

# **NAFTA Markets for Northern Plains Agricultural Producers**

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## **I. INTRODUCTION**

The North American Free Trade Agreement (NAFTA) was signed in December 1992 and became effective January 1, 1994. NAFTA comprises two bilateral agreements on market access - one between the United States and Mexico and the other between Canada and Mexico. The 1989 Canadian/ Free trade Agreement (CUSTA), which governs trade between the United States and Canada, also is incorporated into NAFTA. The agreement would create the largest single market in the world, representing 350 million consumers and trade value at over \$230 billion annually.

This paper evaluates the ability of Northern Plains agricultural producers to be competitive in both Canadian and Mexican markets under the NAFTA agreements, while at the same time retaining market share in the domestic market. Specific objectives of this paper are: 1) to assess the impacts of NAFTA on trilateral trade of agricultural and industrial commodities, 2) to evaluate Northern Plains agricultural competitiveness in the United States, Mexico, and Canada under NAFTA, 3) to determine factors affecting trade flows of agricultural commodities/products among the three countries, and 4) assess the performance of the NAFTA agreement. The paper estimates trade effects of NAFTA in the United States, Canada, and Mexico. Special attention is given to evaluate the trade relationship between the United States and Canada and that between the United States and Mexico. It is hypothesized that trade effects of NAFTA between the United States and Mexico are larger than those between the United States and Canada mainly because of dissimilarity in the resource

endowments, including labor, capital, and technology, between the United States and Mexico, compared with that between the United States and Canada.

## **II. HIGHLIGHT OF THE NORTH AMERICAN FREE TRADE AGREEMENT**

While the United States and Canada are similar in terms of resource endowments, Mexico differs from its two trading partners (Table 1). Per capita gross domestic product in Mexico is approximately one-tenth of that in the United States and Canada. Farm population is 27.6 percent of the total population in Mexico and is less than 2.5 percent in the United States and Canada. Per capita farmland in Mexico (.7 acres) is smaller than the United States (1.9 acres) and Canada (4.6 acres).

U.S./Mexican trade was reasonably well-balanced in the late 1980s and early 1990s, prior to the NAFTA Agreement, with U.S. trade flows to Mexico of \$24.6 billion and Mexican trade flows to the United States of \$26.9 billion (Figure 1). Agriculture represented only a small part of the trade, about 10 percent, with slightly larger flows to Mexico than from Mexico. Similarly U.S./Canadian trade, though substantially larger with \$87.3 billion sold to Canada and \$82.8 billion sold to the United States, was also reasonably well-balanced. Again, agricultural trade represented only a small proportion of the total trade with \$3.1 billion sold to Canada and \$2.8 billion purchased from Canada. The Canadians hoped the agreement would enable them to grow their trade with Mexico from \$0.59 billion and reduce the imbalance of that trade; Canada imported \$1.9 billion from Mexico.

NAFTA will create a free trade area by eliminating border protection on agricultural and nonagricultural products among the three countries. NAFTA is established under GATT

Article XXIV, which prohibits any FTA from imposing higher or more restrictive duties to the third party countries than those existing before its formation.

CUSTA began to eliminate most tariff and nontariff barriers between the United States and Canada over the transition period in three different categories. The first set of tariffs was eliminated January 1, 1989 for a group of goods that make up 15 percent of dutiable bilateral trade. The second set of changes calls for tariffs to be phased out over five years in equal annual installments of 20 percent. The third set of tariffs will be eliminated in 10 annual installments of 10 percent. This group accounts for half of the bilateral trade subject to duties. Most agricultural products belong to this group.

Similarly, all tariffs and nontariff measures are being eliminated over a specified transition period (5 to 15 years) between the United States and Mexico and between Canada and Mexico under NAFTA. Most nontariff barriers have been converted to tariff-rate quotas. Mexico's nontariff barriers are largely import licenses. Nontariff barriers, mainly import quotas on agricultural commodities, were converted to tariff-rate quotas and are being phased out over the transition period.

Average protection rates in the United States are 2.43 percent on Canadian goods and 3 percent on Mexican goods (Table 2). Average protection rates in Canada are 3.8 percent on both and Mexican goods. Mexico's average rates are about 18 percent on both and Canadian goods.

The agreement was passed in the U.S. Senate, only because of forthright support by President Clinton and by the leadership of the Senate majority under Senator Robert Dole.

Significant elements of the U.S. Congress and the American public remained very dubious about the NAFTA Agreement and its impact on domestic business growth and jobs. Indeed, among farmers a great deal of skepticism existed as to whether the agreement would be beneficial to U.S. agriculture. Finally, while most of the attention was focused on U.S./Mexican trade, agricultural interests in this country had high expectations that the agreement would quickly bring down remaining Canadian trade barriers, including Canada's quota system for protection of its domestic livestock industry.

### **III. TRADE CREATION AND DIVERSION EFFECTS**

Past studies used single equation estimation techniques and were interested primarily in aggregate effects of free trade agreement. Brown et al. (1992) analyzed the effect of NAFTA without considering whether its effect is trade creating or trade diverting. Other studies focused on the relative effects of free trade agreement (FTA) on total trade volume of specific industries and the participating countries' social welfare (Brown, 1992; Brown and Stern, 1989; Cox and Harris, 1986; Wigle, 1988; Stokes, 1989; Weintraub, 1992; Wonnacott and Wonnacott, 1967) but did not pay any attentions on the trade creation (TC) and trade diversion (TD) effects of FTA on specific industries or commodity groups . Koo et al. (1991) analyzed the effects of FTA on 10 commodity groups, but focused on the trade relationship between the United States and Canada.

The economic effects of cuts in tariff and nontariff barriers on economies of the participating countries can be divided into trade creation (TC) and trade diversion (TD). Under a free trade agreement, a country's TC occurs when low price imports from its trading

partner displace domestic production. A country's TD occurs when imports from its trading partner replace imports from third party countries, which still face high tariffs and nontariff barriers. To graphically demonstrate trade creation and diversion effects under NAFTA, imports are divided into its imports from one of the NAFTA member countries (Canada or Mexico) and its imports from the rest of the world. The effects of NAFTA on imports are illustrated in Figure 2. (2a) depicts import demand from the rest of the world; and Figure (2b) represents import demand from Canada or Mexico. Figure (2c) applies to domestic producers in the United States. Free trade prices from the two external sources are indicated by  $P_n$  and  $P_o$ . Thus, the tariff inclusive prices are  $P_n+t$  and  $P_o+t$ . Since we do not assume products from alternative sources to be perfectly competitive, the prices need not be equal. This study assumes that import demand for each commodity group faces perfectly elastic export supply from Canada or Mexico and the rest of world, indicating that imports are assumed to be not large enough to influence world prices.

If the import duty on the product is eliminated entirely, the United States will increase its imports from the rest of the world from  $O_1a$  to  $O_1b$  and will increase its imports from Canada or Mexico from  $O_2c$  to  $O_2d$ . These increases in imports would, in turn, cause the demand for similar domestic products to decline (downward shift) as consumers substitute lower priced imports for the locally-produced item. In Figure (2c), the demand curve for domestic output shifts from  $D_1$  to  $D_3$ , indicating that demand for domestic output declines from  $O_3g$  to  $O_3e$  as the tariff is eliminated. This shift in the demand can be divided into two components: the shift from  $D_1$  to  $D_2$  is due to the replacement of domestic outputs with

imports from one of the NAFTA member countries and the shift from  $D_2$  to  $D_3$  is due to imports from the rest of the world.

Consider the case of NAFTA, under which the United States grants duty-free treatment to Canada and Mexico. Since the tariff is not reduced for other countries, Canada or Mexico has a comparative advantage in exporting to the United States. The initial decline in domestic output as a result of the FTA is  $gf$ , shifting the demand schedule from  $D_1$  to  $D_2$ . This increase in the imports from Canada or Mexico is known as the trade creation effect because trade volume increases as a result of the elimination of tariffs under the FTA. Since other countries still face tariffs, the United States may replace imports from other countries with Canadian or Mexican commodities which enter the United States duty free. This implies that import demand schedule from Canada or Mexico shifts outward from  $D_p$  to  $D_p^*$ , resulting in an increase in imports from the country from  $O_2d$  to  $O_2r$ . At the same time the import demand schedule for other countries shifts inward from  $D_n$  to  $D_n^*$ , indicating a decrease in the imports from other countries from  $O_1a$  to  $O_1h$ . The demand schedule for domestic products shifts inward from  $D_2$  to  $D_3$ , and demand for domestic output decreases further from  $O_3f$  to  $O_3e$ . This additional increase in imports from Canada or Mexico is known as the trade diversion effect.

TC and TD effects of NAFTA are calculated for SITC one digit commodity groups. Quarterly trade data reported at the one digit SITC level were collected from 1984 to 1992. Bilateral trade values of exports and imports from and to Canada, Mexico, and the rest of world were obtained from the Foreign Trade Division, U.S. Department of Commerce. Price indexes of U.S. imports and exports were collected from the Bureau of Labor, U.S.

Department of Labor, and from various issues of *Monthly Labor Review*. Canadian and Mexican bilateral trade, each nation's imports from the world, and unit value index data were obtained from the U.N. Statistical Division. U.S. domestic and multilateral wholesale price data were found in *International Financial Statistics*. Tariff data were obtained from *Year in Trade: Operation of the Trade Agreement Program* (U.S. International Trade Commission) and *Potential Impacts on the U.S. Economy and Selected Industries of the North American Free Trade Agreement* (U.S. International Trade Commission). Import and export price data are weighted Laspeyres indexes based on the homonized system developed by the Customs Cooperative Council, the Standard International Trade Classification, and the Bureau of Economic Analysis.

### **Import Demand Elasticities**

To calculate TC and TD effects of NAFTA, we need price elasticities of each country's import demands for SITC groups used in this study. The elasticities can be estimated from a traditional Maschallian demand equation specified as

$$q_{it} = \alpha_i \pi \prod_{j=1}^J P_{jt}^{\gamma_{ij}} X_t^{B_i} e_{it} \quad (1)$$

where  $q_{it}$  = the quantity of commodity group  $i$  in time  $t$ ,  $P_{jt}$  = price of commodity group  $j$  in time  $t$ ,  $X_t$  = total expenditure in time  $t$ , and  $e_{it}$  = the random error term.

Since trade flows of aggregated commodity groups are published only in the value term rather than the quantity term, Equation 1 is not applicable for demand estimation for SITC commodity groups. Multiplying both sides of Equation 1 by  $P_{it}/X_t$  yields

$$W_{it} = \alpha_i \pi \prod_{j=t}^{\gamma_{ij}} X_t^{\beta_i} (P_{it}/X_t) e_{it} \quad (2)$$

Where  $w_{it}$  is expenditure share of the  $i$ th commodity group in time  $t$  ( $q_{it}P_{it}/X_t$ ).

Expressing Equation 2 in the log form and rearranging the variables give

$$\ln W_{it} = \ln \alpha_i + (\gamma_{ii} + 1) \ln P_{it} + \sum_{j=1} \ln P_{jt} + (\beta_i - 1) \ln X_t + \ln e_{it} \quad (3)$$

Equation 3 is a static demand model. Dynamics in import demand behavior can be obtained by introducing the stock adjustment hypothesis (Nerlove, 1956) expressed as follows:

$$\ln w_{it} - \ln w_{it-1} = \lambda (\ln w_{it}^* - \ln w_{it}) \quad (4)$$

where  $0 < \lambda < 1$  and  $w_{it}^*$  is the desired level of expenditure share. In this dynamic model, the dependent variable is  $w_{it}^*$  instead of  $w_{it}$  in Equation 3.

Combining Equations (3) and (4) under the stock adjustment hypothesis yields

$$\begin{aligned} \ln W_{it} &= \lambda \ln \alpha_i + \lambda (\gamma_{ii} + 1) \ln P_{it} + \lambda \sum_{j=1} \gamma_{ij} \ln P_{jt} + \lambda (\beta_i + 1) \ln X_t \\ &+ (1 - \lambda) \ln W_{it-1} + \lambda \ln e_{it} \end{aligned} \quad (5)$$

Equation 5 is used to estimate price elasticities of import demand for the commodity groups produced in Canada and Mexico in the United States, and for U.S. commodities in Canada and Mexico.

Since quarterly data are used for this analysis, seasonal dummy variables representing the first three quarters (S1, S2, and S3) are added to Equation 5. All commodities are divided into ten groups on the basis of the SITC one digit code. Each commodity group has four import demand equations; U.S. imports from Canada, U.S. imports from Mexico, Canadian imports from the United States, and Mexico's imports from the United States. Each country's imports from one of its trading partners has ten equations. The Zellner Seemingly Unrelated Regression Estimator (SURE) is used to estimate the parameters of individual equations with allowance of contemporaneous correlation.

Table 3 presents the estimated price elasticities. All own price elasticities are negative, indicating that import demand for a commodity group is inversely related to the import price of the group. U.S. imports from Canada and Mexico are generally inelastic except import demand for food and live animals. On the other hand, Canada's and Mexico's imports from the United States are more elastic than U.S. imports from the countries. This is mainly because U.S. imports from these countries are input materials, while U.S. exports to these countries are consumer goods. Mexico's imports from the United States are more elastic than Canadian imports, indicating that the Mexican market is larger and has more diversified import sources than the Canadian market.

### **Trade Creation and Diversion Effects**

The trade-expanding benefits of the FTA for the beneficiary country are two-fold: trade creation (area dmnc) at the expense of domestic producers and trade diversion (area drlm) at the expense of other countries' exports. The trade creation effect traditionally is estimated using import demand elasticities ( Verdoorn, and Baldwin and Murray) as

$$TC_i = M_i e_i (\Delta t_i / 1 + t_i) \quad (6)$$

where  $TC_i$  is trade creation for a specific commodity  $i$  in the United States,  $M_i$  is the initial level of U.S. imports from Canada,  $\Delta t_i$  is the change in tariff rate in the United States,  $t_i$  is the initial tariff level for commodity  $i$ , and  $e_i$  is the import demand elasticity for commodity  $i$ .

The trade diversion effect is not easy to calculate, mainly because of difficulties in empirically estimating substitution elasticities. The trade diversion effect can be estimated by using the Baldwin and Murray method as follows:

$$TD_i = TC_i (M_{ni} / V_i) \quad (7)$$

where  $M_{ni}$  is initial U.S. imports of commodity group  $i$  from other countries, and  $V_i$  is U.S. domestic production of commodity group  $i$ . Alternatively, trade diversion can be calculated by using the Verdoorn method as follows:

$$TD_i = TC_i (M_{ni} / (M_{ni} + M_i)) \quad (8)$$

where  $M_{ni} / (M_{ni} + M_i)$  is the ratio of the import from the nonbeneficiary to the country's total imports of commodity group  $i$ .

For empirical applications of the integration theory, the use of the Baldwin and Murray method requires domestic production by product group, which is frequently unavailable (Sawyer and Sprinkle 1989). The Verdoorn formula, therefore, has been more frequently used to compute trade diversion.

### **Bilateral Trade Between the United States and Canada**

Table 4 shows the total effect of NAFTA on bilateral trade between the United States and Canada. The total increase in U.S. imports from Canada is \$3 billion; \$1.7 billion through the trade creation and \$1.3 billion through the trade diversion. Commodity groups which have major increases in imports are machinery and transportation equipments (\$1.1 billion) and manufactured goods (\$0.6 billion). An increase in U.S. imports for food and live animals is \$207 million, which is the third largest import item.

The total increase in Canadian imports from the United States is \$4 billion; \$3.2 billion through the trade creation and \$0.8 billion through the trade diversion. The commodity group which has the largest increase in imports is machinery and transportation equipments (\$2.9 billion) and chemicals (\$.3 billion). An increase in Canadian imports for food and live animals from the United States is only \$23 million, which is much smaller than U.S. imports from Canada (\$207 million).

Increases in Canadian imports from the United States are larger than those in U.S. imports from Canada. Trade creation and diversion effects of NAFTA are 57 percent and 43 percent of the total U.S. imports from Canada, respectively, while they are 80 percent and 20 percent of the total Canadian imports from the United States. This implies that the U.S. economy is larger and more diversified than the Canadian economy.

### **Bilateral Trade Between the United States and Mexico**

The increase in U.S. imports from Mexico is \$1.3 billion; \$0.67 billion through the trade creation and \$0.62 through the trade diversion (Table 5). Commodity groups which have the largest and second largest increases in imports are machinery and transportation equipments (\$399 million) and food and live animals (\$310 million). On the other hand, the total increase in Mexico's imports from the United States is \$9.8 billion; \$9.0 billion through the trade creation and \$0.8 billion through the trade diversion. Machinery and transportation equipments have the largest increase in imports. Increases in Mexico's imports from the United States also are significant in food and live animals (\$1 billion), mineral fuels (\$1 billion), and manufactured goods (\$1.1 billion).

Trade creation and diversion effects are almost the same in U.S. imports from Mexico, but they are 90 percent and 10 percent of Mexico's total imports, respectively. This is mainly because the U.S. economy is much larger and more diversified than Mexico's economy.

Effects of NAFTA on bilateral trade between the United States and Mexico are much larger than those between the United States and Canada. This is mainly because 1) Mexico's trade barriers on goods produced in the United States have been higher than Canada's barriers and 2) U.S. resource endowments are similar to Canada's resource endowments, but very different from Mexico's resource endowments.

#### **IV. PROMISE AND PERFORMANCE**

U.S. Government officials and U.S. business persons held out high hopes for trade growth under the NAFTA Agreement. Those supporting the agreement held out the promise of dramatic growth in U.S. exports to Mexico, including agricultural exports, and continued

strong growth of manufactured products to Canada. It was generally understood that the promise of the NAFTA Agreement was to be greater for the balance of the U.S. economy than for the Nation's agricultural sector.

The prospect for growth in agricultural exports to Mexico was always more important to U.S. policy makers than was increased agricultural exports to Canada. The United States purchased fruits, vegetables, tobacco, beverages, coffee, and livestock products from Mexico and sold to Mexico grains, animal products, oilseeds, sugar, and produce. The United States sold fruits, vegetables, manufactured food products, tobacco, and some live animals to Canada. It in turn imported manufactured food products, meat, and some live animals.

The agreement is nearly three years old. It is useful to ask whether its performance has met its promise. An early U.S. Department of Agriculture assessment projected that U.S. agricultural exports to Mexico would rise to \$3.6 billion in 1993 and to \$10.1 billion in 2008, after full NAFTA phase-in. Again, the answer will depend in part upon one's expectations.

Agricultural trade under the NAFTA Agreement got off to a very promising start. Sales of animals and products, grains and feeds, fruits and vegetables, and oilseed products to Mexico were all substantially higher in the first nine months of 1994 than for the same period in 1993. That favorable progress was not to continue, however.

The Mexican Peso was revalued and a new Peso issued in 1994, in an effort to stem the outflows of Mexican foreign exchange reserves. One year later the value of the new Peso had declined from 5.325 Pesos to the U.S. dollar to 7.6425 Pesos to the U.S. dollar. The tighter macroeconomic policies required to protect the Peso triggered a major economic downturn to the Mexican economy from which it has not yet recovered, although economic

conditions are now stabilizing. The Mexican economy contracted by 6.9 percent in 1995. Unemployment rose and personal incomes fell in Mexico, sharply reducing their demand for imported U.S. agricultural products. U.S. agricultural exports to Mexico fell to \$3.7 billion in fiscal 1995 from \$4.1 billion the year before. Meanwhile, U.S. imports from Mexico rose to \$3.7 billion from \$2.8 billion in the previous year. (Total fiscal 1995 U.S. exports to Mexico fell \$4.6 billion, while import from Mexico rose by \$2.3 billion, compared to the previous year.) U.S. agricultural exports to Canada rose by \$577 million and imports from Canada rose by \$149 million in the same time frame.

The Northern Plains agricultural producers have also been disappointed in the implementation of the U.S./Canada Free Trade Agreement, which pre-dated the NAFTA Agreement and was used as the NAFTA language between the United States and Canada. These producers had believed that agricultural trade barriers between the two countries would be totally dismantled under the agreement, including Canadian protection of parts of its livestock industry through quota systems and marketing boards. Instead, Canadians, apparently correctly, indicate they are only required to meet the trade liberalization requirements of the Uruguay Round of the GATT to which both the United States and Canada are signators, rather than to remove all agricultural trade barriers between the two countries as U.S. Northern Plains agricultural producers believed was required under the NAFTA Agreement.

As a result of disappointing growth in agricultural export sales to Mexico and continuing frustration over the current Canadian interpretation of its responsibilities under the U.S./Canadian Free Trade Agreement, some U.S. Northern Plains elected officials have asked

whether the terms of the NAFTA Agreement should be re-visited. Some agricultural producers are beginning to ask whether the agreement should be canceled. Frustrations over Northern Hemisphere trade arrangements and trade growth seem likely to grow among Northern Plains agricultural producers because of disappointments regarding the NAFTA Agreement. Those disappointments are likely to be exacerbated by the continued low U.S. cattle prices (a feature of the current liquidation phase of the U.S. cattle cycle) and the 40 percent decline in hard red spring wheat prices since the spring of this year.

It is unlikely that U.S. frustration with the NAFTA Agreement will simply disappear any time soon. While agricultural interests do not have sufficient clout to upset the NAFTA apple cart, a loose collection of dissidents, including workers laid off from corporate downsizing, labor unions, and protectionist politicians from both sides of the political aisle, together, can be expected to ask some very tough questions about its performance thus far, compared to its promise.

Just what is it that is so troubling to Northern Plains agricultural producers? First, there is growing concern that Canada will not, and may not need to, dismantle its trade barriers to the same extent that the United States and Mexico have committed to do. The continued use of quotas to protect Canadian dairy, pork, and poultry is very troubling to U.S. producers. Most American producers believe we could compete effectively for those Canadian markets, were they not protected by government policy. This is especially true at a time when our producers see a steady stream of semi trucks loaded with Canadian fat hogs heading to Minnesota, Iowa, and Nebraska to slaughter. The prospect of Canadian wheat and feedgrains flowing into the U.S. processing channels is another troubling reality, when U.S.

grains face tariff and nontariff import restrictions at the Canadian border. The continued use of government marketing boards to market Canadian prairie wheat, barley, and a number of other agricultural products remains a troubling difference in the two country's policy framework, since our producers believe that monopoly selling arrangement provides Canada an advantage in export sales under multi-year contracts, especially when so little information on the terms of their sales is available to the grain trade.

With regard to Mexican trade, U.S. producers are discouraged at the pace of exports to Mexico and do not believe that current Mexican policies will soon sufficiently re-invigorate their economy to get trade growth in wheat and flour, barley and barley malt, oil seeds and oil seed products, etc., back on track. At a time when government programs are being chopped in the United States, the U.S. effort to help to stabilize the Mexican Peso, the right choice among a set of difficult alternatives, has faced considerable opposition. The use of tariff rate quotas to control imports of products, such as dry edible beans, when prior to NAFTA no quotas were in place, upsets Northern Plains producers; despite the progress that NAFTA brought in replacing import licensing decisions with tariff rate quotas. U.S. agricultural producers are concerned that fragility in the Mexican financial system may result in further problems for the Mexican economy. Finally, the weak performance of the Mexican economy, and attendant weakness in U.S. exports to Mexico is viewed as very negative by U.S. agricultural producers hoping for export market growth to the country.

## **V. CONCLUSIONS**

This study indicates that the economic effects of NAFTA on trade performance of individual commodity groups differ from one another; the effects on machinery and transportation equipments and manufactured goods are much larger than those on agricultural commodities and other groups. For all commodities, U.S. exports to Canada and Mexico are larger than U.S. imports from these countries. U.S. imports of agricultural commodities from Canada are larger than U.S. exports to Canada while U.S. imports from Mexico are smaller than U.S. exports.

Effects of NAFTA on agricultural trade is small compared to the effects on industrial goods. However, in the long-run, NAFTA may increase trade volume of agricultural commodities among the three countries if they adjust their agriculture on the basis of the principles of comparative advantage.

The export performance under NAFTA has been disappointing to Northern Plains agriculture. Perceived reluctance to relax trade barriers on the part of Canada and Mexico, along with the economic downturn in Mexico, have begun to cause Northern Plains agricultural producers to call for modifications in the NAFTA accord. Main concerns related to agricultural trade under NAFTA remain the differences in agricultural and macro policies among the three countries. Unless there is greater progress on harmonization of agriculture and trade policies among the countries, trade disputes may continue and disrupt trade flows of agricultural commodities.

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Table 1. Economic and Noneconomic Characteristics of the United States, Canada, and Mexico

	U.S.	Canada	Mexico
Population (million)	261.1	28.1	92.20
Gross Domestic Products (billion US \$)	6738.4	549.2	377.1
Per capita (US\$)	25,808	19,546	4,090
Population in Agricultural(%)	2.5	1.6	27.6
Per capita Arable Land (acres)	1.9	4.6	0.7
Education (years in school)	11.0	12.0	7.5

Table 2. Tariff and Tariff Equivalent Non-tariff Barriers  
on bilateral exports in the United States, Canada, and Mexico

Item	U.S.	Canada	Mexico
Agriculture	12.7	11.6	18.0
Forestry	0.8	0	18.0
Fishing and Trapping	1.7	0.2	18.0
Mining	0.4	0.2	18.0
Manufacturing	4.6	6.5	18.0
Goods	4.7	6.1	18.0
Average	3.0	3.8	18.0

Table 3. The Estimated Price Elasticities of Import Demand For Commodity Groups in the United States, Canada, and Mexico

Item	U.S. Imports From		Canada Imports	Mexico Imports
	Canada	Mexico		
0. Food and live animal	-1.402*	-3.481**	-0.103***	-2.164**
1. Beverages and tobacco	-0.768**	-1.421**	-4.651**	-3.481*
2. Crude materials	-0.941***	-1.533	-0.534	-0.093***
3. Mineral fuels	-0.568***	-0.642**	-1.045	-5.973
4. Oils and fats	-0.799	-0.699	-0.655	-2.679**
5. Chemicals	-0.562***	-0.048	-1.147	-0.044***
6. Manufactured goods	-1.150	-0.799	-0.432	-1.982**
7. Machinery and trans	-0.798**	-0.402**	-1.403	-1.902**
8. Miscellaneous	-1.295**	-0.327**	-0.045*	-2.839**
9. Goods not classified	-2.584***	-1.553*	-0.006*	-2.727

\* Indicates statistical significance at the 10% level

\*\* Indicates statistical significance at the 5% level

\*\*\* Indicates statistical significance at the 1% level

Table 4. Trade Creation and Diversion Effects of NAFTA on Bilateral Trade Between the United States and Canada.

Commodity Group	Trade Creation	Trade Diversion	Total Effect
<u>U.S. Imports from Canada</u>			
0. Food and Live Animals	115,000	92,065	207,065
1. Beverages & Tobacco	12,430	10,370	22,800
2. Crude Materials	64,219	31,101	95,320
3. Mineral Fuels	109,167	88,041	197,208
4. Oils and Fats	2,497	2,091	4,588
5. Chemicals	50,508	41,478	91,986
6. Manufactured Goods	340,112	248,402	588,514
7. Machinery & Transport	618,795	503,394	1,122,189
8. Miscellaneous	103,111	98,355	201,466
9. Goods not Classified	293,545	197,999	491,544
TOTAL	1,709,385	1,313,298	3,022,683
<u>Canada's Imports From the U.S.</u>			
0. Food and Live Animals	18,460	4,732	23,192
1. Beverages & Tobacco	25,491	19,288	44,779
2. Crude Materials	55,946	13,100	69,046
3. Mineral Fuels	48,743	38,000	86,743
4. Oils and Fats	1,566	0	1,566
5. Chemicals	280,744	43,361	324,105
6. Manufactured Goods	167,615	48,373	215,988
7. Machinery & Transport	2,366,296	55,284	2,421,580
8. Miscellaneous	286,154	110,404	396,558
9. Goods not Classified	7,893	542	8,435
TOTAL	3,258,908	833,086	4,091,994
Total Bilateral Trade Volume	4,968,293	2,146,386	7,114,679

Table 5. Trade Creation and Diversion Effects of NAFTA on Bilateral Trade Between the United States and Mexico

Commodity Group	Trade Creation	Trade Diversion	Total Effect
<u>U.S. Imports from Mexico</u>			
0. Food and Live Animals	163,230	146,387	309,617
1. Beverages & Tobacco	11,477	10,886	22,363
2. Crude Materials	32,040	30,394	62,434
3. Mineral Fuels	88,469	80,815	169,284
4. Oils and Fats	472	416	888
5. Chemicals	1,152	1,118	2,270
6. Manufactured Goods	52,256	55,809	108,065
7. Machinery & Transport	209,682	191,768	401,450
8. Miscellaneous	41,744	39,821	81,565
9. Goods not Classified	68,803	63,357	132,160
TOTAL	673,355	620,817	1,294,172
<u>Mexico's Imports From the U.S.</u>			
0. Food and Live Animals	700,476	329,592	1,030,068
1. Beverages & Tobacco	17,700	14,406	32,106
2. Crude Materials	22,971	6,643	29,614
3. Mineral Fuels	822,892	238,361	1,061,253
4. Oils and Fats	54,118	36,309	90,427
5. Chemicals	10,416	2,877	13,293
6. Manufactured Goods	922,818	135,690	1,058,508
7. Machinery & Transport	4,299,308	40,622	4,339,930
8. Miscellaneous	1,416,844	15,478	1,432,322
9. Goods not Classified	723,198	0	723,198
TOTAL	8,990,742	819,978	9,810,720
Total Bilateral Trade Volume	9,664,097	1,440,795	11,104,892

**NAFTA Markets for  
Northern Plains Agricultural Producers**

**by**

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