The Canada-US bilateral component of NAFTA essentially began on January 1, 1989 when
the Canada-US Free Trade Agreement (CFTA) went into effect. In this paper we examine
how agriculture and agricultural trade between Canada and the United States have fared over
the 7 years of experience with the trade agreement. We speculate on the role of the
agreement on changes in trade and on what might lie ahead.

Trade in goods and services between the United States and Canada is important for the United
States, and vitally important for Canada. The same is true for agricultural trade. About 50
percent of Canada's agricultural exports go to the U.S. and 35 percent of Canada's agricultural
imports come from the U.S. For the United States 11 percent of agricultural exports go to
Canada and 19 percent of agricultural imports come from Canada (3). U.S. agricultural
exports to Canada totaled $5.9 billion in fiscal 1996, second only to Japan.

In the late 1980s, political leaders in both countries believed that a bilateral trade agreement

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1Respectively, Senior Researcher and Anderson Professor, Department of Agricultural Economics, The Ohio State University, Columbus. Presented at the Tri-National Symposium, "NAFTA and Agriculture: Is the Experiment Working?" Nov.1-2, 1996, San Antonio, Texas.

2Number in parenthesis refers to an item in the list of references.
was in their own best interests. The turbulent conditions in global agricultural markets and the new GATT negotiations provided additional incentives for improving the environment for trade between the two countries. Compared to agricultural tariffs in other countries, Canadian and American tariffs were not high, averaging 9.9 and 3.3 percent respectively on agricultural items. However, for both countries nontariff trade barriers, such as quotas and licenses, tended to be more restrictive.

Both countries saw agricultural export potential across the border. But Canada was frustrated by U.S. dumping and countervailing duty laws, as well as non-tariff barriers. Canada was looking for a more secure access to U.S. markets based upon clear rules supported by a binding dispute-resolution procedure. The United States wanted improved access to the Canadian market and the elimination of freight subsidies to prairie grain.

CFTA/NAFTA: The Agricultural Component

In the final agreement, both countries agreed to reduce agricultural trade barriers and to follow a specified procedure for resolving disputes. For agriculture, however, the CFTA was not in fact a "free trade" agreement. The most protected domestic industries in both countries continued to be protected from import competition.

The agricultural provisions of the CFTA are listed in table 1. Key provisions are:

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3For more on the background to the CFTA, see (6).

4These are abstracted from (6, pages 42-43).
* Eliminate nearly all tariffs within 10 years (by 1/1/1998)
* Temporary tariff protection for fresh fruits and vegetables for up to 20 years
* Remove Canada’s rail transportation subsidy.
* Open U.S. market to imports of certain Canadian products containing sugar
* Eliminate Canadian import licenses for U.S. grain and their products when the level of support provided by U.S. programs declined to the level in Canada. But either country could impose import restrictions if grain imports increased due to changes in grain policies in the exporting country.
* Exempt each country from the meat import restrictions of the other.
* Neither country to apply direct subsidies to exports to the other.
* Procedures specified for settling disputes and reviewing trade barriers.

When NAFTA became law on January 1, 1994 it incorporated all the agricultural components of the CFTA. Major non-tariff barriers to agricultural trade remained in place with no timetable for a phasedown or phaseout.

**Dispute Settlement**

The dispute settlement process of NAFTA is being used at the present time to resolve an American challenge of Canadian tariffs. In response to the Uruguay Round agreement, Canada removed non-tariff trade barriers and replaced them with new tariffs on margarine and on dairy, poultry, and barley products. Some tariffs exceeded 200 percent. The United States claimed that NAFTA did not allow new tariffs. Canada claimed that in this case, the Uruguay
Round commitments superseded NAFTA. A NAFTA panel was established to resolve the issue. A final report is due to be released in November, 1996.

The United States also established new tariffs on imports of dairy and other products but according to a USDA official "U.S. products under the tariff-rate quota face the lower NAFTA tariff, which will be phased out by 1998" (7). If the NAFTA phase-out of tariffs applied also to Canada, then the U.S. would benefit from tariffication of the Canadian poultry and dairy quotas.

CFTA/NAFTA: Part of a Larger Policy Transformation

It is difficult to identify the unique contribution of the CFTA/NAFTA to the agricultural sectors of the two countries. The trade agreement is just one part--a major part--of a larger policy transformation that is taking place. Let's look at the larger picture.

Canadian and American agricultural markets have much in common. Technology and the costs of labor and capital are similar in both countries. The feed and livestock sectors are very important to both. The marketing infrastructure is comparable. Consumers in both countries have similar incomes and food preferences. As a consequence, Canadian and American farmers mostly produce similar products at roughly the same cost. And Canadian and American consumers have similar food purchasing patterns.

But the two agricultural sectors have a history of politically going their own way. Each
country has protected and subsidized major parts of its own agricultural industry. Protection and subsidies reached new heights in the mid-1980s. Geography, similarities in comparative advantage, and trade barriers between the two countries caused agricultural products to move mostly east-west. Cross-border trade also was discouraged because of (a) transportation systems built only to serve within-country needs and (b) a Canadian subsidy on east-west movement of grain. Despite these conditions, substantial agricultural trade moved between the United States and Canada.

Major changes are taking place in agricultural policy and politics in the two countries. The CFTA/NAFTA is reducing the barriers to moving agricultural products north and south across the border. The subsidy on transportation of Canadian prairie grains and other crops under the Western Grain Transportation Act, was eliminated on August 1, 1995. In addition, both countries are unilaterally reducing domestic constraints and subsidies to agricultural production.

**Impact of the CFTA/NAFTA**

**More Trade**

In response to changes in policies and economic conditions, agricultural trade between Canada and the United States is rapidly increasing. Between 1989 and 1995, 2-way U.S.-Canadian agricultural trade increased 120 percent, whereas over the previous 6 years, it increased only 39 percent. By comparison, combined U.S. agricultural imports and exports to all countries increased only 39 percent between 1989 and 1995, and 12 percent the previous 6
years (USDA data).

Figures 1-9 show U.S.-Canadian agricultural trade from a U.S. perspective. They show how bilateral trade has progressed during seven years since the beginning of the CFTA (i.e., to the right of the vertical bar in each figure) relative to the seven previous years. They show:

* During the CFTA years, the share of the American agricultural exports going to Canada has sharply increased (figures 1 and 2). During the first five years of the CFTA, the Canadian market was the major source of U.S. export growth. Prior to the CFTA, the Canadian share of a volatile U.S. export market was surprisingly stable.

* The Canadian share of U.S. agricultural imports started increasing 2 years prior to the CFTA, and has since continued to increase (figures 3 and 4). The dip in 1995 was due to an unusually large increase in the value of U.S. imports from other countries rather than to falling imports from Canada.

* Vegetables and vegetable products have been the main source of growth in U.S. exports to Canada during the CFTA (figures 5 and 6). Notable increases also occurred with fruits and their products, "other meat" (excludes poultry), and poultry.

* Expansion of U.S. imports of grains, feeds, and related products accounts for much of the growth in total imports from Canada since the CFTA began (figures 7 and 8). Expansion also occurred--before and after the CFTA--in meat products, oilseeds and products, and "fruits, nuts, vegetables and their products."

The data source for these figures is (1).
Averaged over the 14 years of data shown in figure 9, the value of U.S. agricultural imports from Canada has about equaled the value of exports to Canada.

More Trade of Manufactured Food Products

The CFTA/NAFTA appears to have encouraged a large expansion of bilateral trade in manufactured food products (excludes bulk commodities and raw materials). Prior to the CFTA, bilateral trade was limited by high tariffs and uncertainty. From the inception of CFTA in 1989 to 1994, Canadian exports of manufactured food products to the United States increased 125 percent. Exports to other destinations rose only 24 percent. During the same period Canadian imports from the United States expanded 58 percent and from other countries expanded 37 percent (9, page 10).

The Canadian manufactured food sector is making structural changes as a result of CFTA/NAFTA. Before CFTA, this sector mainly consisted of small scale plants producing for the domestic market. CFTA/NAFTA is providing more export opportunities and import competition. Some firms are now producing specialized and brand-name products for the U.S. market in larger, more efficient plants. Other plants are being forced to shut down by competition from across the border. The net result, however, is a more efficient sector that is finding that it can compete in the U.S. market (4,9).

Revealed Comparative Advantage

Data in table 2 on agricultural trade reveal where comparative advantage lies at the 1995 stage
of liberalization of Canadian and U.S. agricultural markets (table 2). The United States has a comparative advantage primarily in fruits and vegetables and their products. America exports to Canada of products in this category exceed by four times its imports from Canada. Canada has a comparative advantage in export of live animals. The value of Canadian exports to the United States of live animals exceeds U.S. exports to Canada by a factor of ten.

These data conceal many significant one-way trade flows of very specific products opposite the general category flow. For example, some meat products exported by the United States are quite different from those exported by Canada. Within the "oilseeds and products" category, soybeans go north and canola goes south.

Despite the above difference, the similarity of agricultural trade in both directions is revealing (table 2). For several categories, the value of trade is approximately the same for U.S. agricultural products going north as for Canadian products going south. This is additional evidence of the similarity of agricultural supply and demand on both sides of the border.

**Did the CFTA/NAFTA Cause the Increased Trade?**

A number of factors other than the CFTA/NAFTA could have influenced bilateral agricultural trade since 1988. One likely candidate is the exchange rate. We observed that at the beginning of the agreement period the Canadian dollar was strong relative to the U.S. dollar. In recent years it has weakened (figure 10). The drop in the value of the C$ would be expected to make Canadian goods more competitive in U.S. markets and make U.S. goods less competitive in Canadian markets.
We attempted to separate the impacts on bilateral agricultural trade of (a) the agreement and (b) changes in the exchange rate. We examined separately U.S. agricultural exports to Canada, and Canadian exports to the United States over the 27-year period 1982-1995—twenty years prior to the agreement and 7 years under the agreement. For this simple econometric analysis we assumed that three variables would capture most of the forces shaping bilateral trade since 1969; the CFTA/NAFTA, the real exchange rate, and a linear trend. The latter was assumed to be a proxy for all variables associated with general growth in economic activity in both countries. The details are in table 3.

This simple model accounts for much of the variation in bilateral agricultural trade, with the exchange rate and the agreement playing important roles. The real exchange rate is associated with much of Canada's year-to-year movements in exports to the U.S. since 1969, but it is not a significant factor for U.S. exports to Canada. Results indicate that a 1 percent decrease in the real exchange rate increases Canadian agricultural exports to the United States by slightly more than 1 percent. The fall in the value of the Canadian dollar between 1991 and 1995 is estimated to have increased Canadian agricultural exports to the U.S. by $600 million per year by 1995.

Apparently a large part of U.S. export goods, especially vegetables and vegetable products, are not sensitive to moderate changes in the exchange rate. Possibly the Canadian demand for

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6 The coefficient on the real exchange rate in the U.S. export equation was not statistically significant and it had the wrong sign.
these products from the United States is quite price-inelastic. If so, a change in the exchange rate would not have much impact on demand for U.S. goods. The U.S. demand for agricultural imports from Canada, however, seems to be quite price-elastic.

The CFTA/NAFTA is estimated to be a major factor influencing agricultural trade in both directions. Annual agricultural trade going north, due to the agreement, is estimated to be up $2.7 billion since 1989; trade going south, up $1.6 billion. The larger estimate for United States exports is not surprising since Canada removed larger barriers to agricultural trade than did the United States.

The estimated impact of the linear trend variable suggests that other forces were associated with steady growth in bilateral trade throughout the 27-year period. The estimated coefficients for this variable suggest that once the effects of exchange rates and the CFTA/NAFTA are removed, Canadian exports to the U.S. still grew each year almost twice as fast as U.S. exports to Canada.

Our analysis suggests that the CFTA/NAFTA had a significant impact on Canadian agricultural exports to the U.S. However, the importance of the agreement to Canadian exports is quite sensitive to specification of the model. More sophisticated analysis is called for to estimate the unique impacts of exchange rates and the agreement on bilateral agricultural trade. A clear understanding of each impact is needed for accurate policy prescriptions.
Increased Integration of American and Canadian Agriculture: Conclusions and Implications

Economists recognize short-run adjustment costs and long-run benefits as firms and industries adjust to a more liberalized environment of freer trade and fewer domestic distortions. As trade barriers come down, farms, firms, and industries on both sides of the U.S.-Canadian border are being forced to adjust to new opportunities and new competition. Canadian agriculture, due to its smaller size and higher protection, is facing larger adjustments.

After liberalization, the economic costs are expected to fall and the benefits rise over time. With fewer losers and more gainers, the political base is expected to grow for more liberalization and the associated economic integration with trading partners. This process has been going on within the European Union for some time. It appears to be under way between the United States and Canada. The trade data discussed above suggest that this process of integration is taking place between the U.S. and Canadian agricultural sectors. What are the implications? Here are several to watch.

More North-South Marketing Infrastructure

Increased U.S.-Canadian agricultural trade is creating a demand for better infrastructure for moving goods north and south. As these facilities are built and upgraded, the cost of north-south trade will fall and the volume will continue to grow. Expect rerouting of traditional marketing flows of some goods within both countries.
Pressure to Expand Reforms

Substantial protection still remains in U.S. and Canadian agriculture. Canada's dairy and poultry industries, and U.S. sugar, tobacco, and peanut industries remain highly protected. As the other parts of agriculture in the two countries become less dependent on protection, pressures will likely grow for reform of these remaining industries.

An end to border barriers diminishes policy options for income protection to agriculture in the future. Freer trade is inconsistent with, and eventually tends to remove, domestic commodity programs. Free trade tends to be consistent with policy instruments that distort least, such as direct payments. But these are difficult to maintain in the face of pressure to restrain government outlays.

More Vulnerable to Changes in Exchange Rates

Our analysis shows that much of the recent year-to-year fluctuations in bilateral agricultural trade can be attributed to changes in the value of the Canadian dollar relative to the U.S. dollar. High trade barriers--especially non-tariff barriers--buffer the agricultural sectors on both sides of the border from exchange rate shocks. Now that the barriers are reduced, there is less protection from exchange rate risk. For example, a 25 percent decline in the real value of the Canadian dollar, as occurred between 1991 and 1995, would roughly translate into a 25 percent drop in the price of Canadian goods exported to the U.S. market--a major improvement in their competitiveness. On the other hand, U.S. goods exported to Canada could cost 25 percent more in Canada.
Canadian agriculture is a larger part of the national economy and depends more on trade than does the American economy. Consequently, volatile exchange rates have a larger impact on Canadian agriculture. Some firms in trade-sensitive sectors of U.S. agriculture also are affected. Producers on either side of the border want protection when they face a surge of imports. Trade disputes could intensify.

The exchange rate could emerge as an especially troublesome risk factor with the decline of trade barriers. With an unpredictable shift in the exchange rate, enterprises with a comparative advantage and making a profit on exports unexpectedly can find themselves taking losses on exports even though technology, factor endowments, and management remain unchanged. This type of instability adds economic trauma and reduces the benefits to both countries from freer trade. Eliminating exchange rate risk deserves high priority in Canadian-United States trade relations.

Similar pressures have pushed the European Union toward monetary union. Because of greater similarities in cultural and other characteristics between the U.S. and Canada than among many countries of Western Europe, a Canadian-U.S. monetary union would seem to be as feasible economically as an EU monetary union.

References


5. International Monetary Fund, (complete citation on data sets)


## Table I. Provisions of CFTA Affecting Agriculture

<table>
<thead>
<tr>
<th>Item</th>
<th>Action specified in CFTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical regulations</td>
<td>Committed to harmonize</td>
</tr>
<tr>
<td>Dispute settlement</td>
<td>Defined procedures, using binational panels, for resolving disputes</td>
</tr>
</tbody>
</table>
| Tariff reductions                 | * Cannot increase duties on products that were duty-free prior to 1/1/89  
                                       * Category A products: Immediate duty removal (1/1/89)  
                                       * Category B products: Duty eliminated in 5 equal annual stages (duty free on 1/1/93)  
                                       * Category C products: Duty eliminated in 10 equal annual stages (duty-free on 1/1/98)  |
| Export subsidies                  | Prohibited on U.S.-Canada trade                                                                                                                        |
| Canada's transportation subsidy   | Canada's Western Grain Transportation Act subsidy removed on grain and oilseed exports shipped to the U.S. through Canadian west coast ports (removed August 1, 1995) |
| Meat import laws                  | Each country exempts the other from its meat import laws                                                                                               |
| Wheat                             | Canada removed import license in 1991                                                                                                                  |
| Barley                            | Canada will remove import license when U.S. support level is less than or equal to Canada's                                                        |
| Oats                              | Canada removed import license in 1989                                                                                                                    |
| Chicken                           | Canada increased global import quotas from 6.3% to 7.5% of previous year's production                                                                  |
| Turkey                            | Canada increased global import quota from 2.0% to 3.5% of previous year's production                                                                  |
| Shell eggs                        | Canada increased global import quota from 0.68% to 1.65% of previous year's production                                                                  |
| Sugar-containing products         | U.S. agreed not to restrict any Canadian product containing 10% or less sugar, dry weight                                                             |
| Fruits and vegetables             | Special "snapback" provisions to protect domestic market from sharp short-run drops in import prices                                                  |
| Wine                              | Canada agreed to liberalize wine listing, pricing, and distribution practices in order to afford improved access for U.S. wines.                          |

Source: (2)
Table 2. Agricultural Trade Between Canada and the United States, 1995

<table>
<thead>
<tr>
<th>Category</th>
<th>U.S. exports to Canada</th>
<th>Canadian exports to United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>(million U.S. dollars)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live animals</td>
<td>98</td>
<td>1035</td>
</tr>
<tr>
<td>Animal products</td>
<td>936</td>
<td>1090</td>
</tr>
<tr>
<td>Grains and products</td>
<td>977</td>
<td>1292</td>
</tr>
<tr>
<td>Fruit &amp; juices, vegetables</td>
<td>2219</td>
<td>536</td>
</tr>
<tr>
<td>Oilseeds and products</td>
<td>357</td>
<td>613</td>
</tr>
<tr>
<td>Sugar and related products</td>
<td>166</td>
<td>178</td>
</tr>
<tr>
<td>Nursery products</td>
<td>108</td>
<td>124</td>
</tr>
<tr>
<td>Other beverages</td>
<td>479</td>
<td>529</td>
</tr>
<tr>
<td>Other</td>
<td>398</td>
<td>162</td>
</tr>
<tr>
<td>Total</td>
<td>5738</td>
<td>5559</td>
</tr>
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</table>

Source: (3).
Table 3. Results of Regression Analysis

<table>
<thead>
<tr>
<th>Equation characteristics</th>
<th>U.S. ag. exports to Canada</th>
<th>Canadian ag. exports to U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of observations</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Real exchange rate:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coefficient</td>
<td>1552</td>
<td>2660</td>
</tr>
<tr>
<td>T value</td>
<td>1.73</td>
<td>3.45</td>
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<tr>
<td>Dummy for CFTA/NAFTA:</td>
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<td></td>
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<tr>
<td>Coefficient</td>
<td>2486</td>
<td>491</td>
</tr>
<tr>
<td>T value</td>
<td>7.46</td>
<td>1.72</td>
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<tr>
<td>Linear Trend:</td>
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<td></td>
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<tr>
<td>Coefficient</td>
<td>103</td>
<td>266</td>
</tr>
<tr>
<td>T value</td>
<td>2.53</td>
<td>7.65</td>
</tr>
<tr>
<td>R squared</td>
<td>0.97</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Form of equation: Simple linear regression.

Units:
- Exports and imports: million US dollars.
- Real exchange rate: Canadian dollars per US dollar.
  - Values range from 1.14 to 1.39.
- Dummy: 0 for years without CFTA/NAFTA, 1 for years with CFTA/NAFTA.
  - Note that 1989 = 0, i.e., a one-year lag in CFTA/NAFTA's impact was assumed.

Sources: Exports, (1); real exchange rates, (5).