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US Agricultural Trade with Western Hemisphere Countries and the Effect of the Free Trade Area of the Americas

Jeremy W. Mattson *and* **Won W. Koo**[1]

Abstract

Negotiations to create the largest single market in the world, the Free Trade Area of the Americas (FTAA), are in progress. Such an agreement could have significant effects on US agriculture; it could create an opportunity to increase US exports of agricultural commodities and products, and could also lead to an increase in imports. The objective of this study is to analyze US agricultural trade with Western Hemisphere countries and to determine the effects of hemisphere-wide trade liberalization. The Western Hemisphere contains important sources for US agricultural imports and important markets for US agricultural exports, though the hemisphere has been more important as a source for imports than as a market for exports.

Results suggest that US agricultural exports within the hemisphere are positively influenced by real GDP in the importing country and negatively influenced by the strength of the US dollar and tariffs in importing countries. US agricultural imports are positively affected by the strength of the US dollar and negatively affected by US tariffs. A reduction in tariffs under the FTAA would have a greater effect on US agricultural exports than it would on US agricultural imports because tariffs are generally larger in other countries estimated elasticities show that US agricultural exports are more sensitive than agricultural imports to tariffs. Projections for US agricultural trade in 2010 show that exports to Latin American countries would be 15% higher under a scenario where tariffs are gradually reduced and 32% higher if tariffs are eliminated. Imports would be 2.4% higher under the scenario where tariffs are gradually reduced and 5.2 higher if tariffs are eliminated.

Key words: free trade area of the Americas; trade liberalization; western hemisphere; agricultural trade.

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INTRODUCTION

Negotiations to create the largest single market in the world, the Free Trade Area of the Americas (FTAA), are in progress. While the United States has free trade agreements with Canada and Mexico, the goal of the FTAA is to progressively eliminate trade and investment barriers within the Western Hemisphere. Negotiations for the FTAA involve 34 nations from the Western Hemisphere. Such an agreement could have significant effects on US agriculture; it could create an opportunity to increase US exports of agricultural commodities and products. It could also increase US imports of agricultural commodities produced in other Western Hemisphere countries.

Agricultural trade with Canada and Mexico has increased significantly since free trade agreements have been signed with those countries, while trade with other Western Hemisphere countries has increased at slower rates or remained flat. Canada and Mexico are the United States' two major trading partners in the Western Hemisphere, but the United States also imports a significant amount of agricultural products from South America. The United States, in fact, has an agricultural trade deficit with South America that has averaged $2.5 billion annually during the 1989-2000 period. The United States also has an agricultural trade deficit with Central America and a growing trade deficit with Canada, but has agricultural trade surpluses with Mexico and the Caribbean. Figure 1 shows US agricultural imports from Western Hemisphere countries/regions from 1989-2000, in dollar terms, and Figure 2 shows US agricultural exports

The types of products imported from Latin America are mostly horticultural products or tropical products such as coffee, while exports to Latin America largely consist of grains and feeds and oilseeds. The FTAA could increase the existing trade flows of agricultural commodities and products. The United States exports of grain, feed, oilseeds, and meats could increase, while the United States could import more horticultural products, sugar, and tropical products. One concern is the impact of the FTAA on the US sugar industry. Latin American is a major sugar producing region. The FTAA could substantially increase US sugar imports from these countries.

The general objective of this study is to analyze US agricultural trade with Western Hemisphere countries and to determine the effects of hemisphere-wide trade liberalization. Specific objectives are to (1) examine factors influencing US agricultural trade with these countries, and (2) determine the effect of tariff removals on agricultural trade with these countries.

The USDA's Economic Research Service (ERS) analyzed the effects of an FTAA on US agriculture using a computable general equilibrium model (ERS, November 1998). They found that an FTAA that includes the United States would cause annual US farm income (in 1992 dollars) to increase $180 million, and an FTAA that excludes the US would cause annual US farm income to be $50 million lower. These projected changes to farm income are relatively small. They found that an FTAA including the United States would increase annual US agricultural

exports by $580 million (1%) and imports by $830 million (3%). A FTAA excluding the United States was found to decrease annual agricultural exports by $130 million (0.2%) and decrease imports by $90 million (0.3%). Their results suggest that the potential economic effects of the FTAA, with or without US participation, would be relatively small in the short-run. Although ERS estimated that the FTAA with US membership would increase imports more than exports, they estimated that US farm income under this scenario would increase.

Diao et al. (1998) estimated the effects of an FTAA on US agricultural trade. Their results suggest that US exports would increase more than US imports under this agreement, and that US exports and imports would both increase even if the United States was not involved in the agreement. They found that US exports and imports would increase by 7.9% and 6.5%, respectively, under an FTAA that included that the United States, and US exports and imports would increase by 6% and 3.2%, respectively, under an FTAA that excluded the United States. Diao et al. found that the growth in US agricultural trade would be greater than the growth in overall US trade and that the effect of an FTAA on trade flows would be greater than the effect on economy-wide factors such as GDP and total consumption. They found that US GDP, total consumption, and farm income would increase modestly under an FTAA.

Results from ERS and Diao et al. seem to suggest that an FTAA would have positive but modest effects on US agriculture overall. Diao et al. remarked, however, that the gains in US agricultural exports and farm income in the short- and medium-run may disappear in the long-run due to increased competitiveness from developing Western Hemisphere countries that could compete with the US in third country export markets. These countries may become competitors for US agricultural products once they catch up with the United States' advanced technology.

Review and Progress of the Free Trade Area of the Americas

Negotiations are in progress for the FTAA.During the 1994 Summit of Americas, which was held in Miami in December, the heads of state of the 34 democratic countries in the Western Hemisphere agreed to construct an FTAA and complete negotiations by 2005. Since the initial Summit of the Americas in 1994, negotiations for the FTAA have continued at six trade ministerial meetings, held from June 1995 to April 2001, at the second Summit of the Americas, held at Santiago in April 1998, and at the third Summit of Americas, held at Quebec City in April 2001. During the 1998 Santiago Summit of the Americas, nine negotiating groups were established: market access (which includes non-agricultural tariffs and non-tariff barriers, rules of origin, customs procedures, standards, and safeguards); agriculture (which includes agricultural tariffs and non-tariff barriers, agricultural subsidies and other trade-distorting practices, and sanitary and phytosanitary procedures); services; investment; government procurement; intellectual property; subsidies, antidumping, and countervailing duties; competition policy; and dispute settlement. At the sixth

ministerial meeting and the third Summit of Americas, deadlines were fixed for the conclusion and implementation of the agreement. Negotiations are to be concluded no later than January 2005, and the agreement is to be implemented no later than December 2005.

The agreement would eliminate tariffs and create common trade and investment rules among the Western Hemisphere countries. The Economic Research Service remarks that the "US interest in forming an FTAA stems in part from the broad goal of fostering economic and political security in the hemisphere and also from the desire to secure more open and transparent rules for US trade and investment in the rapidly growing markets of Latin America" (ERS, p.11, April 1998).

The FTAA could have significant effects on agricultural trade since the Western Hemisphere includes key markets for US agricultural products and major suppliers of US agricultural imports. The FTAA may be beneficial for US agriculture because it will expand market opportunities by progressively eliminating tariffs and non-tariff barriers. US agriculture could gain from tariff removal because agricultural tariffs are higher in other Western Hemisphere countries compared to the United States' tariffs. The Unites States imports a large quantity of products, such as coffee and bananas, with no tariffs on these commodities. Once tariffs are eliminated or reduced, it is expected that products that previously faced higher import barriers would experience faster trade growth. Such a theory would suggest that US agricultural exports would grow faster than imports due to current differences in US and foreign import barriers. Furthermore, tariffs on agricultural products in the Western Hemisphere tend to be higher than tariffs on other products, which would suggest that the FTAA may lead to more substantial increases in US agricultural trade than in other sectors.

The FTAA will consolidate the numerous free trade agreements currently existing in the Western Hemisphere. There are about thirty different regional trade agreements of different types in the Western Hemisphere. These agreements can put non-participating countries at a competitive disadvantage. For example, the MERCOSUR trade agreement includes Argentina, Brazil, Paraguay, and Uruguay. Because of this agreement, US exporters face tariff differentials in the MERCOSUR market that favor member suppliers. The FTAA will help US exporters that are currently outsiders in many of the free trade areas (ERS, 2000).

Free trade agreements can affect trade in three ways: trade creation, trade diversion, and income effects. Trade creation occurs when trade flows increase due to the elimination or reduction of tariffs or other trade barriers. When trade creation occurs, resources are reallocated toward more efficient uses, which increases returns on investment and improves the overall economic well-being of the member countries (ERS, April 1998). Trade diversion occurs if imports from one country increase at the expense of imports from a country outside of the free trade agreement. For example, a free trade agreement with Canada may increase imports from Canada, but overall trade may not change if imports

from Canada are simply replacing imports from other countries. Trade diversion leads to less efficient allocation of resources in the global economy, and directly harms other countries outside the agreement (ERS, April 1998). A key finding by Burfisher and Jones (1998) is that regional trade agreements have both trade-creating and trade-diverting effects in agriculture, but trade creation dominates in most regional trade agreements.

If tariffs are removed, the snapshot effects on trade can be analyzed by looking at the trade creation and diversion effects. There are also dynamic effects such as the income effect. Free trade agreements generally lead to increased income in the member countries, this increase in income positively affects imports. The FTAA would likely increase income throughout the Western Hemisphere. Trade liberalization can boost economic growth by stimulating investment and reallocating capital and other resources toward more productive uses (ERS, November 1998). In the long-run, the FTAA would stimulate the growth and efficiency of members' factors of production (ERS, November 1998). The increased economic well-being of trade partners would result in an increase in demand for US agricultural products and a further increase in US exports. Table 1 shows economic information for the 34 countries involved in the FTAA negotiations.

Model and Estimation Procedures

An econometric model is developed to estimate the effects of macroeconomic factors on the flow of agricultural trade with Western Hemisphere countries. Two models are developed: one for US agricultural exports to Western Hemisphere countries, and one for US agricultural imports. Panel data are used in the analysis. Twelve years of annual data (1989-2000) and ten countries are used in each model. The top ten Western Hemisphere countries that imported US agricultural products during the 1989-2000 period were Canada, Mexico, Venezuela, the Dominican Republic, Colombia, Brazil, Peru, Guatemala, El Salvador, and Jamaica. Tariff data for the Dominican Republic, Peru, and Jamaica are not available so they could not be used in the model. The other seven countries are used in the export model; and Costa Rica, Panama, and Argentina are added. The export model of aggregate agricultural goods to the countries is specified as

$$X_{it} = f(RGDP_{it}, RER_{it}, TAR_{it}, D)$$

Where X_{it} = US exports of agricultural products to country i in time t

$RGDP_{it}$ = Real GDP in importing country i in time t

RER_{it} = Real exchange rate between the United States and importing country i in time t

TAR_{it} = Import tariffs on agricultural products in country i in time t

D = Dummy variables for countries and NAFTA.

This model is also interpreted as an aggregate import demand model fro agricultural goods from the Western Hemisphere countries. The top ten Western Hemisphere countries that exported agricultural products to the United States

during this period were Canada, Mexico, Brazil, Colombia, Chile, Costa Rica, Guatemala, Argentina, Ecuador, and the Dominican Republic. These ten countries are used in the import model. The import model of aggregate agricultural goods from the countries is specified as

$$M_{it} = f(USRGDP_{it}, RER_{it}, USTAR_{it}, TR_t, D)$$

where

M_{it} = US imports of agricultural products from country i in time t

$USRGDP_{it}$ = Real GDP in importing the US in time t

RER_{it} = Real exchange rate between the US and exporting country I in time t

$USTAR_{it}$ = US import tariffs on agricultural products in time t

TR_t = Trend variable

D = Dummy variables for countries.

It is expected that an increase in income in the importing country will result in an increase in that country's imports of agricultural products. An increase in real GDP should increase imports, depending on how sensitive the consumption of those products are to changes in income. It is hypothesized that income changes in Western Hemisphere countries will have a greater impact on US agricultural exports to those countries than would changes in US income on US agricultural imports because US food consumption should not be as sensitive to changes in income.

Economic theory predicts that US imports will increase when the US dollar strengthens relative to the currency of the exporting country, and vice versa. Further, US exports should decrease when the US dollar strengthens relative to the currency of the importing country, and vice versa. As the US dollar gains strength, US exports become more expensive in the foreign market, and foreign goods become less expensive in the US market. Thus, it is expected that US exports have a negative relation with the US dollar value and positive relation with it.

Tariffs are a barrier to trade; it is expected that the existence of tariffs will have a negative effect on trade flows. Agricultural tariffs between the United States and Canada were gradually reduced under the Canada - US Free Trade Agreement (CUSTA) starting in 1989, and have now been eliminated. Agricultural tariffs between the United States and Mexico are being gradually reduced under NAFTA, which started in 1994, and should be eliminated by the end of this decade. Agricultural tariffs between the United States and other Western Hemisphere countries still exist, creating a trade barrier. Reduction of these tariffs under the FTAA should result in an increase in trade flows. It is expected that tariffs may have a greater effect on US exports than on imports for two reasons: agricultural tariffs are generally greater in other countries than they are in the United States (some products that the US does not produce and imports from Latin American countries such as coffee and bananas have no tariffs), and US food consumption is not likely to be as price sensitive as consumption in other countries.

Nine dummy variables for the ten countries are included in the model to determine if there are regional differences in export or import behavior. The dummy

variable for Brazil is not included to avoid a multi-collinearity problem. A dummy variable for NAFTA is included in the export model, and a trend variable is included in the import model.

Estimation Procedure

The models use panel data with twelve time series observations and ten cross sections, resulting in 120 observations. A pooling technique, the process of combining cross-section and time series data, is used in the analysis. The Parks method (Parks, 1967), which assumes a first-order autoregressive error structure with contemporaneous correlation between cross sections, is used. The covariance matrix is estimated by a two-stage procedure leading to the estimation of model regression parameters by generalized least squares (GLS).

Data

Annual data from 1989 to 2000 for ten countries are used in each model. US agricultural exports and imports to and from each country were obtained from the Foreign Agricultural Trade of the United States (FATUS) data set on the USDA's Economic Research Service (ERS) website. These data are originally from the Census Bureau of the US Department of Commerce. The data are measured in US dollars and are converted into real dollars for the analysis using the Consumer Price Index. The dependent variable in these models, therefore, is measured as the value of exports or imports rather than the quantity. Since the dependent variable is the exports or imports of all agricultural products, a quantity measure is difficult to obtain and would not be very meaningful.

Real exchange rate data between the US dollar and each foreign currency were obtained from the ERS. These data are measured as the foreign currency per US dollar, which means that an increase indicates appreciation of the US dollar, and a decrease means depreciation. The exchange rates were converted to an index. It is necessary to convert the exchange rates to an index because in the panel data, the exchange rate variable includes exchange rates for ten different countries with different units of measure; and this variable needs a consistent unit of measure to be meaningful. The exchange rates are indexed by dividing the exchange rate in each year by the average exchange rate over the 1989-2000 period and then multiplying it by 100, so 100 equals the average exchange rate between the US and that country, and values above or below 100 indicate the exchange rate is above or below the average.

Real GDP data for each country were obtained from the International Monetary Fund's World Economic Outlook Database. These data are converted to US dollars to maintain a common unit of measure.

Tariff data were obtained from the Agricultural Market Access Database (AMAD). AMAD is a cooperative effort among Agriculture and Agri-Food Canada, EU Commission - Agriculture Directorate-General, Food and Agriculture Organization of the United Nations, Organization for Economic Co-operation and Development, The World Bank, United Nations Conference on Trade and Development, and the United

States Department of Agriculture - Economic Research Service.

One of the limitations of this study is the tariff data: data are not available for every year, and some of the data used in the study are estimates. The AMAD database lists tariffs by HS code for each country used in the study for selected years from 1995-1999. It is assumed in this study that tariffs prior 1995 are the same as they were in 1995, and data for missing years are the average of surrounding years. These assumptions are reasonable because the data indicate that there has been little change in tariff levels. The database includes tariffs for agricultural goods classified at the HS 8-digit level. There is no aggregate tariff level for all agricultural goods, so one had to be calculated. A trade-weighted tariff level for each country is calculated by determining the average tariff level of the major agricultural products imported or exported by the United States, with weights given to each product based on how much that product is traded. Tariffs with Canada were gradually eliminated under CUSTA, and tariffs with Mexico have been gradually falling under NAFTA.

RESULTS

The estimated models are presented in Table 2. The R^2s are 0.98 for the export model and 0.82 for the import model, indicating that the models are a good fit. Every variable is significant at the 10% level except for real GDP in the import model, and all variables are significant at the 1% level in the export model. Real GDP in Western Hemisphere countries has a positive and significant effect on US agricultural exports to those countries, but US real GDP does not significantly affect the level of US imports. This result could be explained by the fact that US income is much higher than income levels in the other Western Hemisphere countries, and consequently, US imports of the goods are not as sensitive to income.

The exchange rate variable is negative in the export equation and positive in the import equation. This result supports the theory that US dollar appreciation has a negative effect on exports and a positive effect on imports. The results also show that tariffs have a negative effect on agricultural trade flows.

The trend variable in the import model indicates that imports have been trending upward after accounting for GDP, exchange rates, and tariffs. The NAFTA dummy variable in the export model is positive and significant, indicating that exports to Canada and Mexico have increased under NAFTA even after accounting for the reduction in tariffs. The dummy variables for the countries are all highly significant, indicating that there is strong regional differentiation in export and import behavior. Holding all other variables constant, US agricultural trade with Canada is much greater than agricultural trade with the other countries, and agricultural trade with Mexico is greater than that with the other Latin American countries.

Elasticities are reported on the bottom of Table 2. The reported elasticities are the percent change in the value of imports or exports given a 1% change increase in real GDP, the real exchange rate, or tariffs. The elasticities indicate that a 1% increase in real

GDP in an importing country would result in a 0.276% increase in US agricultural exports to that country. The results show that US imports are more sensitive than exports to changes in exchange rates, which is somewhat surprising, This is mainly because US exports are mostly grains, feeds, and oilseeds, which are to some extent necessities, while US imports are fruits and vegetables, which are more sensitive to price changes.

The elasticities also show that US exports are more sensitive than imports to tariffs, which can be explained by the higher tariffs on US exports in Latin American countries compared to US tariffs on its imports. This result indicates that a reduction or elimination of agricultural tariffs in Western Hemisphere countries would have a greater effect on US exports than it would on US imports. The elasticities indicate that a 100% decrease in tariffs under an FTAA would increase agricultural exports by 12.1% and imports by 5.2%.

Effect of Tariff Removal on Trade Flows

The estimated model is used to forecast US agricultural exports and imports to and from select countries. The projections are made using forecasted GDP and exchange rates from FAPRI (2001). The purpose of the projections is to estimate the effect of tariff reduction or elimination. Projections are made for three significant importing and exporting countries for which forecasted GDP and exchange rate data are available; projections are made for exports to Venezuela, Colombia, and Brazil, and imports from Brazil, Colombia, and Argentina.

Trade flows are projected for three scenarios: tariffs remain the same, tariffs are gradually reduced, and tariffs are totally eliminated at one time. It is most likely that tariffs would be removed gradually, though the procedure that would be used for tariff reduction is not known. Under the tariff reduction scenario in this study, tariffs are reduced 10% each year starting in 2005. Under the tariff elimination scenario, tariffs remain the same until 2005 and are totally removed in 2005. Imports and exports are both projected to increase even if tariffs remain the same, but projections show that tariff reduction or elimination would have a greater effect on exports than it would on imports (Table 3). US agricultural imports from Brazil, Colombia, and Argentina are projected to increase by 58% during the 2000-2010 period if tariffs remain the same and by 62% and 66% if tariffs are reduced or eliminated, respectively. US agricultural exports to Brazil, Colombia, and Venezuela are projected to increase by 109% during the 2000-2010 period if tariffs remain the same and by 141% and 177% if tariffs are reduced or eliminated, respectively.

Compared to the 2010 projection under the scenario where tariffs remain the same, US agricultural imports from Brazil, Colombia, and Argentina in 2010 are projected to be 2.4% higher if tariffs are gradually reduced and 5.2 higher if tariffs are eliminated. The 2010 projection for US agricultural exports to Brazil, Colombia, and Venezuela is 15% higher if tariffs are gradually reduced and 32% higher if tariffs are eliminated when compared to the 2010 projection if tariffs do not change.

CONCLUSIONS

Results from the estimated models suggest that US agricultural exports within the hemisphere are positively influenced by real GDP in the importing country and negatively influenced by the strength of the US dollar and tariffs in importing countries. US agricultural imports are positively affected by the strength of the US dollar and negatively affected by US tariffs. Imports appear to be more sensitive to exchange rate changes than exports, and imports are not affected by changes in US real GDP. Results suggest that tariffs have a greater effect on US exports than they do on imports.

The estimated model is used to project agricultural trade with select Latin American countries. The projections indicate that reduction or elimination of tariffs on agricultural products would increase US exports more than US imports. The effect on exports is greater because tariffs are higher in other Latin American countries than they are in the United States, and the estimated elasticities are higher for exports than they are for imports. The increase in exports could likely include wheat, corn, soybeans, and possibly meat, which would benefit producers in the Northern Plains. The increase in imports would likely include sugar, which could be harmful for US sugar producers.

The export and import projections simply analyze the trade creation effect of removing tariffs. The increase in exports may be greater due to income effects. The projections assume an increase in real GDP, but the FTAA could have a positive effect on income in Latin America counties that causes real GDP to grow faster than currently projected. Such an effect would cause a greater increase in US exports.

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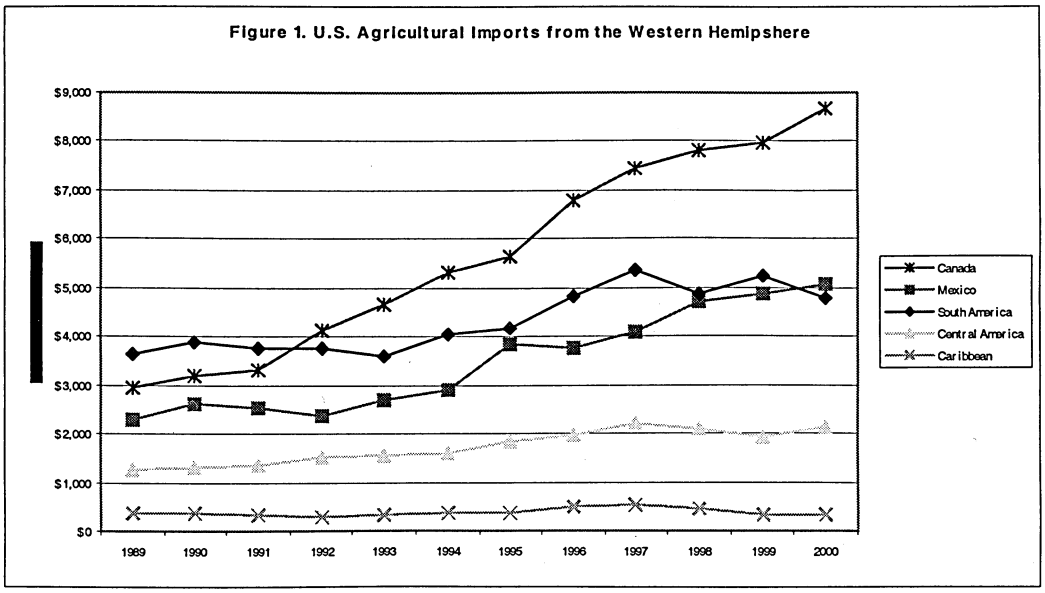
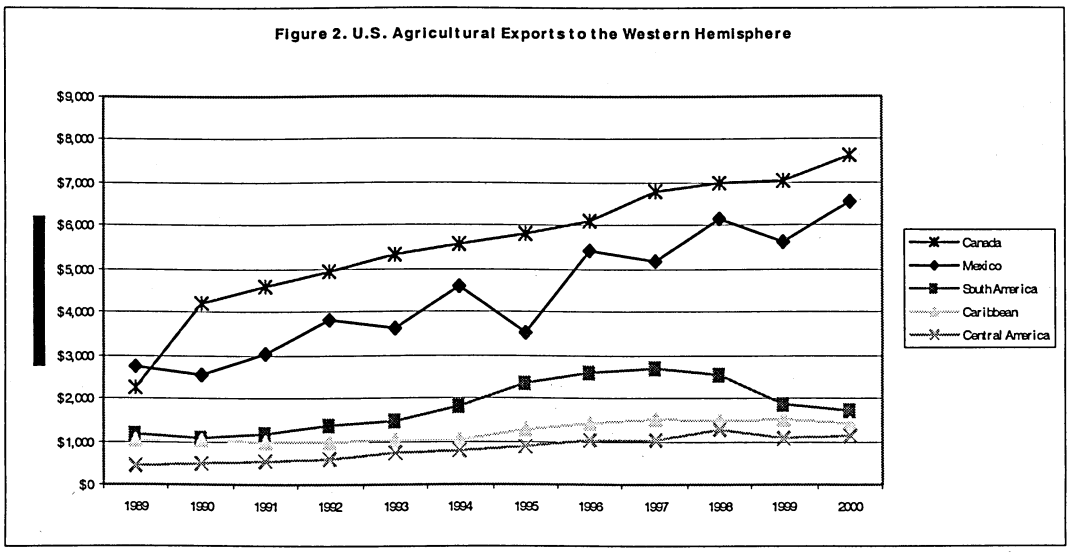


Source: Foreign Agricultural Trade of the United States, USDA.



Source: Foreign Agricultural Trade of the United States, USDA

Table 1. Economic Data for the FTAA Countries

	GDP (billion US$)			Per Capita GDP (US$)			Real GDP Growth (annual % change)		
	1998	1999	2000	1998	1999	2000	1998	1999	2000
Antigua/Barbuda	0.6	0.7	0.7	9,199	9,713	9,833	3.9	3.2	2.5
Argentina	298.9	283.3	285	8,365	7,827	7,778	3.8	-3.4	-0.5
Bahamas	4.2	4.5	4.9	14,025	15,217	16,399	3	5.9	5
Barbados	2.3	2.4	2.6	8,893	9,311	10,013	4.1	1.3	3.1
Belize	0.6	0.7	0.8	2,697	2,946	3,115	2.6	3.7	9.7
Bolivia	8.4	8.3	8.3	1,156	1,110	1,083	5.2	0.4	2.4
Brazil	787.5	529.7	593.7	4,623	3,042	3,362	0.2	0.5	4.4
Canada	617.4	656.4	711.1	20,396	21,514	23,108	3.9	5.1	4.4
Chile	73	67.6	70	5,059	4,623	4,728	3.9	-1.1	5.4
Colombia	98.8	79.5	76.1	2,583	2,041	1,920	0.6	-4.1	2.8
Costa Rica	14.1	15.7	16.3	3,986	4,365	4,257	8.4	8.4	1.7
Dominica	0.3	0.3	0.3	3,021	3,563	3,637	2.4	0.9	0.5
Dominican Rep.	16	17.4	19.8	1,976	2,110	2,321	7.3	8	7.8
Ecuador	19.7	13.6	13.6	1,581	1,068	1,048	0.4	-7.3	2.3
El Salvador	12.1	12.5	13.2	1,927	1,939	2,012	3.2	3.4	2
Grenada	0.3	0.4	0.4	3,581	3,970	2,587	7.3	7.5	6.4
Guatemala	19.4	18.3	18.6	1,696	1,557	1,540	5.1	3.5	3.3
Guyana	0.7	0.7	0.7	950	910	894	-1.7	3	-0.7
Haiti	3.7	4.1	3.9	501	547	510	2.2	2.7	0.9
Honduras	5.2	5.4	5.8	796	790	852	2.9	-1.9	5
Jamaica	7.2	7.9	8.6	2,887	3,162	3,393	-0.5	0	1.5
Mexico	420.9	479.9	574.5	4,237	4,718	5,693	5	3.7	6.9
Nicaragua	2.1	2.2	2.4	432	449	474	4.1	7.4	4.3
Panama	9.1	9.5	9.9	3,254	3,336	3,396	4	4.1	2.3
Paraguay	8.5	7.7	7.5	1,603	1,414	1,343	-0.4	0.5	-0.4
Peru	56.9	50.7	52.9	2,173	1,903	1,954	-0.5	0.9	3.1
St. Kitts/Nevis	0.3	0.3	0.3	6,664	7,072	7,623	1	3.7	7.5
St. Lucia	0.6	0.7	0.7	3,662	3,992	4,136	3.1	3.5	0.7
St. Vincent & the Grenadines	0.3	0.3	0.3	2,862	2,978	3,040	5.7	4.2	2.1
Suriname	0.8	0.6	0.6	1,887	1,452	1,434	1.9	5	2.9
Trinidad &Tobago	6.1	6.9	7.7	4,665	5,153	5,774	4.8	6.8	4.8
United States	8781.5	9268.6	9872.9	32,445	33,977	35,069	4.3	4.1	4.1
Uruguay	22.4	20.9	20	6,844	6,360	6,059	4.5	-2.8	-1.3
Venezuela	95.8	103.3	120.5	4,132	4,404	5,038	0.2	-6.1	3.2

Table 2. Estimated Models

	Exports	Imports
	estimated coeffiecients (p-values in parentheses)	
Intercept	-744,520,000 (0.0001)	859,564,000 (0.0018)
Real GDP	1,452,000 (0.0001)	4,000 (0.879)
Real exchange rate	-306,000 (0.0005)	3,083,000 (0.0001)
Tariffs	-13,515,000 (0.0001)	-7,878,000 (0.0432)
Trend		24,380,000 (0.0004)
D_{NAFTA}	1,083,910,000 (0.0001)	
D_{Canada}	4,177,349,000 (0.0001)	3,724,787,000 (0.001)
D_{Mexico}	3,588,495,000 (0.0001)	1,899,943,000 (0.0393)
$D_{Colombia}$	1,457,790,000 (0.0001)	-423,064,000 (0.0852)
D_{Chile}		-796,862,000 (0.0011)
$D_{Guatamala}$	1,043,884,000 (0.0001)	-700,640,000 (0.0042)
$D_{Venezuela}$	1,328,243,000 (0.0001)	
$D_{El\ Salvador}$	1,019,117,000 (0.0001)	
$D_{Dominican\ Republic}$		-821,396,000 (0.0005)
$D_{Ecuador}$		-1,245,781,000 (0.0001)
D_{Panama}	1,009,511,000 (0.0001)	
$D_{Costa\ Rica}$	999,461,000 (0.0001)	-796,017,000 (0.0011)

$D_{Argentina}$	667,578,000 (0.0001)	-866,845,000 (0.0007)
R^2	0.9832	0.8215
Elasticities		
Real GDP	0.276	0.024
Real exchange rate	-0.030	0.244
Tariffs	-0.121	-0.052

Table 3. Forecasted Increase in Imports and Exports from 2000 - 2010

	Scenario 1: Tariffs Remain	Scenario 2: Tariffs Gradually Reduced	Scenario 3: Tariffs Eliminated
US Imports			
Source			
Brazil	53%	59%	65%
Colombia	57%	59%	62%
Argentina	68%	71%	74%
Weighted Average	58%	62%	66%
US Exports			
Destination			
Brazil	279%	312%	350%
Colombia	79%	116%	157%
Venezuela	30%	56%	85%
Weighted Average	109%	141%	177%