

Chapter 10: NAFTA and the Transformation of Canadian Patterns of Trade and Specialization, 1990–2012

Richard Harris and Nicolas Schmitt, Simon Fraser University

Richard Harris and Nicolas Schmitt, professors at Simon Fraser University, reviewed a variety of evidence on Canada's merchandise trade patterns and the changes in these patterns in both the pre- and post-NAFTA periods. Canada's integration into a common North American Free Trade Area occurred in two steps: first as a result of the 1988 Canada-U.S. free trade agreement (FTA), and then with the implementation of NAFTA in 1994, which covered Mexico as an extension of the 1988 FTA. Harris and Schmitt analyzed the impact of these agreements on the Canadian economy via comparative historical analysis of the changes in trade over the 1965–1990, 1990–2000, and 2000–2012 periods.

The 1990–2000 decade is referred to as *the* NAFTA decade, since this was the period in which the full impact of the two trade agreements on the Canadian economy would have been realized. Overall, Harris and Schmitt found that NAFTA led to substantially higher volumes of trade in all types of goods, increased Canada's integration with the United States and Mexico, and expanded trade with non-NAFTA trading partners. The Canada-NAFTA trade generally showed less specialization, with greater trade in primary commodities and intermediate goods. By contrast, Canada's non-NAFTA trade showed increased specialization, especially in imports of finished goods. Under NAFTA, Canada's trade volume rose across almost all sectors, with very large increases in the transportation and electrical machinery sectors. Generally, the changes observed in the NAFTA decade essentially accelerated many of the trade patterns that were evolving from 1965 to 1990.

However, the period of 2000–2012 led to a strong reversal in many of these trends. Notably, Harris and Schmitt found that Canada's trade in manufactured goods with its NAFTA partners declined as measured against GDP. In the same period, resource exports—particularly energy—increased, and there were also significant increases in resource prices, driven by growth in developing countries such as China. The authors examined several possible explanations for the NAFTA trade reversal. Of these, two stand out as leading candidates. First, the large real exchange rate appreciation that occurred in 2000–2012 is consistent with the observed decline in manufacturing exports and increase in resource exports. One can view this either favorably or negatively, but in either case this trend had little to do with NAFTA per se, except for the fact that since Canada's trade with NAFTA is so large it was most apparent in that trade. The second explanation often given is that increased competition from China and other low-cost exporters

is pushing Canada out of its NAFTA partners' markets for manufactured goods. Harris and Schmitt find some evidence of such a trend when viewed in the appropriate context.

The NAFTA Decade 1990–2000

NAFTA had a large impact on Canada's aggregate trade performance relative to the 25 years preceding Canada's entry into a continental FTA. In figure 1, the aggregate import and export trade ratios for Canada are graphed for the years 1965, 1980, 1990, and 2000. One can see the general growth in openness to trade driven by globalization and multilateral trade liberalization: the trade ratios increased from 1965 to 1990, and then both imports and export ratios underwent a substantial acceleration post-1990. From 1990 to 2000, volumes in goods trade basically doubled. The NAFTA decade also saw a decline in Canada's traditional role as an exporter of natural resource products and a shift towards exports of finished and intermediate manufactures. These trends are highlighted in table 1. The significant fall in commodity prices that began with the disinflation of the 1980s led to a substantial decline in primary exports from 1980 to 1990. But between 1990 and 2000, the implementation of the Canada-U.S. FTA and then NAFTA led to substantial increases in exports and imports of both finished and intermediate products. NAFTA was largely a trade-creating event from Canada's perspective, as non-NAFTA trade increased in both exports and imports. By far the bulk of this increase was in Canada-U.S. trade in finished and intermediate products.

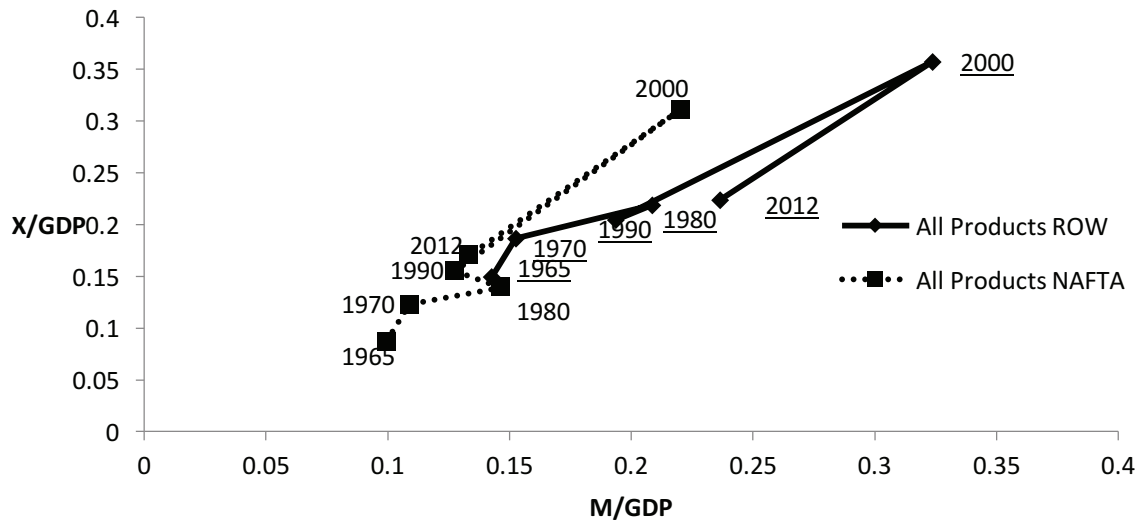
Harris and Schmitt also discussed Canada's trade with Mexico during this period. They noted a substantial increase in trade in both finished and intermediate goods, most of which did not exist before NAFTA. The pattern of specialization across SITC-2-digit sectors²³ remained remarkably stable from 1990 to 2000, as measured by methods employing revealed comparative advantage for analysis. Of particular note is the very important role that the transportation equipment sector played during this decade reflecting Canada's long-standing integration of its automobile sector in the North American market.

Table 1: Exports and Imports with Rest of World (ROW), NAFTA, and Non-NAFTA Countries per Product Type

Based on SITC4-digit data	1980	1990	1995	2000	2005	2012
Exports/GDP_Cdn						
Primary ROW	7.9%	4.9%	6.2%	8%	8.5%	9%
Intermediate ROW	9.1%	8.5%	14.5%	12.8%	10.1%	6.7%
Finished ROW	4.6%	7%	16.8%	14.9%	10.3%	6.7%
Primary NAFTA	4%	2.8%	7.5%	6.6%	6.9%	6.5%
Intermediate NAFTA	6.1%	6.5%	12.3%	10.9%	8.5%	5.2%
Finished NAFTA	3.7%	6.2%	15.4%	13.6%	9%	5.5%
Primary Non-NAFTA	4%	2.1%	1.6%	1.4%	1.6%	2.5%
Intermediate Non-NAFTA	2.9%	2%	2.2%	2%	1.6%	1.5%
Finished Non-NAFTA	1%	.8%	1.4%	1.2%	1.3%	1.2%
Imports/GDP_Cdn						
Primary ROW	5%	2.8%	4.2%	3.7%	3.9%	4%
Intermediate ROW	7.2%	7.3%	14.8%	13.1%	9.7%	7.9%
Finished ROW	8.4%	9.3%	17.6%	15.5%	12.8%	11.5%
Primary NAFTA	2.5%	1.3%	1.9%	1.7%	1.7%	1.8%
Intermediate NAFTA	5.9%	5.6%	11.5%	10.2%	7.2%	5.4%
Finished NAFTA	6.2%	5.9%	11.4%	10.1%	7.3%	6.2%
Primary Non-NAFTA	2.6%	1.5%	2.3%	2%	2.1%	2.3%
Intermediate Non-NAFTA	1.3%	1.7%	3.3%	2.9%	2.6%	2.5%
Finished Non-NAFTA	2.2%	3.4%	6.2%	5.5%	5.5%	5.4%

Source: Harris and Schmitt (2014)

Figure 1. Canada Trade Ratios 1965–2012



Source: Harris and Schmitt (2014)

Canada in NAFTA in the 21st century

Harris and Schmitt discussed three major developments that occurred in Canada’s trade patterns after 2000. The most remarkable of these is evident in the aggregate trade ratios graphed in figure 1. By 2012, both the export-to-GDP and import-to-GDP ratios had almost completely reversed their NAFTA-decade trajectories, returning to values seen before NAFTA’s implementation. This admittedly dramatic reversal has created considerable alarm among policymakers, and in some cases is simply interpreted as an indication that NAFTA is no longer as important or as beneficial to Canada as during the NAFTA decade. Harris and Schmitt argued that this is incorrect. They stated that these trade-ratio dynamics instead reflect the response of the economy to three larger external shocks that took place from 2000 to 2012: (1) The rise of China as a manufacturing powerhouse, subjecting all three NAFTA partners’ home markets to substantial import competition from China; (2) the global financial crisis, which led to a period of subpar growth in most of the developed-country markets in the world, including the U.S. market; and (3) a significant commodity boom in Canada, concentrated in the energy sector and accompanied by a real exchange rate appreciation of unprecedented magnitude from 2000 to 2012. According to Harris and Schmitt, given the overwhelming importance of NAFTA to Canada’s overall trade, each of these external developments were necessarily evident in changes in Canada’s trade patterns with its NAFTA partners.

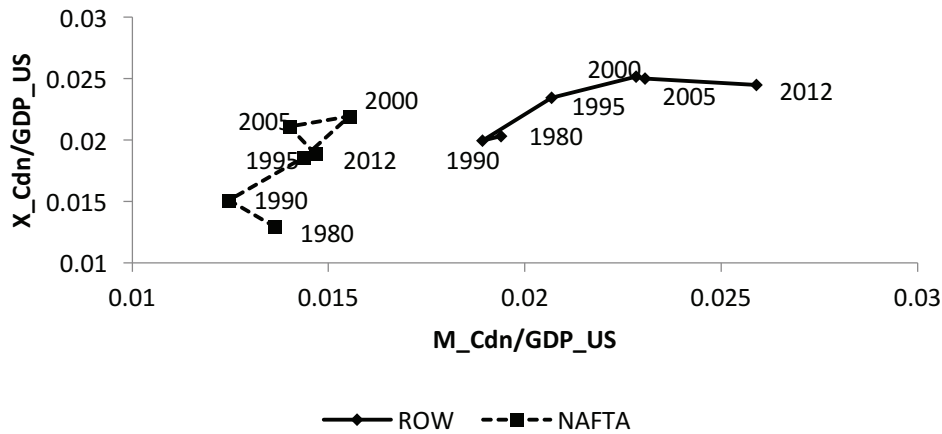
In this connection, Harris and Schmitt also pointed to the growth of non-NAFTA imports, which has been substantial for Canada. In 2000, non-NAFTA imports to Canada as a share of total imports stood at 32

percent; by 2012, that share had grown to 43 percent. This is in sharp contrast to the United States, which had a very stable ratio of non-NAFTA imports to total imports throughout the entire 1990–2012 period.

The second development noted by Harris and Schmitt was the slowdown in growth in the United States over the period from 2000 to 2012, relative to its growth in the NAFTA decade preceding it. This growth slowdown has been widely discussed and is attributable to a number of causes, including the terrorist attacks of 9/11, the Iraq-Afghanistan wars, the financial crisis of 2008–09, and the European sovereign debt crisis. From 1990 to 2000, cumulative U.S. growth was about 40 percent, in contrast with Canadian growth of 33 percent. From 2000 to 2012, however, U.S. growth was only 23 percent and Canadian growth a similar 25 percent.

Harris and Schmitt explained that Canada’s strong trade expansion during the NAFTA decade was clearly driven in part by the stronger economic growth of its major trading partner, who at the peak took in excess of 80 percent of Canadian exports. Looking at Canada’s trade measured against the U.S. GDP (both measured in a common currency) gives a more natural picture of the shifts in trade patterns, adjusting for changes in the size of the major trading partner within the free trade area. Canada’s trade evolution calculated this way is presented in figure 2 for both total trade and NAFTA-only trade. Harris and Schmitt note the contrast with figure 1—in particular, the dotted line showing NAFTA trade ratios, where the reversal is substantially more modest than in figure 1. Thus, correcting just for U.S. growth goes a long way toward eliminating the reversal puzzle. The authors pointed out that looking in the same way at total trade, which includes non-NAFTA trade, shows that Canada in fact had a very modest reduction in exports and an increase in imports, consistent with the authors’ previous discussion of the increased role of non-NAFTA imports. Harris and Schmitt stated that if one looks at Canada’s trade benchmarked against total NAFTA GDP, the picture is similar.

Figure 2: Canada Trade/US GDP Ratios



Source: Harris and Schmitt (2014)

The third shock during this period was the global commodity boom beginning in 2002 and, in particular, the substantial increase in global energy prices. Much of this boom was driven by the growth in demand for commodities in countries such as India and China. In addition, Canada's total energy reserves, particularly in heavy oil, also increased as new extraction technologies were developed. The energy share of Canada's net exports of natural resources went from 22 percent of the total in 2000 to 63 percent of the total in 2012. This is the single most important development in terms of the internal structure of the Canadian economy during this period.

The commodity boom, together with the disruptions caused by the global financial crisis, led to a remarkable appreciation, both real and nominal, of the Canadian dollar, which rose from 62 cents to the U.S. dollar in 2002 to above par first in 2007–08 and then again in 2011–12. Some measures of real exchange rate appreciation show even more dramatic changes during this era. For example, the ratio of unit labor costs (ULCs) of Canadian to U.S. manufacturing as a measure of the relative competitiveness of Canadian manufacturing to U.S. manufacturing increased by 109 percent from 2000 to 2012. The decline of manufacturing exports, as evident in the reversal and in the simultaneous strong appreciation of the currency, is commonly believed to be evidence that Canada is experiencing a decreased in competitiveness in manufacturing brought on by strong growth in natural resources (the so-called Dutch disease). A decline in the export-to-GDP ratio in non-commodity trade is often interpreted as the primary indicator of Dutch disease. Harris and Schmitt look at this issue using a basic trade-elasticities approach in which relative prices and incomes determine shifts in import and export demand. This approach takes

both of the exchange rate movements as given and assumes full pass-through of the exchange rate changes to demand prices.

Looking first at non-commodity exports, it is apparent that an export demand model with a price elasticity of minus one and an income elasticity of unity comes very close to replicating the observed data. The implication of the model is that Canada's market share in the United States, measured as total export revenue relative to U.S. income, stayed about constant during the period. Thus, while there was a large exchange rate appreciation, demand conditions in the United States were such that movements in export revenues measured in U.S. dollars were parallel to movements in U.S. income. However, export revenues measured in Canadian dollars declined by the full amount of the exchange rate appreciation. Thus, export revenue from manufactures measured relative to Canadian GDP also declined by a similar magnitude. So by this account, "Dutch disease" in Canada's case was not a loss in Canada's relative market share in the U.S. market, but rather a reflection of the role of the exchange rate change in deflating Canada's domestic currency export revenues.

The standard Dutch disease theory would also predict that the exchange rate appreciation would be accompanied by an increase in imports relative to GDP. The trade reversals evident in figure 1 are not consistent with this theory, since both exports and import ratios declined from 2000 to 2012. This remains a major puzzle, Harris and Schmitt concluded.

References

Harris, Richard, and Nicolas Schmitt. 2014. "NAFTA and the Evolving Structure of Canadian Patterns of Trade and Specialization: 1990–2012." Paper prepared for the Department of Foreign Affairs and International Trade, Ottawa, November.

Harris, Richard, and Nicolas Schmitt. 2014. "NAFTA and the Evolving Structure of Canadian Patterns of Trade and Specialization." Presentation at the conference "NAFTA at 20: Effects on the North American Market," June 2014. http://www.dallasfed.org/assets/documents/research/events/2014/14nafta_harris.pdf (accessed December 18, 2014).