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U.S. – Mexico Food Systems and The Tomato Trade Dispute

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Abstract

Mexican produce exports into the U.S. increased considerably during the latter months of 1995 and the first nine months of 1996. Because of these increased imports, Florida tomato growers requested the executive branch of the U.S. government and Congress to put into effect seven trade protection measures to reduce or stop fresh tomato imports from Mexico. This study was carried out to determine if the United States Department of Commerce (USDOC) and the United States International Trade Commission (USITC) found valid and reliable indications that the tomato industry in the U.S. was materially injured by imports from México.

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Mexico's Trade with the U.S.

In recent years international trade has significantly increased because of economic and political reforms that some countries have put into effect, and also because of the technological breakthroughs in areas such as transportation, communication, and information. Due to the evolving trade scenario, countries around the world

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depend more on international trade activities for the source of income they produce and for the generation of goods and services that are involved in such activities. Several authors have considered that the “dual phenomenon” of economic integration and global markets is going to increase in the coming years. They have forecast a significant liberalization in the agricultural and agri-food sectors. This future scenario is very important for developing countries that depend mainly on agricultural trade activities. Often, these countries rely on the exports of some agricultural or agri-food products as a main source of income.

Mexico is no exception to this global trend. To successfully compete in international markets Mexico needs to expand and strengthen its market economy. Mexico needs to strongly face international competition, and to make necessary changes in the social, political and economic arenas in the coming years. This can be achieved by making effective use of the different tools that Mexico has available under the trade agreements already signed with other countries, and by negotiating new trade agreements with other countries to get access to the markets for those products in which Mexico has both competitive and comparative advantages.

Traditionally, Mexico has had competitive and comparative advantages in its fruit and vegetable sectors. In such sectors Mexico has a large diversity of commodities which are based mainly on its natural resources such as soil, climate and water conditions. Such advantages are reinforced with the adoption and use of new technologies. Because of the use of high technology, Mexico has been producing significant amounts of export quality fruits and vegetables during recent years. The main market for these products has been the U.S. with Mexico's export potential increased further because of its geographical location, and because of being complementary among the agricultural harvesting seasons of both countries.

Another factor that increased the comparative advantage for Mexico's fruit and vegetable sectors was that during the negotiations to settle the North American Free Trade Agreement (NAFTA) Mexico obtained special protection treatment from the U.S. in its exports of fresh tomatoes. This special protection consisted of gradually lowering the duties applied on these products. The countries implemented the lowering of duties by applying a seasonal tariff to these products mainly during the winter and spring months. In addition, the countries negotiated a tariff rate quota mechanism which will allow them to reach a complete free trade regime within a decade. Under this mechanism tomato quotas will benefit because of the lowering of duties, and the shipments that exceed these quotas will be charged with a higher tax rate.

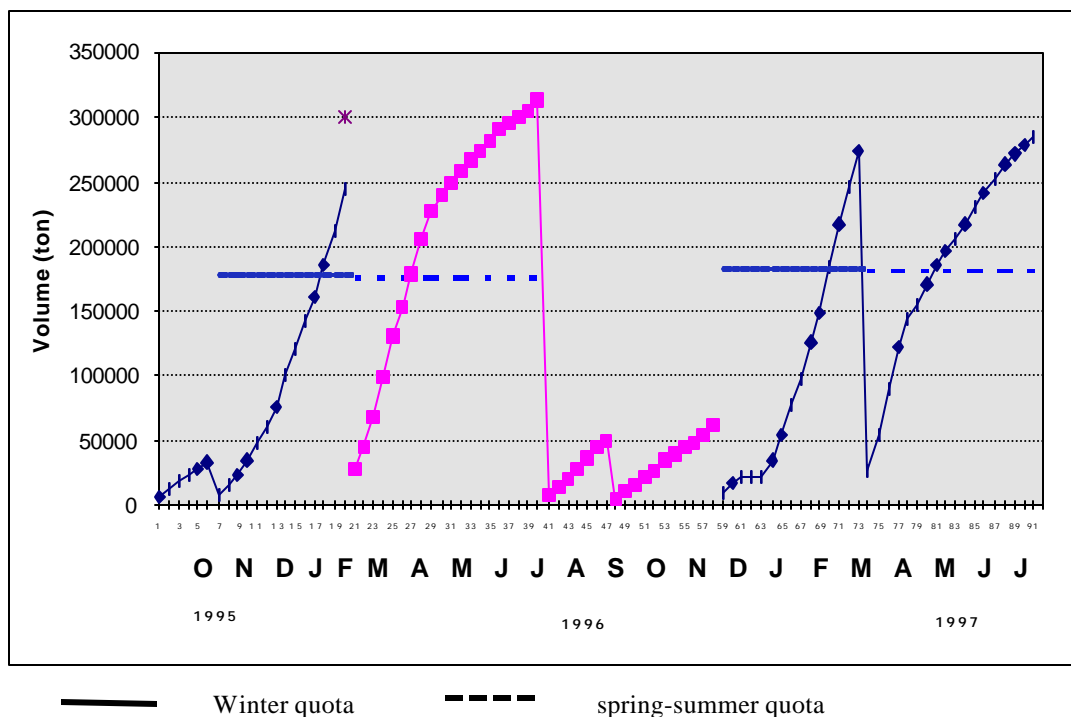
Despite the protection reached under NAFTA, the export of vegetable products into the U.S. winter market had a considerable increase in the latter months of 1995 and first nine months of 1996. During 1995, the export value of tomato and bell peppers increased 57 and 40 per cent, respectively, compared to 1994, while the volume of

these products increased 66 and 16 per cent, respectively. In 1995, Mexican fresh tomato exports contributed a very significant amount to Mexico's balance of trade from food and agriculture. Mexican exports of vegetables into the U.S. represented around \$748.2 million dollars which was around 17 percent higher than the surplus obtained in 1995.

The significant increases in the volume of exports are due, in part, to the fact that the Mexican States of Sinaloa and Baja California produced about 66 and 25 percent, respectively, of their state production for export markets. During recent years vegetable growers in these two northwestern states of Mexico applied significant technological changes to the production techniques for these vegetables.

Figure 1 shows the weekly accumulation of Mexican fresh tomato exports going into the U.S. from October 1995 through January 1997. It can be seen that the volume of exports was growing steadily even after the negotiated quota was exceeded. Under these circumstances Mexican growers continued shipping fresh tomatoes into the U.S. even though a higher tax rate was applied on those products.

The sudden increase in the export levels of Mexican fresh tomatoes going into the U.S. markets, may also be explained by the peso devaluation that took place in Mexico at the end of 1994. The devaluation made Mexican exports of fruit and vegetables cheaper than the domestic ones in foreign markets which represented an additional advantage to compete overseas. In addition, Florida experienced bad weather conditions which caused a significant drop in its production of fresh tomatoes, and consequently Florida lost part of its U.S. market share during that period giving an additional advantage to Mexican growers.



Period	Quota	Tariff	Tariff within	Tariff Out	Volume	Difference
	Ton		Quota	of Quota	Ton	Ton
Sept. 1st to Nov. 14th, 1995*	–	2.7c/kg	–	–	34,070	–
Nov. 15th, 1995 to Feb. 28th, 1996	177,469		2.6c/kg	3.3c/kg	244,137	66,668
March 1st to July 14th, 1996	175,579		3.2c/kg	4.6c/kg	313,220	137,641
July 15th to Sept. 31st, 1996	–	1.3c/kg	–	–	49,452	–
Sept. 1st, to Nov. 14th, 1996	–	1.3c/kg	–	–	62,542	–
Nov. 15th 1996 to Feb. 28th, 1997	182,793		2.31c/kg	3.3c/kg	273,857	91,064
March 1st to July 14th, 1997**	180,846		2.74c/kg	4.6c/kg	284,445	103,599

The published volume during this period is shown starting October 1st., 1995, through July 1997. Source: This table was elaborated with data published by the Director of Foreign Trade/General Director of International Affairs/SAGAR (1996), with data coming from U.S. Department of Agriculture, Agricultural Marketing Service.

Figure 1: Weekly accumulation of the Mexican fresh tomato exports going into the U.S. from October 1995 through July 1997*.

Trade Protection

Because of these sudden increases in Mexican vegetable exports, Florida growers reacted negatively and put pressure on the Clinton Administration who had been supporting several initiatives to increase the commercial protection for Florida producers beyond what was agreed to in NAFTA. At the end of 1995 and during the first quarter of 1996, Florida growers requested from the U.S. administration and Congress to put into effect seven different trade protection measures in order to stop the fresh tomato imports from Mexico. They were as follows:

1. Modification of the “national industry” definition.
2. Imposition of new regulations for labeling and packing the Mexican tomato.
3. Weekly administration of the tomato quota.
4. Application of the Florida inspection quota to imported products.
5. An increase in the number of phytosanitary inspections.
6. Safeguard investigation.
7. Dumping investigation.

The primary focus of this study was to evaluate the methods used in the economic analysis that was applied to the dumping investigation. The allegation was that dumping had occurred and that the U.S. tomato industry was materially injured by the import of tomatoes from Mexico.

Objectives

The objectives of the study were as follows:

1. Analyze the methodology used by U.S. International Trade Commission (USITC) staff to determine if dumping causes material injury. Is the methodology valid and reliable?
2. Determine whether the U.S. Department of Commerce (USDOC) and the USITC staff found that an industry in the U.S. was materially injured by imports of fresh tomatoes from Mexico that were sold at less than fair value (LTFV).

Model for Comparative Analysis of the Domestic Industry’s Condition

The determination of dumping and material injury comes from the U.S. antidumping law. Title VII of the Tariff Act of 1930, as amended by the Trade Agreement Act of 1979, defines dumping to occur any time imports are sold at “less than fair value” in U.S. markets and such imports cause “material injury” to a U.S. domestic industry. According to Murray (1991), under the U.S. antidumping law, “sales at less than fair value,” may exist when prices charged by the foreign producers on sales to the United States are below the “foreign market value.” In this context, Murray (1991) stated that “foreign market value” may be defined in three different ways, (1) “as the price charged by the foreign producer on sales in the producer’s home market; (2) as the price charged on exports to a third country; and (3) as the cost of production, which is used if neither of the previous prices are considered adequate.”

The USITC determines whether “an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports of that merchandise.” In reaching “material injury” determinations, USITC commissioners have traditionally used five different approaches to determine “injury” and

“causation” (Kaplan, 1991). The one used by the USITC in the trade dispute with Mexico was the “comparative analysis or unitary approach.”

Near the end of the 1980's, the USITC designed a comparative static price-theoretic economic model known as the Comparative Analysis of the Domestic Industry's Condition (CADIC) model. The underlying framework of the CADIC model was a generalized imperfect substitute model usually known as an Armington model. The model takes into consideration three imperfect substitute products which account for the demand in a domestic market. The three are: (1) the domestic product, (2) the subject LTFV imports and, (3) the non-subject fairly traded imports. The approach used in the CADIC model is commonly referred to as an elasticities model. An important feature of this kind of elasticities model is that the values for the elasticities are derived not only from market specific qualitative information but also from previous economic studies that may seem to be applicable.

Boltuck (1993) stated that an Armington assumption is made in this model that products are differentiated by country of origin. Therefore, consumers are more likely to distinguish those products by regarding the place where they were produced. In estimating the effects of dumped imports on the price and production of domestic products, the demand for the three goods in the domestic market, as well as the supply of domestic products must be considered simultaneously. By equating the supply and demand functions, the competitive market equilibrium condition for the domestic product, the subject LTFV imports, and the fairly traded non-subject country imports is as follows:

$$E_i \ln(p_i) = \ln(c_i) + S_{ii} \ln(p_i) + \sum_{j=1}^n S_{ij} \ln(p_j) \quad (1)$$

Where:

- E_i** It is the price elasticity of supply for *i*th product.
- p_i** It is the price of the *i*th product.
- c_i** It is the intercept term of the *i*th demand equation.
- S_{ii}** It is the own price elasticity of demand for the *i*th product.
- S_{ij}** They are the price elasticities of demand for the *i*th product with respect to the price of the *j*th product.

Different Approaches for the Estimation of Elasticities

The application of own and cross price elasticities are critical to the use of the CADIC model. According to Boltuck (1996), there exists two approaches to estimate or approximate the values of the elasticities required by the model.

The first approach involves a bibliographic review of economic literature. By doing such a review, the estimates of elasticities for products that are close or similar to the LTFV subject import, non-subject import, and domestic-like product, are searched for from a number of sources and earlier studies. However, these published studies would likely comprise periods not matched to the current period of investigation, or possibly not precisely match with the products in the dumping inquiry. Even so, such elasticities may be used by economists as an approximation to set a suggested range for the elasticity values.

Boltuck (1996) and Featherstone (1995) affirmed that in cases where econometric estimates are not prepared it is useful to have common guidelines which include a high, moderate, low, as well as a maximum value for the use of the elasticities in the CADIC model. These authors proposed the following guidelines shown in Table 1 which were mainly based on a large number of studies published in the economic literature.

Table 1. Ranges and maximum values for the behavioral estimation of the elasticities of some parameters used in the specification of the CADIC Model.

Qualitative characterization of elasticity.				
Price Elasticity	High	Moderate	Low	Maximum
Aggregate Demand	Greater than -1	-0.5 to -1.0	0 to -0.4	-3
Substitution	Greater than 3	1 to 3	Less than 1	8
Supply	Greater than 3	1 to 3	Less than 1	8

Source: Featherstone, D. COMPAS Data Requirement, published by Research Branch of Canadian International Trade Tribunal, August, 1995.

The second approach to finding elasticities involves using data for the period of study and for the specific products in the inquiry. This was the approach used in this study². The data was applied in the estimation of four types of econometric models (Pindyck and Rubinfeld, 1991). They were a multiple linear regression model, a point method model, a simple linear regression model, and the double-log multiple linear regression model based on a modified Armington procedure (Tweeten, 1992; Tomek and Robinson, 1990). Specific values for the own and cross price elasticities of demand were found which could be compared to the values used by USDOC in the CADIC model.

² Details on the models used in the study and the empirical estimates of elasticities are available from Dennis M. Conley at the email address on the first page.

Results

The USDOC used only the first approach of taking elasticity values from prior and similar studies for use in the CADIC model. Both own and cross price elasticities were applied. Under the second approach, the empirical estimates showed that the own price elasticities of demand were significantly different than zero. This means there was a direct relationship between the own price and the respective quantities demanded for the U.S. domestic product, the fairly traded imports, and the unfairly traded imports. In contrast to the USDOC approach, the empirical estimates of the cross price elasticities of demand were not significantly different than zero. This means there were no cross price relationships among the quantities demanded for the U.S. domestic products, fairly traded imports, and the unfairly traded import products.

The cross price elasticities being zero was contrary to one key assumption for the CADIC model, which was that a symmetry condition be met when determining material injury. However, the cross price elasticities of demand were zero when using all four methods of estimation. This was opposite and contrary to what was assumed in the first approach to selecting elasticities.

Following is a summary of the different outcomes that were reached in the antidumping investigation. The USDOC and USITC enacted a preliminary antidumping investigation and estimated dumping margins were found by the USDOC. However, it was not possible for the USITC to determine if the estimated dumping margins for the individual Mexican tomato firms, and for all other Mexican growers, could provide a reasonable indication that an industry in the United States was materially injured because of tomato imports from Mexico that were sold in the U.S. at less than fair value (LTFV).

There were two paradoxes that arose from this study of a cross-border supply chain and the subsequent trade dispute.

First, a number of shortcomings were evident in the methodology for estimating the dumping margin. An economic model required the specification of elasticities of substitution between tomatoes from Mexico and the U.S. The elasticities used were based on market specific qualitative information and from previous economic studies. The elasticities did not come from actual data reflecting economic behavior during the time of the alleged dumping. The paradox was that the lead author of this study used the actual price and volume data corresponding to the time period. Yet, for some unexplained reason, the USDOC did not. The outcomes obtained by using the behavioral instead of the empirical elasticities were biased against Mexico, and clearly disconnected from the actual situation.

Unfortunately, the empirical research described in the previous point was not available for Mexican producers and exporters before taking into consideration the implementation of a suspension agreement. The parties only had available an overestimated dumping margin and arbitrary values for the elasticity of substitution parameters.

The second paradox arose because the final dumping investigation was never completed, and a suspension agreement procedure was put into effect by the USDOC. Under the agreement the Mexican tomato industry was guaranteed access to the U.S. market, and both Florida producers and Mexican exporters agreed to sell their products above a minimum price. The paradox was that such agreements on prices and other terms could be made between governments to protect and sustain the economic viability of producers and exporters. Yet, individual firms in the food supply chain would be in violation of U.S. antitrust laws.

Conclusions

It was concluded that the economic analysis for antidumping against the U.S. worked in a protectionist direction that favored U.S. domestic producers and went against foreign exporters. However, flaws in the methodology were easily transparent. Subsequently, a government-to-government negotiated agreement in the formerly competitive food supply chain favored U.S. producers and Mexican exporters giving them both price and volume protection at the expense of the consumer who, paradoxically, had no representative at the negotiating table.

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