

NAFTA@10

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Editors

Foreword

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The Economic Impact of the Canada-U.S. FTA and NAFTA Agreements for Canada: A Review of the Evidence

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Introduction

Canada entered into a free trade agreement with the United States on January 1, 1989 after a lengthy debate and considerable dispute as to its ultimate effects. That agreement, the Canada-US Free Trade Agreement, was extended in 1994 to include Mexico with the North American Free Trade Agreement (NAFTA). For Canada these trade agreements represented both a substantial opening of Canadian markets to foreign competition, together with a number of provisions on services and investment which generally increased the importance of markets and international competition within the Canadian economy. One of the principal reasons that countries enter into regional free trade agreements is to secure long-term economic benefits and to provide a business environment in which investment and commerce can effectively contribute to the well-being of its citizens. While there may be exceptions to this, such as when countries enter trade agreements for humanitarian or national security reasons, in the absence of significant expected economic benefits it would be unlikely that governments would willingly give up instruments of national economic control. The history of the free trade debate is that the benefits of trade far outweigh any presumed loss of control over the national economy by forgoing protectionism.

The world is an imperfect place, however, and regional trade agreements are not perfect arrangements. In a world of complex overlapping jurisdictions, different national histories, and the realistic political constraints on governments' ability to change domestic laws and institutions, all trade agreements are a complex set of rules reflecting compromise. The NAFTA and the Canada-U.S. FTA moved all three countries some way towards free trade but, as all are aware, protectionism and departures from the general principle of national treatment are still common. Not surprisingly, therefore, these agreements are routinely criticized on a range of criteria from economic to political to social. The purpose of this paper is not to review those complaints but to step back and ask what can be said after more than 15 years (more than 10 years for the NAFTA) about the impact of these agreements on the economy and economic outcomes in Canada. Did these agreements deliver substantial economic benefits to Canadians? The impact of international trade agreements does not take hold overnight. Generally their impact is only felt after a number of years. However, after 15 years we have a fairly good idea what the impact has been. There are a large number of studies covering a range of economic outcomes on the ex post impact of the FTA and then NAFTA. While there are gaps in the research, the overall picture is clear. These agreements had a major positive economic impact on Canada.

This chapter proceeds to make this case by first documenting the current state of trade in the economy, and provide some indication of its overall importance. Section two lays out the basic facts on the current state and structure of the Canadian economy. The basic point of this section is to highlight the extraordinary degree to which the Canadian economy is integrated into the global economy. In order to understand how Canada got to where it is now, and the role of the Canada-U.S. FTA and NAFTA agreements. Section three provides a historical overview of the economic development of Canada and the role of international trade agreements after World War II. The bulk of the study is contained in section four, which is a review of academic and government research of the impact of these trade agreements on a range of economic outcomes. These include trade volumes and patterns, foreign direct investment, employment, wage and income distribution effects, productivity gains, effects on competition and consumers, and the impact on the long-run growth prospects of the economy through increased international flows of knowledge and diffusion of technology. Most studies are Canadian or NAFTA focused, relying on data covering the first ten years after the agreement. In addition, when necessary, related international evidence is used. The bulk of the evidence is quantitative but some is qualitative. Section five of the study deals specifically with the issue of market access and dispute settlement. Use of unfair trade laws by the national governments within NAFTA was not eliminated by these agreements, despite the economic merits of doing so. An enhanced dispute settlement process was the resulting compromise. As such, it represented an improvement over the status quo at the time, but how effective it would be in increasing security of market access was only to be determined with experience. In section five we review that experience and look at evidence on what its impact has been. Section six concludes with an overall assessment.

Trade and Investment in the Canadian Economy: an Overview

Canada is a nation that is heavily dependent upon trade to sustain incomes and living standards. A few numbers put this in perspective. In 2004, Canada's exports and imports were \$928.5 billion—this is an average trade volume of \$2.5 billion per day, or about \$29,000 for each and every Canadian. Canada's GDP was approximately 1.29 trillion dollars that year. Therefore trade, measured against GDP, is about 72.0 percent of GDP. This number has risen fairly steadily over the decades, but accelerated sharply between 1991 and 2000. In fact, the ratio of trade to GDP for Canada rose 34 percentage points over that nine year period, more than double the increase over the preceding three decades peaking at 85.2% in 2000.

Canada, by virtue of geography and history, trades a great deal with the United States. In 2004, the US was the market for 78.8 percent of Canada's exports. As a much smaller country, what is perhaps more extraordinary is the importance of Canada as the largest trading partner for the US. In 2004, Canada took 19.2 percent of US exports, and Canadian-produced goods and services accounted for 15.8 percent of total US imports. Canada's trade with other countries is important, although an order of magnitude smaller, with the E.U. accounting for 9.3 percent and Japan 2.7 percent of Canadian trade in 2004.

Canada has a substantial trade surplus with the United States, reaching \$93.9 billion in 2004 - a very large number when judged against total trade volume for example. It is important to recognize, however, that whether a country has surplus or deficit on its trade account has little to do with the state of trade liberalization between countries, but is more accurately a reflection of relative macroeconomic conditions between countries.

International trade allows countries to specialize both at the industry level and at the detailed individual product level within specific firms. At the broader level, Canada's exports, in order of importance in 2004 were; Automotive products (21.2 percent), Machinery and Equipment (19.5 percent), Industrial products (17.5 percent), Energy (16.5 percent), Forestry (9.7 percent), Agriculture and Fishing (7.2 percent) and Consumer goods (3.7 percent). It is interesting, however, that two-way trade in similar goods (at least at the broad level) is an important feature of modern trade. Canada's three largest imports are also Machinery and Equipment (29.2 percent), Automotive products (21.7 percent) and Industrial products (20.4 percent).

Similar to goods trade, increased specialization together with globalization has brought about larger transactions in services such as travel services, transportation services, commercial services (which includes accounting, legal, insurance, architecture, engineering, and management consulting), and government services. Canadian exports of services in 2004 were \$62.3 billion, or 12.7 percent of total Canadian exports of goods and services. Imports of services were \$73.5 billion in 2004, or 16.8 percent of total Canadian imports of goods and services. Interestingly, the share of the United States in Canada's two-way trade is smaller for services (57.3 percent) than for merchandise (75.9 percent). Also, services trade, while rising as a share of Canadian GDP, as it is for all the advanced countries, has fallen somewhat as a share of total trade throughout the 1990s, further highlighting the boom in goods trade.

The openness of Canada to trade parallels closely the importance of Foreign Direct Investment (FDI) in the economy, both inward and outward. In 2004 the stock of inward FDI was \$357.5 billion. Of that, \$232.0 billion (64.9 percent) was accounted for by US firms. The stock of outward FDI by Canadian firms was \$399.1 billion of which \$224.4 billion (56.2 percent) was in the US economy. Globally, FDI has grown more rapidly than has trade, as in the case of Canada. Two-way FDI carries with it many benefits as will be discussed in due course.

These statistics only partially convey the importance of international trade to Canadians at the beginning of the 21st century. Economic models and theories can be used to ask questions such as "how will a fall in exports of 10 percent impact on Canadian employment?" or "how will Canadian living standards adjust if Canada were to withdraw from NAFTA?" The reality is, however, that these questions cannot be answered with any great quantitative precision. At one level, the export-import numbers suggest that, to a first approximation, one in five jobs is "export dependent" in Canada. This simply reflects an accounting of how much of current aggregate demand, or total

spending in the economy, is accounted for by exports.¹ However, in another sense this vastly understates how dependent Canada is on trade. The structure and the entire organization of the Canadian economy is crucially dependent on trade and on its integration with the United States.

It is important to remember that the real purpose of exports is to import—i.e. to consume what you do not or cannot produce. The level of income in a country reflects both the efficiency with which your resources are used to produce the goods exported, and the relative value or price of goods exported versus those imported. As a small country, Canada produces a small share of the range of technologically advanced goods in the world. In a world of much reduced trade most of those goods would not be available, and it would be folly to think that a small country could undertake the investments necessary to produce even a fraction of those. Thus our access to computers, books, MRI machines, commercial jet aircraft and the Internet reflects the ability of Canadians to sell other goods in international markets.

Trade Liberalization and the role of Trade Agreements as Economic Instruments

While very large economies such as the United States have historically had good economic growth while trading relatively little, this is emphatically not the case for Canada and virtually all smaller industrial economies. In general, international trade has conferred enormous benefits on modern nations, and the history of economic progress has been coincident with the internationalization of the world's economy. While there have been periods in which, for a variety of reasons, nations and regions within have sought to become self-sufficient, trade, or more generally exchange between geographically distinct regions, is generally thought to be one of the principal driving factors behind the industrial revolution and economic advance over the last two centuries. Canada's fortunes are ample testimony to these forces. Canada began as a colony that exported raw materials to Europe, and imported finished goods. By the mid 19th century, the industrial revolution had taken hold in the United States and was beginning to see early signs of development within central Canada. After confederation in 1867, the nation continued to export natural resources and agricultural products, but began a period of development by using trade protection to promote development of an indigenous manufacturing sector. Canada was not unique, and with the exception of Britain, most countries had highly protectionist regimes covering their manufacturing sectors, and in some cases agriculture and natural resources.

However, the costs of trade protection and its negative impacts on economic development became more widely appreciated by the end of the 19th century and a period of limited trade liberalization covering manufactured goods began. This process came to a brutal halt in the 1920s, and with the beginning of the Great Depression the modern world saw a dramatic shrinkage in international commerce as countries pursued beggar-thy-neighbour policies of trade protectionism. High rates of unemployment, falling incomes, and general

¹ See Cameron and Cross (1999) for one such calculation. One has to net out imported inputs necessary for exports to do this calculation.

economic misery were the consequence. It would be fair to say that the lessons learned from the Great Depression serve today as the intellectual and political foundations upon which the modern system of a rules-based international trading system evolved. Post World War II, the multilateral international trading system was fostered with the established of the General Agreement on Trade and Tariffs (the GATT) subsequently replaced by the World Trade Organization (the WTO). The last 50 years has seen a steady erosion of trade barriers, and subsequently barriers to investment. Within the last 20 years, two important developments occurred. First, there were deeper regional trade integration agreements, of which the Canada-US Free Trade Agreement (FTA) and its successor the North American Free Trade Agreement (NAFTA), are important examples. Regional integration agreements (RIAs) have become more common as volumes of trade between close neighbouring nations accelerated, and frameworks for covering these close economic ties became easier to negotiate among a few parties, rather than the more cumbersome multilateral process under the WTO. In the 1990s this process accelerated dramatically; in 1989 there were seven major RIAs—by 1998 there were 84. The other development has been the gradual inclusion of developing countries within the GATT-WTO system. As imports from developing countries have surged, however, fears of low wage competition have become probably the single most important concern for those opposed to either WTO-led multilateral liberalization or in many cases regional integration agreements. There remain some sectors in which trade protectionism remains the rule rather than the exception. These include agriculture, textiles, footwear and clothing.

The results of trade liberalization have been nothing short of spectacular. Trade flows since 1950 have grown by more than a factor of 25 while output increased by only a factor of 7.2. International trade has similarly grown steadily in importance to Canada since the end of World War II. These increases in trade have occurred for a number of reasons, including changes in the cost of transport and communication, the end of the Cold War, economic and political developments in developing countries, and the success of market oriented domestic reforms in a number of countries, which contributed to a greater receptiveness to openness. Nevertheless it is universally recognized that policies by government towards reducing barriers to trade and investment have played a major role in these developments. Canada steadily liberalized its trade in the series of GATT rounds, taking a number of important unilateral initiatives. One of the more important developments within Canada was the 1964 Auto Pact between Canada and the US which led to the subsequent growth in two-way trade in autos and auto parts between the two countries.

Trade liberalization carries with it substantial national benefits. The case for “Free Trade”, an ideal state in which there are no policy impediments to trade, is also the basis for the more practical objectives of international agreements which liberalize trade. These benefits generally fall under the following headings:

a) Greater efficiency from the pursuit of national comparative advantage. This basically says that a country should produce what it is best at, and import goods that it is (relatively) inefficient at producing. For the world as a whole, the use of market signals is the method by which a more efficient world allocation of production occurs.

b) Increased competition. More open markets increase the level of competition faced by domestic producers. This lowers prices to consumers, improves product quality, and removes monopolistic distortions in the economy.

c) Greater variety in goods consumed, and greater efficiency through specialization in goods produced with economies of scale and product specialization.

d) Productivity gains. Opening markets to international trade promotes innovation, better use and adoption of improved organizational and technological methods, and incentives to shift more generally toward best practice methods, and facilitates the transfer of knowledge between countries.

The liberalization of foreign direct investment helps in the achievement of similar gains. Liberalizing FDI or alternatively removing restrictions to foreign investment is motivated in general by the pursuit of greater gains in efficiency, competition, and productivity enhancement. Most FDI has been liberalized through unilateral policy decisions or bilateral agreements specific to investment. The OECD reports that the 1990s saw over 800 such agreements. Many, if not most, of the Regional Integration Agreements which cover trade also, however, contain specific provisions covering the liberalization of FDI—this was certainly true in the case of the FTA and the NAFTA.

Despite the general case “for” trade and investment liberalization there are a number of economic arguments which have been advanced that suggest more open international markets, or more specifically more imports, are not always a good thing. Two of the most important arguments are: a) the possibility that trade liberalization can create unemployment or permanently destroy jobs, and b) the possibility that income inequality is increased as a consequence of freer trade. These potential “negatives” played a very prominent role in the debate on NAFTA and to a limited extent in the FTA debate. Both of these will be dealt with in this chapter.

The bulk of trade liberalization in the more recent past has occurred in the form of Free Trade Areas or Custom Unions—or more generally Regional Integration Agreements (RIAs). While there has been a great deal of discussion about the WTO since the completion of the Uruguay Round of the GATT in 1994, there has not been another substantial round of multilateral trade liberalization. Much of the hostility towards trade agreements in Canada has focused explicitly on the FTA and NAFTA. On purely economic grounds, multilateral trade liberalization is generally preferred to preferential trade liberalization because there is scope for an RIA to potentially hurt both some member and non-member countries through its *trade diverting impact*. A RIA is not therefore necessarily trade liberalizing, if the net result is less trade than occurred before the agreement. A RIA, by giving preference to member countries, at the expense of non-members, might reduce trade between member and non-member countries. There is a large debate as to how important these effects are, and in the case of NAFTA we will review the evidence on the important question of trade diversion costs and impacts on third parties. The World Bank, in its comprehensive study on RIAs called *Trade Blocs*, comes to the general conclusion that the need for deeper integration on a regional level implies that RIAs are here to stay and if anything will increase in importance. They generally endorse a concept called *open*

regionalism. While too lengthy to elaborate here, the basic prerequisites for an RIA to qualify as promoting open regionalism are that: a) it does not lead to serious trade diversion effects, b) it permits deeper integration between members, c) it preserves the effects of previous liberalizations and provides credibility for any subsequent extensions of the RIA, and d) it “support[s] a liberalizing dynamic within member countries and the world trading system as a whole.”² In practice most RIAs fall short of this ideal.

There are other complex political and social arguments with respect to the impact of recent trade agreements—in particular RIAs. These include issues such as: a) the impact on the environment, b) the impact on labour standards, c) the delivery of social services and other important public goods such as education and health, and d) potential undermining of the multilateral trading system. While important, these are not the subject of the current study which is focused on the economic impact of FTA-NAFTA on the Canadian economy. With the exception of the last issue, which is a fairly trade specific issue, the other issues can be raised with respect to almost any international agreement including those covering taxation, health and sanitary measures, defence, water supplies, etc.

The national interest case for governments to sign binding treaties covering trade and investment rests ultimately on the fact that these agreements are essential to sustaining the current level of income and employment in the economy, and providing a framework which is best suited to promoting future economic growth. They can be viewed in economic terms as a general extension of the rule of law and use of binding contracts in commercial relations. Governments that sign trade agreements voluntarily limit the application of national policy instruments that impact on trade. Most important are restrictions on the use of subsidies, tariffs and other non-tariff barriers to trade such as technical standards. While this represents a “loss” in national sovereignty in that the set of instruments governments may use to impact on the economy has been reduced, the case “for” is based on the evidence that the net impact is beneficial. This is not to argue that all RIAs are beneficial. Those which are poorly designed or give rise to strong trade diverting effects could actually lead to a decline in national economic welfare. Nevertheless, as discussed in the following sections, the available evidence strongly confirms the hypothesis that on economic grounds the FTA and its successor NAFTA have had an overwhelming positive impact on the Canadian economy.

The Economic Impact of FTA and NAFTA on Canada

In this section, we review a number of studies which look at various impacts of FTA and then NAFTA on the Canadian economy. It is first important to highlight a number of important factors that were impacting on the Canadian economy during a period in which economic adjustment to FTA-NAFTA was no doubt also ongoing. Two primary features stand out in this regard: The first was the prolonged economic slowdown in Canada between 1990 and 1992 but from

² See World Bank (2000), *Trade Blocs*, page 106. There yet is little agreement as exactly how to operationalize these principles.

which a true recovery was not witnessed until 1996; The second was the U.S. economic boom that lasted for most of the 1990s.

At about the same time that the FTA was to enter into force, the Bank of Canada announced a significant change in policy direction towards achieving “price stability” (Crow 1998). At about the same time, faced with large deficits and a growing debt, fiscal policy in Canada was also tightening. The result was to cause real interest rates in Canada to exceed those in the U.S. by, on average, more than three percentage points between 1988 and 1996 leading to the ‘made-in-Canada’ recession of the early 1990s. While the U.S. also suffered a mild slow-down in 1991, the recovery south of the border was much more rapid and was followed by many years of rapid economic growth and productivity improvements. Not unrelated to these events was the depreciation of the Canadian dollar from 89 cents US in 1991 to 62 cents in 2003. It is within this context that the Canada-U.S. FTA entered force on January 1st, 1989.

The main studies used herein are concerned with the impact on Canada, Canada-U.S. or all three NAFTA countries. There are a very large number of NAFTA studies which focus just on the US economy that are not reported unless they bear directly on an issue being discussed. The studies are divided into those focused on: a) trade creation and trade diversion effects, b) foreign direct investment, c) productivity, d) scale and specialization e) jobs and wages, f) product variety and other consumer effects, and g) dynamic effects on innovation, R&D and international technology diffusion. Ideally one would like to explicitly identify the impacts of the trade agreements on the welfare of Canada, Mexico, the United States and other countries. This is often done through the use of applied general equilibrium models which are widely used to evaluate the ex ante effects of trade agreements. However, thus far they have not been used for ex post evaluations of NAFTA. Existing ex post studies focus on specific channels of influence without taking an overall view on the net welfare impact.

Trade Creation and Trade Diversion

As noted in the introduction, the growth in trade volumes between Canada and the United States in the 1990s had been quite strong—extraordinary relative to the past history of Canada-US trade. But, for increased trade volumes to have a welfare enhancing impact, it is important to distinguish between trade creation and trade diversion. The preferential reduction in tariffs within a regional integration agreement (RIA) will induce buyers from one country who are members of the RIA to switch their demand towards supply from partner countries, at the expense of both domestic production and imports from non-members. The former is trade creation and occurs when a high cost domestic source of supply is replaced with a lower cost international source. In some cases trade diversion occurs. This is when a low cost foreign source of supply is replaced with a higher cost source from some country that is a member of the RIA. Trade creation is beneficial, but trade diversion may be costly.

The net impact of trade creation benefits less trade diversion costs on national income may be positive or negative, depending on the costs of alternative sources of supply and on trade policy towards non-member countries. Simply looking at shifts in trade volumes, the best of all possible worlds is when trade

between all countries rises—both members and non-members of the RIA. However, some substitution of trading partners is a predictable effect of an RIA; these shifts do not necessarily result in trade diversion.

Three studies exist which attempt to control for the impact of the trade agreement through detailed comparisons of the sectors for which NAFTA resulted in significant trade liberalization as measured by tariff reductions in comparison with other sectors in which trade was already liberalized or, for practical purposes, barrier free. They also look at trade with non-NAFTA partners as another set of benchmarks. The first study was by Schwanen (1997) and the second by Clausing (2001). Schwanen (1997) looks at Canada-US trade from 1985 to 1995 with a focus on total bilateral trade across 18 product groups. Schwanen found that in those sectors in which the FTA liberalized trade, Canada-US bilateral trade volumes grew by 139 percent versus 64.5 percent for those not liberalized. He excluded autos and crude oil trade in these calculations because both of these sectors were not significantly impacted by the FTA. This calculation strongly suggests that the growth in trade (total trade creation) between Canada and the United States was strongly linked to the FTA. To check on this explanation, he then examines Canada's non-US trade. Bilateral trade with countries other than the US, in the FTA liberalized sectors, grew by 34.7 percent compared to growth of 53.6 percent in those sectors not liberalized by the FTA. The comparison suggests that the FTA worked in those sectors in which liberalization was significant. Note the latter numbers do not provide conclusive evidence on the trade diversion effects of the FTA since they only show that trade with all countries grew, although the fact that the liberalized sectors grew faster for the FTA members, but slower for non-members may indicate some trade diversionary effects. Schwanen also does a comparison of pre- and post-FTA data using 1981-88 as the pre-period. He finds that there was a greater acceleration in the FTA liberalized group than the non-liberalized group. This was true for both exports and imports, but the effect was greater for exports.

Clausing (2001) takes a similar approach but used much more detailed US trade data. She examines US imports in approximately 8000 10-digit commodity groups as classified by the Harmonized Classification System using US census data from 1989 to 1994. She constructs a partial equilibrium supply and demand model and derives a reduced form expression for the change in US imports from Canada as a function of the initial Canadian import share in the US market, the level of US tariffs against Canadian imports, and time dummies to control for cyclical, exchange rate and other macroeconomic factors. Her results were quite striking. She found that the elimination of US tariffs had a statistically significant, positive, and large effect on imports from Canada. Each one percentage point reduction in tariffs is associated with a 9.6 percent increase in imports from Canada. For the United States, her estimates imply that total imports from Canada were 26 percent higher owing to FTA than they would have been otherwise. In terms of the growth of US imports from Canada between 1989 and 1994, this implies that over half (54 percent) of the \$42 billion increase in US imports from Canada was due to the FTA.

The Clausing (2001) study is also notable in that it is the only one available which used detailed product line comparisons to explicitly check for

trade diversion within the US due to more liberal trade with Canada. She does this by estimating an equation which explains US imports from countries other than Canada as a function of tariff liberalization of the US with Canada, average tariff liberalization with other countries, the initial share of Canadian imports, and time dummies to control for macroeconomic effects. If the Canada-US trade agreement were trade diverting from the US perspective, one should find that reductions in US tariffs on Canadian imports actually lowered imports from other countries. What she found was that in all cases, the coefficients on the variables indicating tariff liberalization on Canadian goods were statistically indistinguishable from zero. There was no discernible relationship between the extent of tariff liberalization on Canadian produced goods and import growth in the US from countries in the rest of the world.

A more recent study by Romalis (2005) uses a similar approach to Schwanen and Clausing but estimates demand and supply elasticities on trade volumes and prices using six-digit HS classifications. He finds that the Canada-U.S. FTA increased bilateral trade between Canada and the U.S. by 5.35% while NAFTA resulted in a 24% increase in trade between Canada and Mexico. However, Romalis also found that there were minimal impacts from either trade agreement on welfare due to the small reduction in prices largely being offset by reduced duties collected. Furthermore, contrary to the findings of Clausing, Romalis finds support for some trade diversionary effects under both the FTA and NAFTA.

A second category of studies use the gravity model of international trade to impute the impact of the FTA-NAFTA for Canada. The main variables used to explain trade are GDP levels, real exchange rate variables, and distance between country pairs. The popularity of this approach is primarily explained by the relative ease with which one can obtain the data necessary to implement a statistical model of bilateral trade. One estimates the model across a number of countries over time and adds a dummy variable intended to pick up the introduction of the trade agreement. Since the estimation includes countries both in and out of the agreement, the potential variation between these groups ought to help explain the added effect on trade that can be attributed to the existence of a RIA after controlling for the other variables. This approach has yielded almost no consistent results. Coefficients are highly unstable, insignificant, and often of the wrong sign, and very sensitive to the data period chosen. However if one has to conclude, almost all these studies find no impact of FTA-NAFTA on trade volumes. The major problem with this particular approach is the high degree of correlation between a number of macro variables and the introduction of the FTA, as has already been discussed. Estimating a model *ex post* over this period, most studies find that US income and the exchange rate changes “explain” most of the growth in Canada-US trade. The variable capturing the introduction of FTA-NAFTA actually does very little to add explanatory value. Other problems, as discussed by Frankel (1997), include the small number of observations and the fact that GDP and trade are both endogenous to the overall economic system. Examples of this type of approach include Frankel (1997), Krueger (2000), Gould (1998) and Soloaga and Winters (2000). Acharya, Sharma and Rao (2001) pursue a variant of this approach but are even more limited in that they look only at

bilateral Canadian-US trade by sector and thus have no non-NAFTA countries for purposes of comparison. They estimate a time series model of Canadian export growth to the US from 1980 to 1998, finding that growth in Canadian exports to the US is largely explained by US income and the depreciation of the Canadian dollar. Their estimates suggest that of the total increase in exports, only 8 percent is due to the FTA. A close examination of their parameter estimates reports a US income elasticity for Canadian exports of 2.7—a highly implausible number. The results largely follow from the limited manner in which the impact of FTA-NAFTA are imputed.

Some of these studies focused on the issue of trade diverting effects of NAFTA from a US perspective including Canadian trade. Both Krueger (2000) and Soloaga and Winters (2001) are largely concerned with this issue and both focus on the US-Mexico aspect of NAFTA. Krueger claims to find no evidence of trade diversion and Soloaga and Winters find some mild evidence of trade diversion within NAFTA—largely these effects hinge on a shift towards Mexican produced goods at the expense of goods from East Asia.

A recent variant on the trade diversion argument has found its way into the Canadian policy debate following the release of John McCallum's (1995) study on international versus interprovincial trade using pre FTA data. It is well known that, subsequent to the FTA, there was a substantial increase in international trade, while there was a mild decline in interprovincial trade. From 1988 to 2000 interprovincial trade declined as a percentage of GDP from 27 percent to around 20 percent. Is it the case that "trade diversion" has occurred within Canada so that north-south Canada-US trade is replacing east-west interprovincial trade as a consequence of FTA? There are two points to make about this type of trade share shift analysis. First, and most important, the fall in the share of interprovincial trade cannot be trade diversion in the traditional sense. Trade diversion, which is income reducing, only occurs if a low cost source of imports is replaced with a high cost source of imports. In the absence of internal tariffs on trade between provinces, if a province shifts its source of imports from another province to a source outside of Canada, it cannot result in trade diversion. There remains, however, the possibility that trade patterns shift and that clearly seems to have occurred in the data. Not surprisingly, the removal of barriers on international trade, with no barriers to interprovincial trade, led to an increase in international relative to interprovincial trade. Helliwell, Lee and Messinger (1999) use a gravity model to infer the extent of the shift in trade. Their estimates suggest that in 1996 interprovincial trade would have been 13 percent higher if the pre-FTA trade structure had remained in place *and* Canadian and US GDP by state and province were the same as actually existed in 1996. In the case of Canada, the latter assumption is highly implausible given the income creating effect of trade with the US that occurred over that period.

Foreign Direct Investment

The impact of trade agreements on FDI flows and stocks remains in general a contentious area. Unlike trade, the impact of increased outward and inward FDI is theoretically ambiguous with respect to its ultimate effects on economic performance. There are a variety of potential channels at work when a

free trade agreement comes into place. Inward FDI could rise or fall depending upon the location effects of the trade agreement. Canada could be a more desirable place for foreign firms to undertake production for both domestic and export purposes as trade barriers are reduced, with the implication that increased trade and inward FDI occur simultaneously, or are complementary to one another. On the other hand, a reduction in trade barriers could lower FDI in some sectors if firms no longer need to locate within the Canadian market in order to serve Canadian demand. In the latter case, FDI and trade would be viewed as substitutes as trade barriers are removed. With NAFTA, firms can produce from a US or Mexican base and then export to Canada. With respect to outward FDI there are similar tradeoffs from the point of view of Canadian multinational firms. Canadian outward FDI may transfer low-wage, low-skill production to other countries, and at the same time increase the production of high value-added goods to be exported, thus causing an increase in high-paying, high-skill jobs in Canada. Thus, it may be that higher outward FDI in one industry causes exports to increase in other industries. Even if one finds the intra-industry relationship between trade and FDI to be one of substitutes, they may be complements when considering inter-industry links. Some outward Canadian FDI may also simply reflect the attempt by Canadian firms to avoid trade harassment in the US market. On theoretical grounds, there are no strong a priori expectations as to the effect of FTA-NAFTA on FDI patterns other than an expectation that two-way flows would rise.

Given that there is potential two way causality running between trade and FDI, one would in principle like to know what aspects of the agreement might have spurred additional FDI in the absence of trade liberalization. The Canada-U.S. FTA included a number of provisions which reduced discrimination against bilateral foreign direct investment, including the extension of rights-of-establishment and national treatment. A range of prominent sectors, such as basic telecommunications, was excluded from coverage under the investment liberalization provisions of the Agreement and Canada's existing foreign investment screening procedures were left in place (Globerman and Walker, 1993). Nevertheless, the thrust of the investment provisions of the FTA was clearly to expand the legal scope for bilateral direct investment. Moreover, the inclusion of a relatively robust dispute resolution procedure arguably reduced the risks of either government acting in a discriminatory manner towards investors from the other country.

Independent of its relationship to trade liberalization, there is quite a large literature which establishes that FDI promotes competitiveness through increased innovation, technology transfer and international knowledge spillovers (Caves, 1974; Globerman, 1979; Blomstrom and Persson, 1983; Blomstrom and Wolff, 1989; Xu, 2000). Some of these studies will be reviewed later in this chapter when the growth and dynamic effects are discussed. The literature on these effects however is largely international in nature; no specific FTA studies deal with the issue directly.

There are also relatively few studies which attempt to isolate the impact of the FTA-NAFTA on FDI patterns or relate them to shifts in trade patterns. But, those that do, generally come to similar conclusions. Schwanen (1997) looks at

the period from 1989 to 1995. He noted that while the level of FDI in Canada was increasing, Canada's relative share of global FDI was falling due to an explosion of FDI elsewhere. He also notes there was a trend toward Canadian FDI going to destinations other than the U.S. Similar results are found in a case study of three regional integration agreements. Magnus Blomstrom and Ari Kokko (1997) look carefully at the Canada-U.S. FTA. They suggest that the effects of liberalizing investment on Canada would be expected to be modest at best. Looking at the data from 1983 to 1995 they conclude that bilateral direct investment has increased since the early 1990s. However, before that, the relative importance of bilateral direct investment changed erratically, and it is difficult to discern a consistent pattern in FDI flows that would clearly be related to the FTA. Inward direct investment from countries other than the United States exhibits no consistent pattern over the period studied, although the largest inflows took place between 1988 and 1990, right after the implementation of the FTA. However, like Schwanen, they note an increasing share of Canadian outward FDI going to places other than the US after 1990. They argue that the profitable opportunities encouraging a redirection of Canadian direct investment outflows were not related to FTA, although it may have played an important role in that it guaranteed access to the US market, so that available FDI resources within Canadian firms could instead be utilized to establish Canadian presence in other markets.

More recently, there have been some econometric studies which take up these issues. Globerman and Shapiro (1999) estimate capital inflows to Canada and capital outflows from Canada for the period 1950-1995. The dependent variables used are FDI in Canada and Canadian FDI abroad, with explanatory variables including Canadian GDP, GDP abroad (US and UK), relative costs (Canada-US, Canada-UK), exchange rates, investment climate (investment to GDP ratio in Canada), Canadian imports and exports. They estimate two equations, one for inbound foreign investment into Canada (FDI) and one for outbound foreign investment from Canada (ODI). The results suggest that FIRA (the Foreign Investment Review Act) had little influence on either FDI or ODI. On the other hand, trade liberalization agreements (NAFTA, FTA) had statistically significant impacts on gross FDI and ODI flows with a net bias toward ODI.

Hejazi and Safarian (1999) analyze the impact of outward (inward) FDI on the economy, specifically on trade (imports, exports) using a gravity model of bilateral trade. Using bilateral trade and FDI data between Canada and 35 other countries over the period 1970-96, the paper establishes that trade and FDI are complementary.³ The results indicate that outward (inward) FDI increases exports (imports) and the size of the impact of inward FDI on imports is one-third that of outward FDI on exports. Over the period 1970-1996, the stock of inward FDI was larger than the stock of outward FDI. The ratio of the stock of inward FDI to GDP fell from about 30 percent in 1970 to 20 percent in the early 1990s and increased

³ This study also looks at more detailed industry level links between trade and FDI for Canada, the United States, the United Kingdom and Japan. They find overall that outward FDI and exports are complementary rather than substitutes. For inward FDI they find that inward FDI tends to increase imports.

to about 25 percent in 1996. The ratio of the stock of outward FDI to GDP increased from about 7 percent in 1970 to 22 percent in 1996. That is, in 1996 Canada had about the same stock of outward FDI as inward FDI. They make no attempt to link these results directly to NAFTA. However, the timing suggests that FTA and NAFTA were at least partially responsible for these trends, and the news is certainly not bad. Generally, greater outward FDI tends to encourage exports and thus is trade creating. This type of result is now more common in the international literature. A recent OECD study by Fontagne (1999) using a large data set on FDI flows within the OECD finds complementarity between trade and FDI. He concludes that for each additional dollar of outward FDI around two dollars of additional exports are created. It appears therefore in the modern period, outward FDI has become a powerful trade creating mechanism.

Jobs, Wages and Employment

The argument that trade should be limited because imports destroy jobs is probably the oldest and most frequently advanced in public policy debates on trade and globalization. The argument was heard both in the public debate leading up to the FTA and in the NAFTA debate. It played a much larger role in US public discussion on NAFTA than was the case in Canada, however, likely due to the closer proximity to Mexico. Given the export-oriented nature of the Canadian economy, it may also be the case that most Canadians are aware that exports create jobs. In the short to medium run, following a shift in trade policy, it is possible a trade deficit or surplus may arise, and thus jobs created by exports may be more or less than offset through jobs destroyed by increased imports. But in the long run these ought to balance out. Most economists argue that movements in the rate of employment and unemployment have far more to do with macroeconomic factors and shifts in labour force participation rates than they do with trade policy. To quote trade historian Douglas Irwin:

In fact, the overall effect of trade on the number of jobs is best approximated as zero. Total employment is not a function of international trade, but the number of people in the labour force.
(Irwin 2002, page 71)

Nevertheless there are a large number of studies in the US that attempted to isolate, using various methodologies, the short to medium run impact of NAFTA on US jobs. One study, Hinojosa-Ojeda et al. (2000), looks at the impact in the US labour market of imports from Canada and Mexico over the period 1990 to 1997. Looking just at imports, they estimate that job losses within the US due to imports from Mexico would be 299,000, and would be 458,000 for imports from Canada. That is an average of 37,000 jobs *per year* for Mexican imports and 57,000 *per year* for Canadian imports. As they observe, considering that the US economy creates over 200,000 net new jobs *per month* and causes the separation of about 400,000 workers *per month* from their jobs, the small relative share of potential job impacts from this trade is apparent. This type of argument, however, does not carry as much weight in Canada when a much larger share of the

economy is exposed to international trade. One has to deal more directly with the issue of the relative magnitudes of job creation and destruction.

In Canada, it is generally clear from evidence in the 1990s that increased trade exposure of the economy has driven a great deal of job creation, for whatever reasons those trade increases occurred. A central question is whether employment gains in export-oriented and related sectors compensate for employment losses in industries facing import competition, or alternatively whether jobs are reallocated from the tradables sectors—notably manufacturing—toward non-tradable sectors such as services. It is first worth pointing out that a large number of jobs in Canada depend on exports. Gera and Massé (1996) found that the expansion of exports accounted for around 75 percent of new jobs (1.4 million) between 1971 and 1991. A Statistics Canada study (1999), estimates that in 1995 around one in five jobs in Canada was directly or indirectly related to exports. On balance, the available evidence suggests that the net impact of trade on employment has been positive. Gera and Massé (1996) found that, despite the negative employment impact of imports, trade accounted for 23 percent (719,000) of net new jobs in Canada between 1971 and 1991. However, during the second half of the 1980s, trade had a small net negative impact on employment.

As in the last section in which the question is more specifically focused on the impact of a particular trade agreement on jobs, it becomes more difficult to make a definitive assessment. In the 1970s and 1980s, there were a large number of studies on the labour market adjustments required by trade liberalization. The OECD (1989) conducted a number of studies on the employment effects of trade liberalization and summarized the evidence available at that time. It concluded that the net impact of trade liberalization on employment is in general small relative to that occurring for other reasons, such as technological change. It is commonly argued that trade amongst OECD countries can be characterized as intra-industry (i.e. trade in similar products). Adjustment in this case involves shifting employment and other factors of production within a firm to new production lines, or shifts within an industry. As the bulk of trade liberalized under the FTA was characterized as intra-industry rather than inter-industry trade it was argued that labour adjustment under the FTA would be less of a problem.

The emergence of the deep and long recession that began in 1989 led many to associate job losses in the recession with the implementation of the FTA. What is apparent is that the recession and the FTA simultaneously led to large pressures for structural adjustment in the economy. There are a number of Canadian studies which look at the impact of the FTA on employment through a comparison of high and low protection sectors.

a) Gaston and Trefler (1997), argue that the FTA was not the primary cause of most of the job losses in the Canadian manufacturing sector during the 1989-1993 period. According to the authors, FTA tariff cuts account for no more than 15 percent of employment losses. They find that most of the employment losses were due to the recession of the early 1990s, which they attributed to the Bank of Canada's fight against inflation, a consequence of which was high domestic interest rates and a strengthened Canadian dollar.

b) Schwanen (1997) argues that the FTA did not contribute to Canada's employment problems in the early 1990s in any significant way. Sectors most

sensitive to the FTA do not appear to have fared worse than manufacturing as a whole. Moreover, he argues that the poor employment performance of some sectors was primarily due to factors other than the FTA—for example, import competition from non-US sources (leather and electronics products), the recession (construction materials), or long-term decline not related to trade (fish products, shipbuilding).

c) Trefler (1999) finds that the FTA reduced employment in manufacturing by about 5 percent over the 1988-1996 period while industries exposed to large tariff cuts experienced relatively large employment declines of about 15 percent over that period.

d) Beaulieu (2000) distinguishes between skilled and less-skilled workers using production and non-production works as proxies for each group respectively. He finds that the FTA lowered employment among less-skilled workers but had no impact on skilled workers.

Another aspect of trade liberalization that has received a lot of attention is its potential impact on the distribution of income and wages. There is a school of thought that argues that the rising inequality between the skilled and unskilled in OECD countries is due to increased competition from low wage unskilled labour in developing countries. The available evidence suggests trade is not the answer, and most analysts have come to the conclusion that technological change, which is biased against employment of low skilled workers, has been the major cause. Slaughter (1999) provides a useful summary of this debate.

In Canada, the trade and wages debate, as it is known, has been quite muted. This is for the simple reason that Canada has not experienced the same rise in skill premia that occurred in the United States and other countries although the same general trend has been observed here. In the case of the FTA, the argument was clearly less relevant as opening up Canadian markets to US imports was a case of opening up the economy to high wage, not low wage competition. On the other hand, the FTA might have hastened a process of structural change that was under way, leading to job losses or wage losses for unskilled workers. Total manufacturing employment in Canada declined from 2,130,000 to a low of 1,786,000 (or 16.1 percent) between 1989 and 1993. Job losses among production workers was larger in percentage terms than among non-production workers. However, manufacturing employment, in absolute size, has actually increased since then and surpassed 2,300,000 in 2002. As noted by Curtis and Sydor (2005), Canada has been one of the few industrialized countries to have increased total manufacturing employment over this period and trade has played an important role in this.

There are only a few studies on the link between the FTA and the relative wages of low-skilled workers in Canada. These focus on the manufacturing sector only and offer somewhat conflicting evidence. Some find a positive impact of trade on the relative wages of low-skilled workers in Canada. For example, Trefler (1999) finds that the FTA increased the wages of production workers relative to non-production workers in manufacturing. Gu and Whewell (2000) report that imports to Canada are in fact more skilled-labour-intensive than Canadian manufacturing exports and suggest that increased trade has not hurt the wages of unskilled versus skilled workers. In contrast, Baldwin and Rafiquzzaman (1998)

find a direct link between increases in the wage premium of skilled workers and changes in trade intensity. Sectors where import competition increased the most (labour-intensive, product-differentiated and natural resources sectors) also saw the largest increases in the wage premium of non-production workers. However, these results are not directly comparable to those above, as the authors examine changes in relative wages at only a sectoral level and do not provide evidence for manufacturing as a whole.

Schwanen (1997) finds some evidence that, in the immediate post FTA period, manufacturing wages grew faster those sectors that had previously been open while sectors newly exposed to the FTA did not fare as well. Beaulieu (2000), on the other hand, while finding an effect on employment finds no evidence of any impact on earnings for either skilled or less-skilled workers. Townsend (2004), using micro-level data and controlling for worker's characteristics such as education and experience, explores a number of questions relating to the impact on workers of the FTA. He finds that relative wages fell in those industries faced with the deepest tariff cuts, and tended to be low-end manufacturing workers. Lemieux (2005) explores a slightly nuanced version of this question asking whether wages rates in Canada and the U.S. have converged post FTA. He finds that wage rates between the two countries were quite comparable in 1984 but have diverged to some degree since then, most notably in the wage premium associated with higher education rising much more in the U.S. than in Canada.

On balance, one could conclude that the FTA contributed mildly to job losses in Canada in the early 1990s, but the overall effect was relatively modest and was likely off-set by employment gains elsewhere in the economy. Similarly, while there may have been some skill bias in wages resulting from the FTA, this effect too was not overly pronounced and likely relatively small compared to other changes ongoing in the economy at the time.

Productivity

The productivity effects of the FTA have been the most controversial of the ex post FTA results after employment. Many ex ante studies of the FTA, including my own (Harris 1984), suggested the FTA could significantly raise productivity in Canadian industry through a variety of channels—improved scale economies, longer production runs, improved resource allocation across sectors due to better exploitation of comparative advantage, and increased competition due to more open markets. The debate on productivity effects was given added impetus by an increase in the labour productivity gap between Canada and the US, which accelerated after 1994 as discussed by Bernstein, Harris and Sharpe (2002). From 1977 to 1994 the Canada-US gap in output per hour in manufacturing averaged 14 percent. Since 1994, however, Canada's relative gap has risen 20 percentage points from 12 percentage points in 1994 to 32 percentage points in 2001. Output per hour in Canadian manufacturing fell from 88 percent of the US level in 1994 to 68 percent in 2001. Clearly productivity did not increase as was expected, but worse, it actually declined in the latter part of the 1990s. The determinants of productivity growth are quite complex, and the story of the late 1990s is as much about the acceleration of US productivity growth and the US

technology boom as it is about the situation in Canada after the introduction of free trade. The debate on the situation in the late 1990s has tended to cloud what more direct evidence is available on the impact of the FTA on productivity. The studies that do attempt to isolate the impact of the FTA generally indicate that it was a positive impact on productivity.

Trefler (1999) is the most detailed study on the productivity effects of FTA for the manufacturing sectors during the 1989-96 period. The impact of tariff cuts is estimated for manufacturing as a whole and for the most affected industries (the industries faced with tariff cuts greater than 8 percent). The data covers the years 1980-96 and is mostly at the 4-digit SIC level (213 manufacturing industries). He looks at the average annual change of average labour productivity in each industry over the pre-FTA period and over the FTA period. The analysis includes as explanatory variables the differences over the two periods for the following variables: (i) the average annual change of the preferential tariff concession extended to the US (the difference between the Canadian tariff against the US in each industry and the Canadian tariff against the rest of the world in each industry, and (ii) a control variable for supply-demand changes and technological changes. He estimates the change in the growth of productivity due to the FTA tariff concessions in the manufacturing as a whole and in the most protected industries (tariff cuts larger than 8 percentage points over the FTA period analyzed, 1988-96). The tariff cuts raised labour productivity at a compound rate of 3.2 percent per year (out of 3.5 percent) for the most impacted industries and at 0.6 percent per year (out of 2.5 percent) for manufacturing as a whole. The study strongly supports the view that high rates of domestic protection contributed to large productivity losses relative to the situation with free trade. Even the aggregate numbers are significant. Cumulating the estimated FTA effects over the eight-year period, total productivity in manufacturing would have been 5 percent less by 1996 without the FTA than with it.

Acharya, Sharma and Rao (2001) estimate the impact of intra-industry trade, inter-industry trade, firm size, capital intensity, and the FTA on the level of labour productivity using data on 84 Canadian manufacturing industries with 15 years of data (from 1984 to 1997). Their results suggest that increases in intra-industry trade raised labour productivity. Employment per establishment is positive and significant, indicating that the larger the size of the firm, the higher will be labour productivity. Both of these effects are consistent with the view that scale and intra-industry adjustment were the major sources of adjustment precipitated by the FTA—to be discussed in the next section. Nevertheless, having controlled for these variables, they find that the FTA had a significant and positive impact on labour productivity levels in Canadian manufacturing. Their parameter estimates imply that the FTA raised labour productivity in 1997 by about 18 percent relative to what would have occurred without the FTA. However, given their identification of the FTA with a post 1988 dummy variable, it is possible the attribution is overstated. On the other hand, the fact that they control for both the level of intra-industry trade specialization and firm size, suggests they may have understated the total impact of the FTA on productivity.

The above studies do not attempt to isolate the factors by which more liberalized trade raises productivity. In the next two sections, we consider studies

which look at the issue in more detail and try to isolate some channels through which this might occur. It is important to remember, however, that productivity growth is a complex process determined by the interaction of many different factors. While the evidence suggests that the FTA contributed positively to productivity growth in the manufacturing sector, there are clearly a number of other factors at work. Nevertheless, as Treffer (1999) notes, it is remarkable to find government policies which yield productivity benefits of this magnitude.

Specialization and Scale

Of the possible sources of increased productivity that come from increased openness, and one of the most debated prior to the FTA, was the potential for firms to achieve greater scale and more efficient specialization across product lines. A long history of analysis of Canadian industrial development had suggested that Canadian producers were generally too small and operated plants that were too diversified with relatively short production runs.⁴ The strong gains in productivity in automotive plants which were achieved by product line rationalization after the 1964 Canada-US Auto Pact were suggestive of what might occur under free trade with the United States. At the same time, studies on European integration had suggested that trade liberalization in manufacturing was largely precipitating adjustment within industries leading to increased *intra-industry trade* and increased *intra-industry specialization*. Intra-industry specialization implies countries specialize within industries in particular product niches. Economies of scale and specialization are the technological factors which drive this type of specialization when markets open to greater international competition. Opening the Canadian market to competition on a priori grounds should have induced this type of specialization after the FTA. There are two factors mitigating against this type of efficiency gain: very large transport costs, and industries that are heavily reliant on natural resource inputs. If either of these forces is strongly present, then intra-industry specialization is less likely. What impact did FTA have in this regard?

By and large, the studies generally are indicative that the specialization and scale effects that were predicted have subsequently taken place. One factor which may well have significantly slowed the adjustment process in intra-industry specialization, as suggested by some commentators, was the depreciation of the Canadian dollar during the 1990s. Exchange rate depreciation would tend to provide import competing manufacturing with an increased margin of protection as tariff walls came down. This exchange rate protection effect would certainly have reduced the incentives for Canadian producers to make the type of adjustments in the organization of plants that the intra-industry specialization argument would have suggested, and thus delayed the adjustment process to free trade with the United States.

Head and Ries (1999) document that the scale of the average manufacturing firm increased by 34 percent from 1988 to 1994. The number of establishments over the same period declined by 21 percent. In contrast, from 1980 to 1988, output per plant increased by 3 percent. These numbers probably

⁴ See Eastman and Stykolt (1967), Harris (1982) and Wonnacott and Wonnacott (1967).

overstate the scale growth post FTA because of undercounting in the Statistics Canada data of small firms. Head and Ries argue these increases were largely due to US tariff reductions and not Canadian tariff reductions. Gu, Sawchuk and Whewell (2002) look at the dynamics of this process by focusing on increased firm turnover as the source of FTA-induced productivity benefits. Tariff reductions expose firms to increased global competition, which tends to drive out the less efficient firms, giving rise to increased firm turnover. The decline in the number of less-efficient firms in the economy contributes to overall productivity growth. To test the importance of the above two explanations for productivity growth, they examine whether the reduction in Canadian tariffs since the implementation of the FTA has had a significant effect on firm size, firm entry rates, and firm exit rates using a database that provides comprehensive coverage of firms across 81 manufacturing industries from 1983 to 1996. They suggest that while there was no evidence that the that FTA-related tariff cuts led to an increase in *average* firm size in Canadian manufacturing, they did find two interesting impacts of tariff reductions. First, tariff reductions forced the exit of the least productive manufacturing firms. Second, they found quite robust evidence that that the FTA tariff cuts had a positive and significant effect on the exit rate of Canadian manufacturing firms. Their calculation shows that the tariff cuts in the FTA period increased the exit rate by 0.7–2.0 percentage points for the most-affected industries. It appears, therefore, that trade liberalization was having a strong rationalization effect.

One of the difficulties with these studies is that firm size, their measure of scale, does not correspond to what most pre-FTA industry studies focused on, which was production runs on individual product lines within plants. The reason most authors used value of firm shipments as an output measure was simply data availability. Recent efforts by Statistics Canada have rectified the situation; there are now new data sets which allow specific examination of product line specialization within plants. Baldwin, Beckstead and Caves (2001) use longitudinal data on all plants in Canadian manufacturing over the period 1973-1997. They are also able to match plants to firms so they can distinguish between plant level and firm specialization across detailed product groups. Their findings are striking. They find that there has been a general increase in specialization of both firms and plants. But the most significant trend was within plants in a given industry—what they refer to as “commodity specialization”. Commodity specialization at the plant level emerged late in their data period, around the time of implementation of FTA. Moreover they also find that plant specialization increased most in those plants that moved most strongly into export markets.

But in contrast to firm-level diversification, the decrease in plant level diversification has a discontinuous break around the time of the Free Trade Agreement between Canada and the United States. Product line specialization increased dramatically just before the FTA and this increase continued well into the 1990s. As a result, product-run length within plants increased dramatically over the period before and after the FTA. The evidence shows that product

specialization increased more than industry level specialization in the late 1980s. (Baldwin, Beckstead and Caves 2001, p. viii)

The study then goes on to check whether this break in specialization patterns can be specifically related to trade liberalization. They find a strong relationship between the export intensity of a plant and its specialization. Plants that export more of their sales are likely to be more specialized. They also find that during the transition period from the late 1980s to the early 1990s, those plants that increased their export intensity increased their plant specialization. The timing is strongly suggestive of the proposition that the FTA induced the rationalization within plants. To date, this is the only study available on the issue of product line specialization but it is strongly supportive of the arguments advanced by economists prior to the FTA on the likely impact. Overall, these effects should have raised plant level efficiency and ultimately should be reflected in plant level productivity data. The data on industry level productivity discussed previously suggests this is exactly what has occurred.

A different perspective on the specialization issue is provided by intra-industry trade statistics. These types of indexes attempt to show whether intra- or inter-industry trade specialization has any particular pattern, and its likely effects. Both history and theory suggest that the FTA should have increased intra-industry trade (usually identified in the literature as IIT). Three studies have looked at this issue. Harris and Kherfi (2000), Andressen, Harris and Schmitt (2001), and Acharya, Sharma and Rao (2001). Harris and Kherfi found evidence of general increases in intra-industry trade from 1988 to 1995. Looking at productivity dynamics over the pre and post 1988 period, they found that increases in Total Factor Productivity were significantly and positively affected by intra-industry specialization.

Acharya, Sharma and Rao (2001) compute a different specialization index using trade flows with the US for 84 manufacturing industries for 15 years of data from 1983 to 1997. They confirm that intra-industry trade (IIT) increased relative to inter-industry trade over the period by a factor of approximately two. They undertake to try to explain the growth of intra-industry trade by a few variables but their results are generally inconclusive. However, both they and Treffer (1999) are unable to detect a significant FTA effect using time dummy variables as an FTA proxy.

Andressen, Harris and Schmitt (2001), using much more detailed trade data, argue that the overall trends on intra-industry trade are sensitive to the index used. By some methods, IIT rose and by others it remained relatively stable over the period. Two significant problems occur within the aggregate trends. First is the importance of the auto industry where IIT was quite high prior to the FTA. The second problem is the role of resource prices and comparative advantage trade. The aggregate trends include resource trade and are sensitive to shifts in natural resource prices such as fluctuations in oil prices. One could argue that since there was no predicted impact on specialization within these sectors they should be excluded when judging the specialization effects of the FTA. When one removes these sectors, the increase in IIT is much greater. On balance, however, one would

have to say there is no definitive proof that the FTA was responsible for these developments although the timing is suggestive.

Variety and Price of Goods and Services

Trade liberalization has as one of its major benefits lower prices for consumers and increased availability of goods and services. Lower trade barriers and more open markets both induce firms to lower prices and to increase the range of products supplied. Despite these widely recognized benefits, it has proven extremely difficult to quantify these effects. Even the most basic price impacts on consumers remains an area in which the absence of reliable data has made progress in this area almost impossible.

There are a couple of studies which at least bear on the issue. Head and Ries (2001), using some estimates of demand price elasticities in conjunction with actual tariff and import data, calculate the loss in consumer welfare that would come from imposing 1988 level Canadian tariffs on US imports in 1998 (by which time all such tariffs had in fact been removed) for each 3-digit industry. Summing across all manufacturing industries, they find the tariff imposition on imports from the US would cost Canadian consumers C\$7.86 billion in lost surplus. This is 4.1 percent of their 1998 expenditures on US-made manufactured goods. They note that this loss would be partially offset by increases in government duty revenue of C\$6.56 billion. Thus, the net benefit to Canadians of implementing the FTA tariff reductions appears to be C\$1.29 billion. This works out to about \$40 per person per year.⁵

The availability of new goods and services is also potentially a major source of increased consumer welfare. While putting a dollar number on this benefit is difficult to quantify, there has been some effort on identifying the extent to which the increase in NAFTA trade is associated with trade in new goods. A study by Russell Hillberry and Christine McDaniel (2002), using very detailed US trade data, decomposes the growth in the value of US trade between its NAFTA partners from 1992 to 2001 into price, volume and a “variety of good” effects. This latter effect looks at the change in trade values due to trading more or fewer goods as classified in the Harmonized Tariff Schedule. Of their measured 35 percentage point increase in US exports to Canada, 3.4 points of these represent trade in new goods as measured in the HTS schedule. The interpretation of this number is that Canadian imports from the US would have gone up by 3.4 percentage points holding the price and quantity of other pre-existing trade constant due to the export of new varieties to Canada. This would be viewed as a gain to consumers in Canada.

This study also provides some evidence on price effects. They report that on average, using the goods traded in 1993, inflation adjusted real prices of US

⁵ This of course is only one of many effects that real consumers experience as a result of the FTA. This ignores, for example, change in the incomes of consumers dealt with under the productivity issue, and changes in the supply price of both domestic imported and exported goods. The pro-competitive effects of the FTA may well have reduced prices to consumers on a range of domestically produced goods for example although there is no evidence on this in existing studies.

exports to Canada fell by 7.1 percent over the period 1992 to 2001. One cannot necessarily attribute these price reductions to the Free Trade Agreement other than to note that had trade volumes been at levels that existed prior to the FTA the beneficial impact of these price reductions to Canadian consumers would have been much less. Ironically, US import prices on goods coming from Canada actually went up 9.7 percent over the same period. Economists refer to the relative difference between changes in export and import prices as the terms of trade. This study seems to suggest that using the goods that were initially traded in 1993, the Canadian terms of trade with the US improved significantly ($9.7+7.1=16.8$ percent). Further research, however, on this issue would be required to measure to what extent the FTA-NAFTA would be responsible for these effects.

Innovation, International Spillovers, and Technology Transfer

In this section, the “dynamic gains from trade” arguments will be dealt with. These are the growth enhancing effects of trade and trade liberalization which operate through a set of mechanisms related to the international diffusion of technology, innovation, and the production and use of new knowledge. There is a very large literature associated with these potential channels running from trade to economic growth, most of them focused on international comparative experience. The most numerous studies in the area document an empirical statistical relationship running from trade and economic openness to growth.⁶ At a practical level, it is often difficult to distinguish between the impact of trade and trade agreements on productivity levels and the impact on growth rates of productivity, which are the primary determinants of the growth in living standards. Most of the productivity issues referred to earlier in this chapter implicitly are concerned with the impact of trade on productivity levels. Generally we think of increased trade as raising the level of income or productivity, but not necessarily having a permanent impact on the growth rate. Evidence on the “dynamic gains from trade” comes from three sorts of studies: i) the impact of the level of trade (measured relative to GDP on growth of per capita incomes, ii) the role of imports and FDI in facilitating the international diffusion of technology or what are known as R&D spillovers, and iii) the impact of exports on productivity growth. In each case, the literature tends to be fairly general, that is covering a wide range of countries, and does not relate specifically to the NAFTA case.

Evidence linking trade and economic growth, as measured by changes in per capita incomes, comes primarily from comparison of growth across a large number of countries in the post-war period known as the country-growth regression literature. The majority of these studies find strong evidence linking openness to economic growth—countries that have degrees of openness or lower barriers to trade tend to have higher growth rates of per capita income. Other important variables in these studies include investment, levels of education, and the starting level of income. One of the major problems, however, is that

⁶ Levine and Renelt (1992) is the most frequently cited study in this area. There are literally dozens of other growth regression studies which document this link. Harris (2002) discusses these and their interpretation for a country such as Canada which is both open and high income.

investment and trade are very highly correlated across countries and therefore it is difficult to disentangle the separate effects of trade and investment on income. Secondly, there is another problem in distinguishing cause and effect; trade affects income and income affects trade, especially in smaller countries, holding trade policy constant. Ideally one would like to measure the impact on income of exogenous or policy induced changes in trade. More recent research has attempted to correct for this ambiguity by looking at sources of variations in trade not due to income. In a study by Frankel and Romer (1999), they focus on that portion of trade which is driven by geography and therefore not by income. Redefining what they call geographically determined trade, they find a very large impact of this type of trade on per capita income levels—a one percentage point increase in the trade share or openness ratio, raises income by between one half and two percent. This is a very large effect. To put this in perspective, since the Canadian trade share has risen from about 0.50 to 0.80 or 30 percentage points since the inception of the FTA in 1988, this parameter estimate would suggest Canadian per capita income increases due to trade over the period would be anywhere between 15 and 60 percent! From 1989 to 2001, GDP per hour worked in Canada actually grew at an annual rate of 1.54 percent, or 21 percent over the entire period. No doubt some of that increase can be attributed to the increase in the trade share of the Canadian economy. Unfortunately these types of studies only provide a general indication of the direction of trade on income, and the variation across countries is likely to be large. The dynamic gains from trade have probably been substantial but measuring them with any precision is not possible.

Any one small country produces only a small share of the world's leading edge technology. Growth in Canada depends crucially on the diffusion of technology developed abroad to Canada. It has long been argued that trade facilitates or is an important mediator of the pace at which international technological diffusion occurs. There is a large set of studies which attempt to measure these "technological spillovers" and the role that trade plays. This was first done by measuring the impact of R&D expenditures undertaken in one country on productivity growth in another country. For example, Coe and Helpman (1995) and Coe, Helpman and Hoffmaister (1997), construct an index of total knowledge capital in each industrial country, and assume that trading partners get access to a country's stock of knowledge in proportion to their imports from that country. They find that access to foreign knowledge is a statistically significant determinant of the rate of total factor productivity growth within a country. The most obvious interpretation of this finding is that technological knowledge is diffusing from one country to another. The estimated effects are very large. In a widely-cited study, Keller (2001) estimates that diffusion from the G-5 countries to nine other small OECD countries contributed almost 90 percent of total effect of R&D on productivity growth. When one accounts for the fact that trade patterns impact on whose R&D knowledge flows to whom, the potential role for trade to increase productivity growth becomes important. These results imply for example that Canada, as a large trader with the US, benefits from US R&D. Bayoumi, Coe and Helpman (1999) estimate the cumulative effect of permanently increasing the share of GDP devoted to R&D by 0.5 percent in selected countries and then looking at the macroeconomic effects

over a 75-year period. In the case of the United States, for example, this would amount to about a 25 percent increase in R&D spending. Their simulations show this would produce a 6.8 percent increase in Canadian output.

In a related study that pertains directly to Canada, Keller (2001) looks at the role of distance, trade, FDI and language similarity as a propagation mechanism for international technological diffusion. Looking at distance effects, he finds that the average value of a dollar of US R&D in Canada is 78 percent of the value of a domestic dollar of Canadian R&D. Given that US R&D spending is about 40 times that of Canada, this explains the importance of US technological development to Canadian growth. However, he then goes on and attempts to measure the impact of other mediation channels—the combined roles of trade, FDI flows, and language similarity—on technological diffusion. The level of technology is approximated in an industry by the level of total factor productivity. The contribution of each OECD countries' own R&D on Canadian productivity growth is estimated. Keller then, measures the strength of bilateral technology diffusion across different country pairs by showing the share of a sender country in a given technology recipient's total technology inflows relative to distance. He finds that for many countries the distance effect on diffusion can be better explained by a combination of trade, FDI, and language factors. In the case of Canada, he estimates that 69 percent of total world technology diffusion to Canada originates from US R&D, while the share originating in the UK for example is much lower, equal to 13.5 percent. The combined results show that distance and low trade volumes reduce technological diffusion spillovers dramatically. The clear implication of these results are that: (a) Canada depends heavily on technological diffusion from the US, (b) bilateral increases in trade and FDI increase the magnitude of the impact of R&D conducted in other countries on Canadian productivity growth, and (c) given Canada's lack of proximity to other major industrial countries, there are no serious alternative countries as sources of technological spillovers. To the extent that FTA-NAFTA led to growth in trade and FDI, one can therefore conclude Canada's access to global technological spillovers increased as a direct consequence of these trade agreements and productivity growth subsequently benefited.

Lastly, there is a large literature on exporting and productivity. While there is general agreement that trade and growth seem to be related, more specific hypotheses have been tested with respect to the role of exports in contributing to productivity growth. Generally, the evidence on international data appears to be mixed. In a study on US productivity, Bernard et al. (2000) found that exporting did not explain productivity growth but that productivity growth seems to explain exporting. But in a large number of other cases it seems to go in the opposite direction. What Canadian evidence we have on this issue is more positive. However, most of it pertains specifically to data covering the early 1990s. It is therefore difficult to distinguish the transitional impact on productivity due to a shift towards export orientation from what might ultimately be longer-term growth effects. Gu and Whewell (2000) and Baldwin and Gu (2002), for example, found evidence that export-producing industries and firms experienced faster productivity growth following the FTA.

In conclusion, we can be sure there were undoubtedly dynamic growth effects from FTA and NAFTA. The Frankel-Romer estimates are probably an upper bound on this number, but even considerably more modest magnitudes suggest considerable growth benefits have been derived from these agreements.

Market Access and Dispute Settlement

In the debate leading up to the Canada-US free trade agreement, much of the public and business attention was focused on trade disputes which had taken place with the United States during the early and mid 1980s. Canadian firms became concerned with the increasing application of US domestic trade law with respect to anti-dumping, countervailing duties, and the use of “safeguard” import relief measures. Given that the US even then accounted for over 70 percent of the market for Canadian exports, it seemed that the economic risk to Canada posed by US protectionism was substantial and any reduction in this risk would be of great economic value. Canadian negotiating objectives were the complete elimination of these trade risks from US unfair trade law; the initial objective was to replace both Canadian and US laws on unfair trade with an agreement for common rules on subsidies, and a common antitrust policy on predatory pricing. The US, however, was not willing to go this far and the end result was the establishment of a binational dispute resolution process. Most of these arrangements are in place in Chapters 19 and 20 of the NAFTA agreement. Together with the reduction in US tariff and non-tariff barriers to Canadian imports, these were the parts of the CUSFTA which were intended to increase market access. Achieving more secure and predictable access to the US market for Canadian firms was a major objective of the Canadian government in signing the Canada-US free trade agreement.

There are also a number of investment provisions in Chapter 11 of the North American Free Trade Agreement covering investment, which are analogous to those covering goods and services. Their intention was to create more favourable and secure access on the part of any NAFTA based business wanting to invest in each of the three partner countries. Under the agreement, countries are obliged to accord national treatment and most favoured nation (MFN) treatment to foreign investors. This chapter also includes a dispute settlement mechanism. The chapter is unique as ‘the first comprehensive international trade treaty to provide to private parties direct access to dispute settlement as of right’ (Trebilcock and Howse 2001, page 355). The overall effect was intended to increase investment by reducing barriers, eliminating discriminatory behaviour by governments against investors, and generally to create expectations of regime and rule stability with respect to investment in all three countries.

Given the close interaction between trade and investment, those aspects of the agreement which tended to reduce uncertainty of future government interventions in either trade or investment flows are generally viewed by economists as having contributed to an increase in effective market access. Measuring the impact of these provisions though is considerably more difficult than, for example, measuring the impact of tariff reductions.

At one level, given the volume of trade between Canada and the US, one would certainly expect trade disputes. Between 1989 and 1994, there were a total of 57 disputes under Chapter 18 (5 cases) and Chapter 19 (52 cases) of the

Canada-U.S. FTA. The Chapter 19 (AD-CVD) disputes affected around US\$ 7 billion in trade (the lumber dispute accounted for almost US\$ 6 billion). On average during this period, the United States and Canada traded US\$ 185 billion annually. Therefore, disputes affected less than 4 percent of two-way trade. Under the NAFTA, between January 1994 and 2001, there were a total of 96 disputes (including Mexico) under Chapter 11 (12 cases), Chapter 19 (80 cases), and Chapter 20 (4 cases) of the NAFTA. The Chapter 19 dispute cases involving Canada and the United States between 1994 and 1999 affected US\$ 11 billion in trade out of an average annual trade of over US\$ 303 billion—again under 4 percent of total trade.⁷ These figures suggest trade disputes, while important, appear to be relatively minor against the backdrop of the volume of overall trade. Nevertheless, these disputes are politically very visible and legitimacy of the overall trade agreement is clearly heavily impacted by perceptions as to the efficacy and fairness of the process. The single largest “failure” has been the ongoing Softwood Lumber dispute between Canada and the United States.

Economic evidence on either the impact or effectiveness of dispute resolution mechanisms is relatively scarce. Most of the literature on these issues is either legal or political in nature. There are a couple of studies, however, which provide some insight as to the significance of both trade disputes, and the value of reducing the number of disputes. Jones (2000) looks at the data covering antidumping (AD) and countervailing duty (CVD) unfair trade cases in Canada and the United States from 1980 to 1997. In the pre-Canada-U.S. FTA period he notes that US firms filed an average of 2.8 AD cases per year against Canada, while in the post CUSFTA period AD filings dropped to 1.6 percent. This occurred despite a dramatic increase in the level of imports going into the US from Canada. Furthermore, the annual share of filings against Canada as a proportion of all filings dropped from an average of 7.4 percent to 3.9 percent between the two periods. Jones notes that the upshot of Chapter 19 is that it has changed the expectation of future benefits that US firms achieve by filing an unfair trade petition, and possibly altered the way in which US agencies administer US trade law. Of the 62 panel reviews up to November of 1998, 33 involved challenging US government agency decisions and 29 challenged Canadian government agency decisions. Of the 33 challenges to US decisions, the panels affirmed 6 of the original decisions, 10 were withdrawn or terminated, and 8 resulted in partial remands that did not result in overturning the original agency determination. However, in 7 of the unfair US trade cases, the dispute panel decisions resulted in significant changes relative to the initial agency determination. Looking at a statistical analysis of the data, Jones used the number of cases filed annually as the variable to be explained and controlled for a number of macroeconomic variables (exchange rate, unemployment etc.), a dummy variable to control for the steel industry in 1992, when there was a concrete joint effort by the US steel industry to file complaints against all steel supplying countries, and some dummy variables to capture the Canada-U.S. FTA. The results were estimated separately for AD and CVD cases, as well as jointly. In the case of AD actions, the Canada-U.S. FTA variable was highly significant. The

⁷ These estimates are drawn from a variety of sources.

estimated coefficient indicated that the FTA reduced AD filings in the US against Canada from 5.9 to 4.1 annually. In the case of CVD, he finds the impact of the Canada-U.S. FTA appeared only after the first Chapter 19 decisions came out against the US. Correcting for this, he finds the Canada-U.S. FTA reduced CVD filings against Canada from 4.3 to 2.4 per year. He emphasizes it was clear in this case that US firms filing unfair trade actions were only impacted significantly after a “demonstration effect” on the effectiveness of the panels. Jones concludes:

In summary the results suggest a robust inverse relationship between the introduction of Chapter 19 and unfair trade petition filings. The impact of chapter 19 appears to have been relatively quick, beginning soon after the introduction of the CUSFTA or after the first panel decisions, leading to a uniform shift in diminished filing incentives. (Jones 2000, page 155)

The evidence, therefore, is that the Canada-U.S. FTA and NAFTA significantly reduced the incentives for US firms to file unfair trade petitions against Canadian firms exporting to the US market. Was this of significant value? The data suggests that, even given the relatively small trade volumes subject to trade disputes, this may be the case. Unfair trade laws are thought to have two effects. First, if the petition is successful, they result in the application of duties and a reduction in imports. However, even if they are not successful, the simple act of filing has an important *trade harassment effect*. As noted by many trade scholars, one of the principal values to domestic firms having access to unfair trade laws is the ability to harass actual and potential competition. A study done a number of years ago Staiger and Wollack (1994) found that the mere investigation launched under an AD action tended to sharply reduce imports the year after the filing. This tends to have a deterrent effect in that those firms impacted either reduce their imports in anticipation of being harassed, or raise their prices. It is only recently that economists have quantified these effects.

Prusa (1992), (1997) conducted two important studies on these issues in the case of the application of US unfair trade law on the effectiveness of AD actions. Using a data set based on the line-item tariff codes identified in the cases documentation, he examines the imports from both countries named in the petition and those countries not subject to the investigation. Several important findings emerge:

First, AD duties substantially restrict the volume of trade from *named countries*, especially for those cases with high duties. His best estimates imply that imports fall by 50 percent in each of the three years following an affirmative finding. Actions that are settled reduce imports by 60 percent. Second, AD actions that are rejected still have an important impact on named country trade, especially during the period of investigation. Third, there is substantial trade diversion from named to non-named countries and the diversion is greater the larger is the estimated duty. Because of the diversion of imports, the overall volume of trade continues to grow—even for those cases which result in duties.

Prusa’s work shows that actual and potential market restricting effects of AD actions on countries impacted is very substantial. While there is no

comparable work on CVD cases the economic logic is the same. In conjunction with the work of Jones, the two sets of results suggest that the reduction in the application of unfair trade laws against Canada in the US market has had a substantial impact on Canada's exports to the United States. Unfortunately one of the negative aspects of preferential trade has come into play. Prusa's results on trade diversion suggest that undoubtedly suppliers from Canada and Mexico have had their sales increase in response to AD actions against non-NAFTA suppliers.

In summary, the evidence that exists suggests Canada has received substantial benefits in terms of increased trade through the dispute settlement process covering Chapter 19 actions. Other than the case studies on the legal aspects of Chapter 11 disputes, there is no economic evidence available. As of July 2002, there have been 23 cases under Chapter 11 and only 5 have led to arbitral decisions. The relatively small number of cases simply makes a statistical analysis of the impact of the chapter on investment flows impossible. As noted earlier, the overall impact of NAFTA on FDI has been positive. The economic value to resolving disputes more effectively constitutes one of the factors contributing to the larger bilateral FDI flows within NAFTA.

Conclusion

The overall impact on Canadian prosperity of the Canada-U.S. FTA and the NAFTA has been significant. In virtually all domains in which economic measurement is possible—trade flows, investment, employment, consumer benefits, productivity growth, improved competition in product markets and reduced exposure to protectionist actions in the US export market —there have been important measurable and positive impacts of this agreement.

Nations sign trade agreements first and foremost to secure economic benefits. There is virtual universal agreement among economists that a stable rules based trading system is the foundation on which international commerce has expanded and contributed to a remarkable period of rising world prosperity. For smaller and medium sized countries such as Canada, growth through international integration has become increasingly important. Moreover as Canada has shifted from the extraction of natural resource products to a manufacturing exporter, global market access has become a crucial determinant of Canadian employment and living standards. Since the end of World War II, Canada has secured its access to global markets as a participant in a number of multilateral, bilateral and regional agreements covering both trade and investment. In most instances, these agreements have been trade liberalizing. Undoubtedly the most important of these agreements were those under successive rounds of the GATT up to and including the Uruguay round and the FTA. Given the very large importance of the US market, however, the landmark Canada-US Free Trade Agreement stands out as the most significant in terms of its direct positive economic impact on Canada within the last two decades.

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