issues have also been common concerns. Tariff escalation is the practice of charging lower tariffs on unprocessed goods and high tariffs on their semi-processed or processed end products. For example, while Japan has a 0% tariff on import of unprocessed mustard seed, the tariff rates for mustard flour range from 7.5% to 9%. Another example is on value-added beef products, where the tariff increases at the bound level of 50%, which has a prohibitive effect. In addition, concern has been raised across a number of different products, including oils and wood products, concerning the disparity between tariffs applied to like products within the group. For example, canola and soybean oils face tariffs of 10.9 yen/kg for crude oil and 13.2 yen/kg for refined oil, while other oils enjoy lower or, in some cases, no tariffs.

In the shipbuilding sector, although the shipbuilding industries of Canada and Japan are quite different, in terms of both size and the types of vessels manufactured, the Canadian industry is concerned that trade liberalization in this sector and the removal of the 25% Canadian tariff would likely have a detrimental impact on the industry. The industry representative indicated that they were not opposed, in principle, to trade liberalization with Japan, but highlighted the need to have in place a domestic transformative policy before tariffs are eliminated. The industry noted that over the past 20 years, the Canadian shipbuilding industry has been under increasing pressure in the face of highly subsidized international competition.

Tariff issues also go both ways in the context of Canada's consultations. A Japanese group in Canada pointed out that Canada is committed to reducing custom tariffs as part of its APEC action program. Areas of special concern are automobiles and trucks, wheels for railway rolling stock, photographic films for exposure in cinematography, and electrical insulators of ceramics.

Aerospace and Defence Industry

Canada has significant defence and aerospace sector capabilities in both peacekeeping and conventional defence, and stakeholders are keen to enhance industrial cooperation with Japan. Canadian industry stakeholders identified two issues that they believe require attention: the need for Canada to address restrictions on the export of Canadian automatic firearms to Japan; and the need for a mechanism to facilitate the issuance of industrial security clearances.

Also, Canadian industry stakeholders highlighted private business practices that they feel limit their participation in the Japanese market, such as buyer-seller networks and the requirement to show prior experience in Japan.

Tax Convention

Various stakeholders urged Canada and Japan to update their current agreement on the avoidance of double taxation (Double Taxation Agreement DTA). The purpose of the DTA is to prevent double taxation and to provide a level of certainty about the tax rules that will apply to particular cross-border transactions. Ensuring relief from double taxation is desirable because of the negative effects double taxation can have on the expansion of trade and the movement of capital and labour between countries. Canada and Japan agreed in 1999 to a protocol amending the 1986 Canada-Japan DTA. However, the Canadian and Japanese business communities have expressed the need to renegotiate the existing DTA to take into account more recent DTAs negotiated between major trading partners, as well as the need to reflect current trade and investment trends. A Japanese group in Canada emphasized the amendment of the Japan-Canada tax treaty so that the Canadian subsidiaries of Japanese firms can be exempted, as are U.S. corporations.

Investment

In terms of foreign direct investment (FDI), Japan remains the largest recipient of Canadian direct investment in Asia. The number of Canadian companies investing in Japan continues to increase at a modest rate, with few reports of formal barriers preventing investment. However, key Canadian investors, including the aerospace industry, have flagged some barriers related to investment in Japan, including restrictive processes for making regulations and the lack of transparency in the area of industry standards development and product certifications. Other barriers experienced by Canadian companies investing in Japan are informal, tending to be related to issues such as language and culture, as well as differences in business practices. Many Canadian stakeholders also noted, in particular, the potential value of greater promotional efforts about the valuable investment opportunities in both countries. Some Japanese firms based in Canada noted that lowering the residency requirements for corporate directors in Canada, as well as eliminating the duplicate employment insurance payments, would be beneficial, especially for smaller companies.

Services

Trade in services between Canada and Japan has been growing rapidly over the past few years. In part, this reflects the fact that there are few formal barriers restricting trade in services in Japan. In general, Canadian service suppliers indicate that they enjoy a high level of access to the Japanese services market. Nevertheless, improvements could be made in certain areas that would promote trade in services between our two countries. With respect to the cross-border supply of professional services such as legal, accounting and engineering services, Japan often maintains commercial presence requirements and Mode 4 (movement of natural persons) restrictions in the General

Agreement on Trade in Services. Canadian service suppliers have also identified an interest in promoting greater transparency with respect to domestic regulations in Japan related to licensing requirements and procedures, qualifications requirements, and standards. In the financial services sector, a few issues have been raised, including the strict firewall provisions that prohibit the efficient use of shared infrastructure, as well as the new Corporation Act (Law No. 86), which appears to prohibit the activity of Japanese branches of foreign companies that are incorporated offshore.

Canadian stakeholders also highlighted the key role played by air services in promoting the bilateral trade relationship between Canada and Japan. They have expressed an interest in strengthening the air services relationship through regular bilateral channels.

Regulatory Environment, Transparency and Other Issues

Technical regulations, industrial standards, and sanitary and phytosanitary (SPS) requirements play an important role in facilitating the trade in goods and protecting public health and safety and animal and plant health, but they vary from country to country and may impose unnecessary restrictions on trade. Just as tariffs can have a limiting effect on trade, non-tariff barriers can be just as effective in restricting trade. For example, having too many different standards complicates business transactions for producers and exporters. Lack of access in a timely fashion to changes in laws and regulations can also be problematic.

On the agricultural side, concerns have been expressed that Japanese SPS measures should be more transparent and be based on internationally accepted standards. A key example relates to the beef sector and the BSE-related Japanese import ban on certain Canadian beef products. While noting the actions taken to date in Japan in this regard, stakeholders expressed concern that Japan is still applying a more restrictive SPS bar-

rier against Canadian beef than permitted under the internationally agreed standard established by the World Organization for Animal Health (OIE). Other interests have also been expressed in cooperating on regulations so as to facilitate trade, such as in organic products. In addition, some Canadian stakeholders also raised concerns about subsidies in the Japanese agricultural sector as a barrier to trade. For example, Japanese government subsidies in the form of taxes on imports are believed to subsidize wheat production in Japan, leading to a distorting effect on trade.

On the industrial side, many raised issues related to the forestry and building products sector. Over the years, Canada and Japan have developed mechanisms with a view to dealing with many regulatory and standards issues in an efficient manner. However, there are still some outstanding measures that are limiting trade in this sector. Of particular importance is the Building Standards Law (BSL). Some stakeholders indicated that test methods, criteria and related restrictions do not fully recognize internationally accepted practices.

Several members of the Canadian automobile sector expressed concerns about the closed nature of the Japanese market to Canadian-made vehicles, given that, among major OECD auto-producing nations, Japan had an import penetration rate of 4.7%, compared to the OECD average of 48.2%. Vehicles and related parts represent the largest sector of two-way trade between Canada and Japan annually. However, the trade in automotive products is overwhelmingly one-way, with Japan enjoying a \$5.5 billion surplus in automotive products in 2005. Despite duty-free access for automobiles and efforts to increase market share, Canadian stakeholders indicated that Canadian automobiles and parts remain largely shut out of the Japanese market. Given the unbalanced nature of trade in automotive products, Canadian vehicle manufacturers are of the view that any policy option (e.g. FTA) needs to put in place mechanisms that can help ensure that the trade imbalance is eliminated on a permanent basis. Some other members of the Canadian automo-

tive sector were of the view that multilateral trade liberalization was the preferred approach since bilateral agreements can create imbalance among members. There were also some concerns about a perceived lack of common standards that complicates the certification process.

In the building products sector, there are concerns over how standards are developed and the lack of transparency and consultations in the standards-setting process. Regulatory and transparency issues are not limited to trade in goods. Concerns have also been expressed in relation to services and investment, as noted above.

In addition to the various sectoral and technical issues (e.g. tariffs and regulations) raised by many stakeholders, it was also mentioned by some stakeholders that there are non-formal barriers that act to hinder the relationship. Broadly speaking, there can sometimes be a perception of "friendly indifference" that can act as an invisible barrier. Some observed that despite a good level of cultural exchanges between Canada and Japan, business interest does not always appear to follow. From a government perspective, it was noted that there was a need to raise the level of political interaction (e.g. in the form of increased ministerial visits). In that vein, it was also suggested that an FTA would send a strong signal that each country is "open for business." Language and cultural differences were also highlighted as key challenges for both Canadian and Japanese firms.

A Japanese group in Canada pointed out that Canada is alone amongst its G7 contemporaries in its residency requirements, as stipulated in the Canada Business Corporation Act. They also expressed concerns over the visa issuance process for skilled workers and tourism-related workers and asked for clarification of the policies on granting visas. With regard to the Social Security Agreement, the group appreciated that the duplicated pension contribution was solved, but further requested exemption from the requirement to participate in the payment of employment insurance premiums. Also, they asked for a review

of Liquor Control Board of Ontario policies to reduce complexity and increase clarity and flexibility, to smooth the flow of liquor.

Japan's FTAs/EPAs with Other Countries

Free trade agreements (FTAs) are trade policy instruments that aim to liberalize and remove barriers in trade and investment between member trading partners. However, they may also have the effect of diverting trade away from other countries that are not party to the FTA. In recent years, Japan has been engaging in an increasing number of FTAs that could negatively affect and limit trade with Canada. A range of issues have been expressed by stakeholders in this regard and include, for example, concern about the potential impacts of Japan's EPAs in sectors such as beef, pork, seafood and wheat, among others. Japan's conclusion of EPAs with countries other than Canada will lead to a destabilizing effect on bilateral trade, as trade diverts to countries granted preferential access under an FTA.

Chapter 6

ANALYSIS OF THE IMPLICATIONS OF FURTHER PROMOTION AND LIBERALIZATION OF BILATERAL TRADE AND INVESTMENT

6.1 Overview

The previous chapters examined past and current trends of Canada-Japan economic relations from bilateral, regional and multilateral perspectives. This chapter examines the benefits and costs of the further promotion of bilateral trade and investment, including economic modelling on the potential impact of trade and investment liberalization. Key to this chapter are the views and comments received from the private sectors of the two countries. The representatives of the business communities suggested that, though both countries have favourable relations, some existing measures hinder the full potential of trade and investment, and requested that the governments address these measures to further invigorate bilateral economic relations. Based on these consultations, as well as the analysis of previous chapters and the economic modelling, this chapter also indicates possible policy options both countries should consider for enhancing their future bilateral economic relations.

6.2 Economic Analysis of Trade Liberalization between Canada and Japan

This section examines the economic impacts of the further promotion of trade and investment between Canada and Japan to provide a comprehensive assessment of trade liberalization and facilitation, drawing on a range of quantitative economic models²⁰.

²⁰ It should be noted that economic models are a simplification of reality and rely on various assumptions. Therefore, modeling results should be used only to infer

The economic modeling analysis suggests the following: (1) elimination of all tariffs between Canada and Japan would benefit both countries in terms of income and production, (2) the impacts of liberalization would vary across sectors in terms of increases and decreases, and (3) preferential trade liberalization between Canada and Japan may have adverse trade diversion effects on the economies of third countries, such as the United States, while trade between Canada and Japan would increase.

While these results generally conform with expectations, given the opportunities for gains to be made through liberalized trade between Canada and Japan, caution is required with regard to the interpretation of specific estimates generated in this simulation.

First, the scope of the modelling exercise is restricted to the elimination of tariffs on goods. Yet, modern FTAs also contain other provisions such as on trade in services, investment, customs cooperation and other areas of cooperation as well as trade facilitation, that address non-tariff barriers to trade that would yield benefits for business. These various measures can work to expand bilateral commerce in various ways. For example, complementarities between investment and services liberalization in the context of an FTA and goods trade can lead to a stronger response of goods trade to an agreement than tariff considerations alone would indicate. However, these types of provisions are not captured by the economic modelling analysis.

Second, computable general equilibrium (CGE) models may underestimate expansion of two-way trade in differentiated products and firm-level export gains even in sectors in which a country experiences net import gains, as these models do not capture certain types of gains that come from the expansion of the range of products traded as a response to trade liberalization,

the probable effect of bilateral trade liberalization between Canada and Japan and the magnitude and direction of such impacts.

as well as new trade and business enthusiasm spurred by the announcement of an FTA. Furthermore, the greater certainty about market access by setting disciplines on non-tariff barriers to trade in goods and services, investment, the movement of business persons and others would reduce the perceived risk and encourage investment and trade. An FTA would also have the effect of encouraging firms to deepen the bilateral economic relationship to take advantage of the greater potential derived from the agreement.

Third, the results can be quite sensitive to the model's structure, level of aggregation of sectors and regions, omitted factors, estimates of key parameters, and the assumptions implicit in the design of the simulation. There are a number of important caveats that should be borne in mind when considering the results reported in this study. For example, the level of aggregation for some of the data used in the model combines products that would not be expected to undergo similar economic adjustments from trade liberalization, which may result in either understatements or overstatements of the sectoral trade impacts. As well, the 2001 base year of the model does not account for the rapid changes in global trade patterns and tariffs in recent years, such as China's accession to the WTO, so the estimates may not be consistent with actual protection levels subject to elimination by a Canada-Japan agreement. Another concern is that the model does not account for the high degree of integration in North American commodity markets, which prevents significant differences in pricing between Canadian and U.S.-produced commodities. As such, any gains to the terms of trade will generate a production response from North America, rather than just Canada, which will tend to overstate the production impacts in Canada while understating the positive impacts in the United States.

Taking these various considerations into account, the macroeconomic impacts reported below should be considered as broadly indicative of the potential for significant economic

benefits for both Canada and Japan. However, the composition of those gains should be treated more cautiously since they are subject to greater uncertainty. At the same time, the sectoral impacts reported below must similarly be interpreted with considerable caution, as regards both the structure of sectoral impacts and the sources of sectoral gains in terms of volume versus prices.

6.2.1 The Impacts of Merchandise Trade Liberalization

This subsection provides a quantitative economic analysis of the impacts of merchandise trade liberalization between Canada and Japan. It is assumed that the two countries would remove trade barriers in a preferential manner once and for all.

Following the conventional approach of estimating the impacts of trade liberalization, a CGE model of global trade is employed. CGE models are designed to assess the effects of policy change on the equilibrium structure of the economy, detailing the changes in resource allocation, production and trade across sectors, and the resulting overall impacts on national economic welfare and output.

The particular CGE model used for the simulations in this study is the Global Trade Analysis Project (GTAP) model, version 6. While this model is primarily designed to assess the static effects on resource allocation, certain dynamic aspects are incorporated: (a) a dynamic capital formation mechanism and (b) productivity improvement effects. The database for this model corresponds to the global economy in 2001.

6.2.1(a) Macroeconomic Impacts

Trade liberalization stimulates trade by lowering the prices of tradable goods. Exporting sectors gain increased access to the market of trading partners, while domestic consumers gain access to lower-priced imported goods. As production in a liberal-

izing country adjusts in line with its comparative advantage, domestic production resources, land, capital, labour, and intermediate inputs, are used more efficiently. These combined effects, one from access to foreign markets and the other from adjustment in the domestic market, are expected to result in an overall expansion of production and an increase in economic welfare. In addition to these "static" efficiency gains, economic benefits would be expanded dynamically through increased incentives for capital formation and productivity improvements stimulated by the increased competition generated by trade liberalization.

The simulation outcomes on the macroeconomic impact of trade liberalization between Canada and Japan are shown in Table 6.1.

Table 6.1: Macroeconomic Effects

| | | Japan | Canada |
|----------------------|-----------|-------|--------|
| Real GDP | (%) | 0.17 | 0.32 |
| GDP Deflator | (%) | -0.17 | 0.76 |
| Utility | (%) | 0.17 | 0.59 |
| | (millions | | |
| Equivalent Variation | U.S. %) | 6,176 | 3,809 |
| Exports | (%) | 0.42 | 0.43 |
| Exports to Canada | (%) | 18.22 | - |
| Exports to Japan | (%) | - | 120.4 |
| Imports | (%) | 0.56 | 1.0 |
| | (millions | | |
| Trade Balance | U.S. \$) | -583 | 353 |

Both Canada and Japan would obtain benefits in terms of gains in income and production. These gains are significantly larger for Canada in percentage terms compared with those for Japan: Canada's GDP expands by 0.32% in real terms compared with 0.17% for Japan. The difference in size of impact is mainly a reflection of the relative sizes of the two economies: Japan's

GDP in the reference year was approximately five times larger than that of Canada. In addition, Japan's share in Canada's two-way trade, which is around 3%, is higher than that of Canada's share in Japan's two-way trade, which is around 1.5%.

Japanese macroeconomic gains measured in terms of change in utility, a key indicator of welfare improvements in a CGE model analysis that may be understood as a proxy for real consumption, would amount to 0.17%. Canada's gains in terms of increased utility would be proportionately greater: Canadian utility would increase by 0.59%. However, because Japan's economy is larger than that of Canada, in terms of absolute changes, Japanese gains would be larger than those in Canada. Looking at welfare improvements, measured by changes in equivalent variation, which is defined as the lump sum payment to households required in the pre-FTA scenario to leave them as well off as in the post-FTA scenario, Japan's economic benefits would amount to almost US\$6.2 billion (in 2001 dollars) compared with Canada's US\$3.8 billion. Moreover, breaking down the welfare gains, measured in terms of changes in the equivalent variation, indicates that the impact of trade liberalization by Japan would be significantly larger than that by Canada for both the Canadian and the Japanese economies. Japan's gains would come primarily from more efficient resource allocation. In contrast, Canada's gains would be derived to a greater extent from improvements in its terms of trade.

Japanese export volume is estimated to increase by 0.42% and import volume by 0.56%. Meanwhile, bilateral trade would be significantly boosted. Japanese exports to Canada would expand by 18.2%. However, largely because of the deterioration in terms of trade, the Japanese trade balance would decline. Canadian export and import volumes are estimated to increase by 0.43% and 1.00% respectively. These rates of change are similar to those in Japan. One notable difference is that exports to Japan are estimated to expand by 120.4%. In addition, the Canadian trade balance would increase.

6.2.1(b) Impacts by Sector

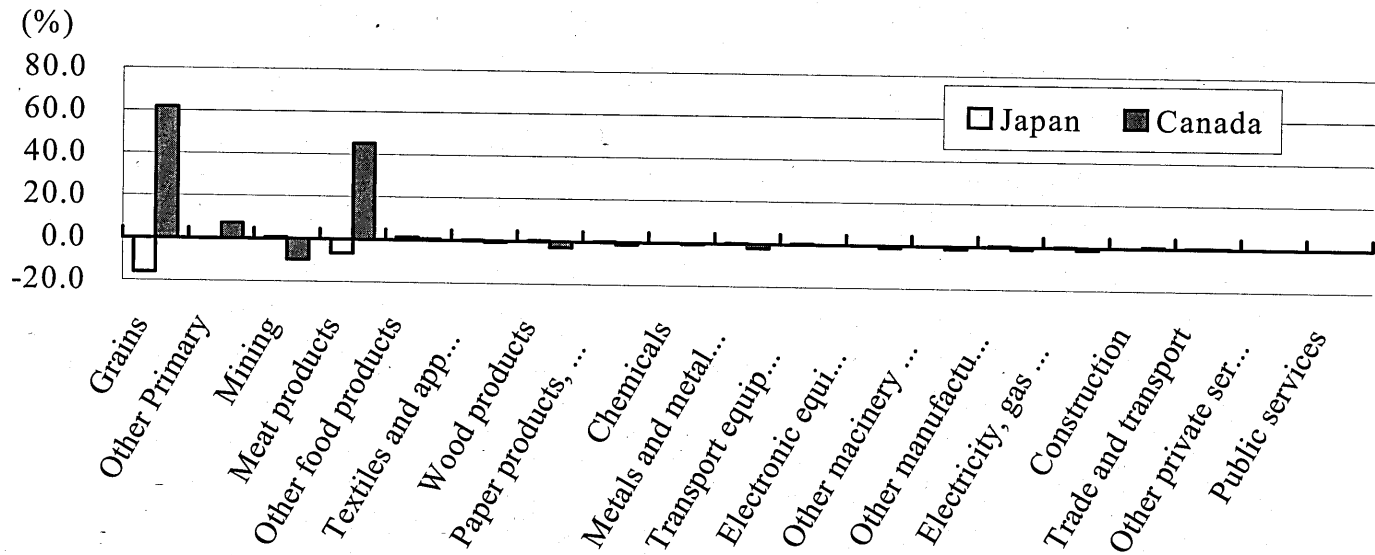
As noted above, the impact of bilateral trade liberalization at the sectoral level is largely determined by trade structures and protection levels prior to trade liberalization. The higher the initial tariffs, the larger the impact on trade flows and the greater the adjustment of production across sectors, in line with the comparative advantage of the trading partners.

In the context of liberalization of both agricultural and industrial goods trade, the CGE model estimates that Japanese exports would increase in most manufacturing sectors, led by the increase of those exports to Canada due to the removal of trade protection. On the other hand, Canadian exports would increase in grains and meat products due to import liberalization by Japan. Changes in the production structures in both countries would correspond to the trade impacts. In Japan, production in the manufacturing and services sectors would increase, but that of grains and meat products would decrease. In Canada, production in the agricultural and food sectors would increase, but that of most manufacturing sectors would decrease, although to a lesser extent. The changes in sectoral production in Canada and Japan in the simulation depicting full liberalization of agricultural and industrial goods trade are shown in Chart 6.

It is likely that the production impacts in the grains and meat products sectors are overstated due to a combination of aggregation bias, failure to take account of producer price supports in Japan's agricultural sectors that would not be part of a bilateral negotiation, and the limitations on price increases for Canadian producers due to the integrated nature of North American commodity markets²¹.

²¹ For example, a simulation of the model where rice is disaggregated from the rest of grains suggests growth of Canadian grain production to be about 7% compared with over 60%. Similarly, a much smaller impact for meats could be expected for Canada.

Chart 6.1 Impacts on Sectoral production



Source: Author's simulation using the GTAP model

To the extent that the impact on agriculture is overstated, the results concerning production in the other sectors of the economy would also be moderated as the realignment of productive resources, such as labour and capital, would not be as extensive. In general, the changes to be expected in sectoral trade and production will vary according to the models employed and, more importantly, the simplifying assumptions on which they are predicated. However, one can infer the probable effects of bilateral trade liberalization between Canada and Japan, and the direction, if not the magnitude, of the model simulations above are broadly in line with the expectations guided by the comparative advantages of the countries.

6.2.1(c) Impacts on Third Country Economies

The bilateral trade liberalization between Canada and Japan would also have an impact on third country economies. Assisted by the more efficient resource allocation resulting from bilateral trade liberalization, Japanese exports are expected to increase to both Canada and the rest of the world. Improvement in the terms of trade is expected to increase Canadian exports to Japan; however, Canadian exports to the rest of the world would decline as some trade is diverted to Japanese markets (see Table 6.2).

Similarly, both Canada and Japan are expected to increase their imports from each other. The expected growth in Canada from trade liberalization will contribute to increasing imports from the rest of the world as well. In the case of Japan, imports from the rest of the world are expected to decline as some trade is diverted to Canadian suppliers.

Table 6.2: Changes in Japanese and Canadian Trade Flows

| Change in Japanese Trade Flows (2001 US\$ millions) | | | |
|---|--------|-------------------|-------|
| | Canada | Rest of the World | Total |
| Exports | 1,701 | 158 | 1,859 |
| Imports | 10,416 | -7,963 | 2,453 |

| Change in Canadian Trade Flows (2001 US\$ millions) | | | |
|---|-------|-------------------|-------|
| | Japan | Rest of the World | Total |
| Exports | 9,947 | -7,195 | 2,752 |
| Imports | 1,754 | 646 | 2,400 |

6.2.2 Dynamic Adjustment Path

The GTAP model used to evaluate the impacts of merchandise trade liberalization between Canada and Japan does not explicitly take into account the adjustment path between the pre-FTA economic equilibrium and the post-FTA equilibrium. It is conventionally assumed in the model that the post-liberalization equilibrium will be achieved in approximate 10-15 years following liberalization.

To study the adjustment paths of the Canadian and Japanese economies to trade liberalization, a “fully” dynamic model developed by Canada’s Department of Foreign Affairs and International Trade (DFAIT) has been used. In this model, savings and investment behaviour by households and firms responds to the changes in economic incentives induced by trade liberalization. The model directly incorporates time as the savings and investment responses are derived by an inter-temporal decision-making process which assumes that economic agents are rational and take into consideration both past and future variables in making savings and investment decisions²³.

²³ For a description of the DFAIT CGE dynamic model, see E. Papadaki, M. Mérette, Y. Lan, and J. Hernández, “The International Trade Canada Trade Model, Version 2.0,” *Trade Policy Research* 2005.

The dynamic model used in the context of the Canada-Japan Joint Study uses the GTAP 6 database and has been aggregated to provide maximum sectoral consistency with the sectoral aggregation scheme in Section 6.2.1. However, due to the computational complexities encountered in dynamic models, the regional aggregation consists of four regions: Canada, Japan, the United States, and the rest of the world.

The model results indicate that 80% of the adjustment takes place within the first 20 years following liberalization. The precise adjustment path will depend on the type of economic indicator and the circumstances particular to individual countries.

6.2.2(a) Canada's Adjustment Path

Trade liberalization is expected to increase household income. As households adjust their consumption spending accordingly, 40% of the total increase in Canadian real consumer spending is expected to occur in the first 10 years post-liberalization. By the end of the second 10-year period, 80% of the long-term adjustment will have been completed.

Similarly, responding to the expectation of increased economic growth, firms respond to trade liberalization by increasing investment. Indeed, in the initial 10-year period, investment overshoots its longer-run equilibrium response, leading to a rapid adjustment of the overall capital stock to the new long equilibrium.

Canadian imports adjust faster than exports; in fact, imports overshoot their longer-run equilibrium in the first period. Imports changes depend on changes in aggregate domestic demand. As Canadian households expect an increase in their real income following an FTA, they increase consumption, and in particular, consumption of imported goods, immediately through inter-temporal substitution. Although there is an increased demand for Canadian exports, and in particular exports of Canadian agricultural goods, extra capital needs to be allo-

cated in this sector. However, capital requires time to be built, which explains the slower adjustment in Canada's exports. Consequently, about 40% of the increase in Canada's total exports will occur in the first 10-year period.

Reflecting the pattern of change in domestic demand and trade, Canadian output adjusts gradually, with approximately 40% of the gains registered in the first 10-year period post-liberalization and 80% by the end of the second 10-year period.

6.2.2(b) Japan's Adjustment Path

Japan's economy would adjust faster to its long-term equilibrium than Canada's, according to the model simulations; this reflects in good measure the fact that there is less overall structural adjustment in Japan's larger economy than in Canada's relatively smaller economy in response to a bilateral trade agreement. In Canada, the increase in output involves a significant reallocation of resources across productive sectors (mostly to the benefit of the agricultural sector). This is not the case in Japan, which explains why 95% of the output gains are achieved within the first 10-year period, post-liberalization.

In terms of real consumer spending, more than 70% of the rise in real consumption in Japan takes place in the first 10 years. Real investment in Japan adjusts more slowly, rising by 40% within the first 10-year period. In the subsequent periods investment will adjust gradually following the pattern of capital stock accumulation.

Japan's exports adjust to their new long-term equilibrium in the first 10-year period. The same is true for imports, which also complete their adjustment in the first period.

6.3 Policy Options

6.3.1 Cross/Multi-Sectoral Approach: For a Better Business, Trade and Investment Environment

Canada and Japan enjoy a firm and favourable economic relationship, which was confirmed by the private sectors of both countries. However, additional action can further contribute to the promotion of the bilateral relationship. Options in this regard are divided into cross-sectoral and individual approaches. The cross-sectoral approach focuses on specific issues that tend to impact on a wide range of sectors, while the individual approaches focus on specific issues in sectors or areas. Both approaches will have positive impacts on both economies and deepen bilateral cooperation.

6.3.1.1 Potential Canada-Japan Free Trade Agreement

While the multilateral trading system, embodied in the WTO, remains the foundation of Canadian and Japanese trade policies, both countries recognize that the reduction of trade and investment barriers with appropriate partners bilaterally and regionally can create beneficial commercial opportunities for the respective partners. By ensuring that bilateral and regional trade agreements are consistent with WTO rules and, where possible, go beyond the WTO, such initiatives can also help support and advance the multilateral trading system. As such, Canada and Japan have concluded a number of bilateral and regional agreements with other trading partners, and have a number of new initiatives under way.

As noted earlier in the Joint Study, regional and bilateral trade agreements are designed to reflect the interests and priorities of participating members and to maximize mutual benefit through more open and liberalized trade and investment. FTAs and EPAs, as well as other measures such as regulatory coop-

eration, are intended to respond to particular needs to harmonize, facilitate or regulate commercial transactions that arise naturally between countries and companies. In many areas, such as trade in goods, investment and competition policy, Canada and Japan share common views on best practices in the negotiation of high-quality agreements and cooperation, while understanding that each country has certain sensitive sectors.

Consultations were conducted pursuant to this Joint Study with the Canadian and Japanese private sectors, as outlined in Chapter 5. There was a call for strengthening a framework for investment, reducing tariffs in a number of areas, and addressing other types of impediments such as non-tariff barriers or the movement of business persons. At the same time, some concerns were raised on both sides (e.g. the potential impact on Japan's agricultural, forestry and fisheries sectors, as well as on the automotive and shipbuilding sectors in Canada).

The modelling in this chapter explores the possible benefits and costs of an FTA between Canada and Japan through the lens of economic modelling, and its results support the suggestion that a Canada-Japan FTA could yield economic benefits for both countries as a whole. However, economic modelling cannot provide a definitive measurement of the effects of trade policy reform, as it has limitations (e.g. there are various factors that cannot be measured in the market). Still, it serves as a useful indicator. The modelling shows benefits in terms of gains in income and production, with GDP expanding by 0.32% for Canada compared with 0.17% for Japan. Japan's economic benefits would amount to almost US\$6.2 billion, compared with Canada's US\$3.8 billion. Japan's total exports of goods would increase by about US\$2.4 billion and Canada's total exports of goods would increase by about US\$2.7 billion (both figures in 2001 dollars). Japanese exports would increase in most manufacturing sectors, and Canadian exports would increase in grains and meat, in addition to wood products, textiles and apparel, and certain machinery and equipment.

The positive qualitative and quantitative assessment of the modelling above, coupled with the long history of cooperation between Canada and Japan, suggests potential value in a bilateral free trade initiative. While agreement could not be reached at this time, due to Japan's concerns on possible impacts on its agriculture, forestry and fisheries sectors (related to the fact that these sectors account for such a large part of Japan's imports from Canada), Canada and Japan decided to revisit the possibility of an FTA to follow up the Joint Study report, through appropriate channels such as the next Joint Economic Committee (JEC).

6.3.1.2 Regulatory Reform Dialogue

Regulations can influence trade and other commercial activities in a number of ways. Addressing regulatory issues and making efforts to solve them with a cross-sectoral approach will contribute to the promotion of bilateral trade. The Canada-Japan Economic Framework document identifies regulatory cooperation as a key area in Section 5. One of the measures to address this issue is to initiate a regulatory dialogue, to advance regulatory cooperation between both countries, along with the Economic Framework and the JEC.

The need for establishing such a framework between Canada and Japan was expressed from both Canadian and Japanese sides at the hearings of the private sector. In addition, the importance of improving the business environment and promoting regulatory reforms in both countries was also stressed. Some of the issues identified for improvement are visa issuance, mutual recognition, intellectual property, removal of regulatory barriers in the trade of goods, and regulations governing investment in services.

Canada and Japan share the view that improving regulatory issues will contribute to strengthening economic relations between the two countries. Though Canada and Japan have sub-

mitted their regulatory requests to each other through several channels, there are no functional frameworks to pursue these issues effectively. Establishment of a framework for dialogue will be helpful to stakeholders in both countries in order to bring out every potential of both economies. Therefore, a regulatory dialogue is a suitable starting point, with a view to identifying priority sectors for additional cooperation and possibly establishing a more formalized mechanism for addressing these issues in the future.

Such a framework should be designed carefully to be results-oriented, and issues should be determined in a timely way, considering effectiveness and efficiency and reflecting the status of the economic relations between the two countries. The framework for dialogue should include the following components: (1) areas and issues to be addressed will be coordinated carefully in advance with a view to promoting trade and investment between the two countries, responding to the needs of the private sectors, (2) the framework will not intervene with or duplicate areas and issues discussed in the existing forums, and (3) regulatory cooperation will receive elevated prominence within the existing JEC structure, such as through an annual agenda item. Officials will present recommendations as to the framework for consideration at the next JEC.

6.3.1.3 Investment

The economic relationship between Canada and Japan has been progressing steadily and favourably so far. As developed nations, both countries have stable economies and mature political systems and both take pride in the high quality of their labour forces and their advanced technology. Japan's location in Asia and Canada's closeness to the United States, combined with their attractiveness as safe investment destinations, have allowed each country to become a foothold in the Asian and North American markets respectively. In addition, the emerging

BRICs economies will expose Canada and Japan to increased international competition, potentially affecting both the Canadian and Japanese economies. It is therefore important to enhance cooperation on trade and investment between Canada and Japan.

As global supply chains have become a necessity for companies to thrive in today's business world, investment has also become a part of trade, and it is important that we facilitate existing investments in order to enable Canadian and Japanese companies alike to take full advantage of the complementary strengths offered by both countries. As such, Canada and Japan should cooperate on initiatives that assist in facilitating investment. An existing example of such cooperation is the new Social Security Agreement; in terms of new work, the negotiation of an updated taxation agreement would be beneficial.

Both countries' private sectors are interested in strengthening the promotion of investment relations between Canada and Japan. One way to invigorate investment is through various promotional measures, such as seminars targeting key industry sectors in both countries. In May 2005, the Japan External Trade Organization (JETRO) and the Department of Foreign Affairs and International Trade (DFAIT) signed an MOU on bilateral investment promotion cooperation designed to identify and advance key areas of cooperation. The two organizations have undertaken a series of bilateral investment promotion seminars to enhance mutual understanding of the business environment. This kind of positive activity should be continued and extended in both countries. Increasing the scope of promotion will lead to the expansion of investment opportunities. The continuation of promotional activities by these and other organizations in both countries will serve to increase the awareness of capabilities and complementarities that exist in both countries, leading to new investments, which will in turn create new business opportunities for companies both in Canada and in Japan.

6.3.1.4 Updating the Tax Treaty

The current Canada-Japan double taxation agreement (“tax treaty”) was signed in 1986. While an amending protocol was signed in 1999, it was very limited in scope. As a result, the current tax treaty does not respond to a number of concerns consistently voiced by the Canadian and Japanese business communities.

Over the past few years, the finance departments of Canada and Japan have held several informal discussions, seeking to identify the areas of the tax treaty that could be improved to reflect current business trends. In light of this exchange, a number of worthwhile changes have been identified that could be made to the existing Canada-Japan tax treaty, including: reducing, and in certain instances exempting from withholding taxes, certain cross-border payments; exempting from source taxation gains on shares of corporations resident in the other country to further promote cross-border investment; including a limitation of benefits provision to deter treaty-shopping; adopting the revised OECD provision on exchange of information that deals with banking secrecy; and including specific provisions to reduce double tax with respect to pension and trust income. Such amendments would be consistent with Canada’s and Japan’s current tax treaty policies and, more importantly, would further eliminate tax barriers to trade and investment between the two countries.

Against this backdrop, the negotiation of an updated and improved tax treaty would provide the governments of Canada and Japan with the opportunity to address concerns with the current tax treaty as expressed by the Canadian and Japanese business community. An improved tax treaty would, therefore, yield clear benefits for Canadian and Japanese business groups by further facilitating trade and investment between the two countries.

Finance Ministers at their bilateral meeting on April 4, 2007, in Tokyo agreed that officials from both sides will work together to bridge the few remaining differences, having substantive discussions following the signature of the new Protocol to the Canada-U.S. Tax Convention, with a view to initiating formal negotiations on the revision of the treaty once such differences have been reasonably narrowed.

6.3.1.5 Asia-Pacific Gateways

Success in international commerce is driven by the timely and efficient movement of goods and people in global supply chains. It requires new approaches from governments and it means giving businesses the tools to adapt. Initiatives related to national gateways are being developed in Canada and Japan to promote economic growth and strengthen ties with trading partners. Canada's billion-dollar Asia-Pacific Gateway and Corridor Initiative aligns the multibillion-dollar investments by the provinces and private sector to enhance transportation logistics between Asia Pacific and North America through significant increases in the capacity, reliability and efficiency of Canada's ports, railways, roads and airports. Japan is advocating the Asian Gateway Initiative and aims to play a key role in connecting Asia and the rest of the world in terms of the flow of people, goods, capital, information and culture. Japan's Initiative presents a comprehensive strategy for ensuring Japan's stable economic and social growth and encompasses wide-ranging issues. While maintaining focus on trade and commerce, Japan's Initiative attaches much importance to other areas such as restructuring policies for international students, promoting Japan's creative industries and publicizing its attractiveness overseas. The two gateway initiative concepts are different but related and do coincide in a timely manner. There is considerable scope for sharing information and for cooperation as both coun-

tries seek to become improved gateways to their respective regions.

6.3.2 Individual Approach: Cooperative Issues

Chapter 4 described recent developments in bilateral cooperation, including the priority areas of the Canada-Japan Economic Framework. This section contains a number of these areas and others.

6.3.2.1 Food Safety

The relationship between the Canadian Food Inspection Agency (CFIA) and Japanese regulatory agencies has strengthened over the last several years. On complex and sensitive issues, the relationship is one of mutual trust, collaboration and transparency.

The CFIA and Health Canada and Japan's food safety authorities finalized an informal document in July 2006 for cooperation on food safety issues. The cooperation focuses on three areas: risk communications, risk assessment and international cooperation. Under the responsibility of the CFIA, Health Canada and the Food Safety Commission of Japan, initial cooperation in these areas will be carried forward in line with the content of the framework document. It would be constructive for authorities in both countries, as mutually decided, to coordinate cooperation between the Canadian and Japanese relevant authorities, which would enhance professional contacts at all levels and enhance the exchange of information.

The initial step of cooperation on food safety will be a touchstone for next steps. It is envisioned that the scope of the cooperation may be extended to include the areas of risk management, laboratory cooperation in the field of food safety, as contemplated by the existing food safety cooperation document, and further to include animal health and plant health. Given the increase in international trade in food, animals and plant prod-

ucts, as well as new inspection technologies and risks, such initiatives would foster better communication and understanding between Canadian and Japanese authorities and help minimize the potential impacts of regulatory differences.

6.3.2.2 Energy Cooperation

Given the convergence of the global energy situation and environmental concerns, cooperation on energy between Canada and Japan has evolved over the past decade. As such, promoting the development of energy technologies and diversification of energy sources has become a theme of strategic importance to Canada and Japan, with commensurate emphasis on expanding cooperation and commercial alliances across a range of traditional and non-traditional energy forms.

Japan has long-standing investment in oil sands partnerships in Canada, and Japanese companies have expressed interest in expanding information sharing with Canada on associated oil sands infrastructure, including technical exchanges. With a view to promoting diversification of energy resources and markets, it is important for Canada and Japan to encourage and support collaboration in this area.

Canada and Japan are among the global leaders in the area of hydrogen fuel cell development, including stationary, micro and automotive/mobile applications. Furthermore, there are a number of Canadian firms actively engaged in fuel cell activity in Japan. Both countries already cooperated under the framework of the International Partnership for the Hydrogen Economy (IPHE) by coordinating and implementing the research, development and demonstration of hydrogen fuel cell technology. As both countries will benefit from information sharing and increased collaboration, which will facilitate efficiency in research and development programs, international partnerships should be continued and enhanced.

Novel energy sources such as gas hydrates represent another area for bilateral cooperation. A new proposed \$40-\$50 million extended production test at the Mallik gas hydrate site in the Mackenzie Delta in Canada would represent a significant advance in determining the commercial potential of gas hydrates and would verify appropriate technologies for production.

Other significant areas regarded as holding long-term cooperation potential between Canada and Japan, albeit at preliminary development levels, include coal (clean coal, liquified coal), CO₂ capture and storage, uranium as a source of nuclear generation which greatly contributes to greenhouse reduction, and renewable energy sources (e.g. bio-ethanol). Partnership in energy cooperation will greatly contribute to energy efficiency, clean energy and diversification of energy resources, and it could lead to further facilitating trade and investment between the two countries.

In this regard, Canada and Japan welcome the energy dialogue, which was agreed at the meeting in May 2007 between the Parliamentary Secretary for Economy, Trade and Industry of Japan and the Minister of Natural Resources Canada. Both governments will hold such dialogues to address various areas of cooperation in the energy sector.

6.3.2.3 Cooperation on Science and Technology

The Agreement on Cooperation in Science and Technology (S&T) of 1986 (Canada-Japan Science and Technology Cooperation Agreement) allows for complementary and effective cooperation between relevant government agencies as well as our scientific researchers and institutions. In addition, the 2005 Economic Framework reflects new realities and outlines strategic actions for expanding the scope of cooperation and moving the level of collaboration to the realm of applied and commercialized S&T.

With a view to achieving a better balance and wider spectrum of knowledge sharing, both Canada and Japan should continue to actively develop initiatives through the framework of the Joint Committee under the Canada-Japan Science and Technology Cooperation Agreement aimed at expanding the scope of collaboration, such as increased exchanges, fostering programs that support women in science, as well as considering methods for an even more effective use of the Joint Panels, including possibilities for their increase and/or enhancement.

Canada and Japan each place a high value on innovation and the importance of deepening industry-academia-government collaboration. Both countries would benefit from the identification of joint initiatives that will help facilitate the global commercialization of their research, such as public-private partnerships, cluster-to-cluster linkages, joint research networks, or other endeavours that both sides agree could offer mutual benefit.

With a view to a more strategic engagement focused on R&D and commercialization, Canada and Japan should discuss the respective strengths and weaknesses of each country's science and technology sectors and the complementary areas that ought to drive further collaboration through the framework of the Joint Committee under the Canada-Japan Science and Technology Cooperation Agreement.

To ensure an increase in our capacity for innovation and continued economic growth, it is important that the necessary resources be allocated in support of the aforementioned actions.

6.3.2.4 Air Services

The last consultations on air services were held in January 2007 and resulted in expanded rights for both sides, including additional capacity to be offered between the two countries and increased operational flexibility for carriers. This included the introduction of a simplified allocation system based on flight frequency rather than aircraft type, up to a 450-seat limit, addi-

tional capacity to be offered between the two countries, excluding Tokyo airports, the removal of city-pair frequency limitations for code-sharing on third-country carriers and an increase in "beyond" points for these code-share flights.

Some of the new rights confirmed in the recent consultations have been put into actual application by carriers of both countries working in partnership, notably code-sharing rights at points in the United States and at "beyond" points in Asia.

However, bilateral relations on air services could benefit from further improvements to meet continued market developments between the two countries. The Japanese Civil Aviation Bureau of the Ministry of Land, Infrastructure and Transport and the Canadian civil aviation authorities have decided to meet in spring 2008. The launch of another round of talks to facilitate air services between the two countries would allow both trading partners to address the issues relating to promotion of trade in goods and services and investment between the two countries.

6.3.2.5 Intellectual Property

Intellectual Property Rights

As intellectual property has become borderless in the global economy, it is our task to find global solutions to help protect and enforce intellectual property rights (IPR) so that economies all over the world can transact under the same conditions. This will provide legal stability, transparency and fair ground, which eventually facilitate fair trade and distribution of goods. Intellectual property rights, such as patents, trademarks and copyrights, contribute to the development and progress of society. Therefore, it is important to provide the proper environment that helps foster creation and innovation protected through intellectual property rights in the future, while protecting and utilizing outcomes of past creative activities.

In these circumstances, Canada and Japan can cooperate in two aspects of IPR. One is to prevent proliferation of counterfeit and pirated goods, and the other is to reinforce the protection of IPR, particularly by improving patent examination systems. These actions are essential and necessary to encourage emerging industries, which will help to develop our nations based on engineering and technology.

Japan has been advocating the creation of an international legal framework on preventing proliferation of counterfeits and pirated goods. Canada and other interested parties have engaged in a constructive dialogue since last year on this issue. Canada and Japan both agree on the importance of continuing to cooperate bilaterally as well as multilaterally on the fight against counterfeiting and piracy.

Patent Cooperation

Canada and Japan recognize the global increase in patent application filings. Both countries' patent offices have been discussing this issue and other important topics such as streamlining patent processing and ensuring the high quality of granted patents. The Canadian Intellectual Property Office (CIPO) and the Japan Patent Office (JPO) should continue discussion on this and other patent-related issues, especially the Patent Prosecution Highway.

6.3.2.6 Mutual Recognition Agreement on Telecommunications Equipment

Technical barriers to trade, such as standards, are often cited by business communities in both countries as warranting attention by the respective governments. Concluding a mutual recognition agreement (MRA) will facilitate market access and trade in goods, by reducing costs and the number of organizations related to conformity assessment processes. Any country has its

own technical regulation for network protection, electromagnetic interference and other purposes, and certificates and marks are issued to the products that conform to the technical regulation. An MRA stipulates conditions under which the results of conformity assessment done in an exporting country will be accepted by the importing country.

As economic globalization progresses, implementing mutual recognition is increasingly important for promoting trade and facilitating a borderless business environment. With the rapid development in information technologies, there is an increased demand from industries for MRAs in this area. Responding to these voices, Canada and Japan have respectively concluded MRAs for telecommunications equipment with other countries and regions.

In the case of Canada and Japan, at the private sector consultations of both countries, mutual recognition on the results of conformity assessment for telecommunications equipment was pointed out as a potential option to strengthen the bilateral economic relationship. Canada and Japan are advanced countries in the area of information and communications technologies; thus their markets have high potential to become more attractive to each other as a result of MRA. Considering the characteristics of each economy, and based on experiences with other countries, a bilateral MRA in telecommunications equipment would help boost trade between Canada and Japan.

Chapter 7

SUMMARY OF FINDINGS

In January 2005, the Prime Ministers of Canada and Japan determined that the two countries would conduct a Joint Study with the following aims:

- a. to examine the benefits and costs of further promotion of trade and investment, as well as other cooperative issues between the two countries;
- b. to identify and describe the current status of the bilateral economic relationship, including the identification of areas for further development;
- c. to consider the possibility of pursuing various cooperative bilateral trade and economic initiatives to re-energize the relationship; and
- d. to give appropriate consideration to the interests of the private sector.

The following are the major findings from the Joint Study.

Chapter 2 examined Canada-Japan economic relations in the context of bilateral, regional and multilateral initiatives. While both countries are firmly committed to multilateral and regional efforts to promote open and secure trade, such as through the World Trade Organization or the Asia-Pacific Economic Cooperation forum, the important role that strong bilateral relationships can play in promoting the principles of free trade and in facilitating closer cooperation in multilateral and plurilateral settings was also endorsed.

Chapter 3 reported the past and present trends in the bilateral economic relationship. Canada and Japan have long been important economic partners, with significant levels of two-way trade in goods and services, flows of direct and portfolio investment, flows of technology and ideas, and movement of people. Yet, for

some time, the overall commercial relationship has underperformed. As Japan's economic recovery is now strengthening, while Canada is seeking new opportunities to increase its prosperity by strengthening international linkages, the overall economic relationship between Canada and Japan is in a position to move forward more strongly than it has in the recent past.

Chapter 4 provided a summary of areas of current collaboration, such as the Joint Economic Committee, early results under the Canada-Japan Economic Framework, and private sector initiatives. Canada and Japan clearly enjoy a rich and prosperous relationship involving a myriad of actors in both the public and private sectors. The existing array of multilateral and bilateral policy and private sector mechanisms provides a solid basis upon which to build more vigorous economic relations in the periods ahead.

Chapter 5 examined the existing measures limiting the full potential of trade and investment, drawing from input received from the Canadian and Japanese private sectors. Canada and Japan to date have promoted liberalization measures of various kinds, though there remain various challenges that affect trade and investment relations between the two countries in a number of sectors. In addition to suggestions on specific areas for cooperation, comments were provided on the potential of an FTA/EPA and enhanced regulatory environments.

Chapter 6 examined the benefits and costs of the further promotion of bilateral trade and investment, including economic modelling on the potential impact of trade and investment liberalization, as well as other cooperative issues between the two countries.

Based on the private sector consultations and analysis of previous chapters, there are a number of initiatives that both countries will pursue for enhancing future bilateral economic relations. The initiatives that Canada and Japan have advanced are generally classified into the following categories: (1) multi-sectoral initiatives and (2) sector-specific initiatives.

(1) Multi-Sectoral Initiatives

The initiation of a dialogue on regulatory reform to address regulatory barriers, which may influence trade and other commercial activities, will facilitate economic relations between the two countries. Cooperation between Canada and Japan on their respective Asia-Pacific Gateway initiatives will strengthen ties with trading partners and promote economic growth. Similarly, Canada and Japan have placed increased importance on investment promotion and cooperation to facilitate the movement of capital and information. In addition, updating the double taxation agreement between Canada and Japan would contribute to the promotion of trade and investment between the two countries. Canada and Japan decided to revisit the possibility of an FTA to follow up the Joint Study report, through appropriate channels including at the next Joint Economic Committee (JEC).

(2) Sector-Specific Initiatives

Cooperation on regulatory issues relating to food safety and intellectual property will promote information sharing to help address Canadian and Japanese concerns in these sectors. A partnership in energy cooperation will contribute to energy efficiency, clean energy and diversification of resources, while further collaboration in science and technology will facilitate innovation and the global commercialization of research. Canada and Japan have also decided to continue consultations on air services to improve the flow of people, and consider that a bilateral mutual recognition agreement in telecommunications equipment would help boost trade in this sector.

The Joint Study Working Group expects that the Joint Study will enhance mutual understanding about bilateral trade and investment relations and be useful in further considering measures to strengthen the economic linkages between Canada and Japan.

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