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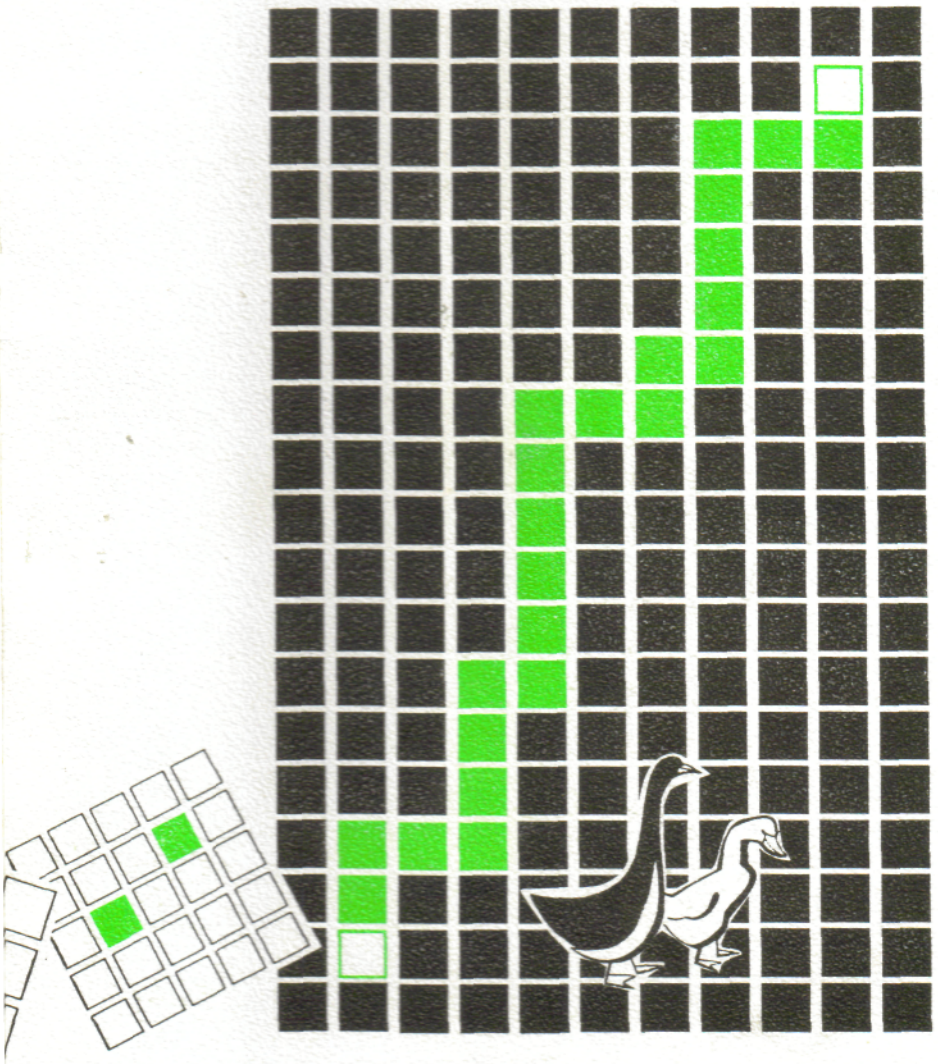

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U.S.-Mexican Tomato Wars and the 1996 Antidumping Suspension Agreement

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Introduction

Tomato imports have been the center of many legal and political conflicts in international trade since the first case was decided by the U.S. Supreme Court in 1893 (Bredahl *et* a/., 1987, p. 5). Florida producers and the Mexican growers, situated in the State of Sinaloa and Baja California, are competing for the U.S. fresh winter market. In the calendar year 1995, U.S. tomato imports from Mexico rose to a record 1.31 billion pounds valued at $404 million, a 58% increase in volume and a 29% increase in value over 1994. Since the peso devaluation of December 1994, imports from Mexico have captured significant additional market share (Table 1). Mexican imports now account for 34.2% of annual U.S. consumption but a much higher market share during the winter season.

The North American Free Trade Agreement

In 1995-96, Florida growers blamed the reduction in trade barriers due to NAFTA for the recent surge in Mexican tomato imports which allegedly depressed domestic prices, profits and resulted in the loss of market share for Florida producers. In the winter market, Florida's market share fell from 59% in 1990/91 to 37% in 1995 *(The Wall Street Journal,* April 3, 1996, p. 1).

During the 1995-96 early winter season, tomato imports from Mexico jumped 24% in volume but only 2% in value compared to 1994-95. By February 12, 1996, the winter tariff-rate quota, established under the NAFTA (177,459 metric tons) was filled but over quota imports were 60% higher than 1995 during the balance of the month (Love and Plunkett 1996, p. 19). Alarmed by the surge of imports and general market conditions, Florida producers filed two separate petitions in March and April for economic relief, the first under Section 202(a) of the Trade Act of 1974 and the second under Section 733(a) of the Tariff Act of 1930.

The petitioners alleged that "domestic growers have been devastated by import surges from Mexico which have depressed market

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prices" *(Petition* March 29, 1996, p. 2). The depressed tomato prices are alleged to cause all of the other industry problems such as declining profits, employment and investments in the industry The objectives of this study, then, are: (1) to discuss recent developments in the tomato trade dispute between Mexico and the U.S., and (2) to analyze factors related to the large expansion of Mexican tomato exports to the U.S. in recent years, which is the primary cause of the trade dispute.

U.S. Trade Laws and Vegetable Imports

U.S. trade law allows domestic vegetable producers to seek protection from imports which allegedly injure specific firms or industries. Sections 201-3 of the Trade Act of 1974 protect domestic industry against imports judged to be a "substantial cause of injury" to U.S. producers "Evidence of substantial injury is provided by significant declines in sales, production, profits, wages. or employment" (Salvatore 1993. p. 313). In 1988, the loss of market share was added as acceptable evidence of substantial injury (Salvatore 1993). If the International Trade Commission votes in the affirmative, the President is authorized to impose duties, quotas or other orderly marketing arrangements to protect domestic industry unduly hurt by imported products.

On March 11, 1996. the Florida Fruit and Vegetable Association, the Florida Bell Pepper Growers Exchange, the Florida Department of Agriculture and Consumer Services and the Ad Hoc Group of Florida Tomato Growers and Packers filed a petition requesting global safeguard relief against increased imports of fresh tomatoes and bell peppers pursuant to Section 202(a) of the Trade Act of 1974. The domestic industry requested relief for *a* four-year period, using both a volume quota and increased duties based on the value of the imported product (p. 50). The U.S. International Trade Commission (ITC) instituted Investigation No. TA-201-66 of fresh tomatoes and bell peppers on March 11, 1996. Subsequently, the petitioners also filed an antidumping petition requesting relief under the antidumping statute.

On March 29, 1996, the Florida Commissioner of Agriculture and Consumer Affairs, the Florida Tomato Growers Exchange, the Florida Tomato Exchange, the Florida Fruit and Vegetable Association (and its Tomato Committee), the Florida Farm Bureau Association, the Gadsden County Tomato Growers Association, the South Carolina Tomato Association, the Accomack County Farm Bureau (VA), and the Ad Hoc Group of Florida, California, Georgia, Pennsylvania, South Carolina, Tennessee and Virginia Tomato Growers also filed a petition "to request initiation of an antidumping duty investigation of fresh tomatoes imported from Mexico which are being, or are likely to be, sold in the United States at less than fair value" *(Petition* March 29, 1996, p. 2). The petition alleged that increased imports, cited in the Section 202 petition, are directly attributable "to dumping by Mexican growers and their importers" leading to U.S. market prices below salvage value for Florida producers. Accordingly, effective April 1, 1996. the International Trade Commission instituted antidumping investigation No. 731-TA-747 (Preliminary).

Thus, the petitioners requested two sets of remedies, one under Section 202(a) of the trade act of 1974 and another under Section 733 (a) of the Tariff Act of 1930, alleging that the "surge" or increased volume of imported products were due in part to imports sold at less than fair value (LTFV).

The International Trade Administration (ITA) of the Department of Commerce determines whether dumping has occurred, and then the iTC determines if the domestic industry has been harmed by the dumping (Moore 1992). If both the ITA and ITC rule affirmatively at the final investigation stage, then duties equal to the dumping margin are placed on the LTFV imports.

While the analytical approach in antidumping and Section 201-3 cases are similar, affirmative decisions in Section 201-3 require the evidence to meet a higher standard or criteria. In an antidumping case, imports may have resulted in a decline of industry capacity and thus satisfy the injury criteria. In Section 201-3 cases the standards for material injury are higher, whereby the petitioner's documents and/or ITC data must clearly indicate shuttering or closing of firm or industry capacity rather than a simple decline in capacity. The higher standard would apply to other evidence of injury such as a decline in prices, employment, wages, growth, or the ability to raise capital for investment.

Previous Studies of Tomato Trade Issues

The U.S-Mexico tomato market has been extensively studied during the last decade. Jordan and VanSickle (1995) evaluated hypotheses of market integration between Florida and Mexico in the U.S. fresh winter tomato market. Jordan and VanSickle concluded that "Mexico responds in the short-term to a change in Florida prices Florida, on the [other] hand, does not appear to respond significantly to a change in the Mexican price in the short run" (pp. 133-134). "Florida appears to be the price leader with its current prices depending significantly on their own past values" (p. 134). Moreover, the Florida price is more dependent on its own past values than on past Mexican prices. The authors also concluded that quantities in the recent past put downward pressure on prices, but only first period lagged quantities were statistically significant. This implies that sudden import surges could depress Florida fresh tomato prices, *ceteris* pan/bus, as the petitioners alleged in 1996.

Van Sickle *et al.* (1994), in an extensive analysis of the competition in the U.S. winter fresh vegetable industry, found that during the period of 1985/86 - 1990/91, Florida gained a competitive advantage for tomatoes as well as market share (p. 65). They also concluded that explicit trade barriers, tariffs, quotas or market regulations will have a direct effect on competitiveness in the fresh vegetable market. Tariff removal, as specified in NAFTA legislation, will improve returns to Mexican growers. Import duties accounted for 6.4 percent of the total production and marketing costs of vine ripe tomatoes from Sinaloa, Mexico, in 1991 (Van Sickle 1994, p. 48).

Bredahl *el al.,* (1987) analyzed an international rent seeking framework with two countries, U.S. and Mexico, and one commodity - tomatoes. They concluded that Florida growers could increase their economic rents by negotiating voluntary quotas or by the formation of a cartel, rather than through

import quotas and tariffs. However, potential cheating by members of a cartel implies that the two countries may be unable to form an effective coalition, suggesting that Florida producers should be content with their economic rents from a free market (p. 10). Earlier, Schmitz *et al.* (1981) examined the 1978 agricultural dumping charge filed by Florida winter vegetable producers against Mexican growers. They analyzed the concepts of "fair value" prices in the home market and abroad, selling below cost of production, and third-market tests for anti-dumping. They found that these tests can lead to ambiguous results. The authors concluded that the law should be changed for future antidumping cases, which should be decided on a "normal business practice" concept, accounting for production and cost decisions unique to highly perishable products (p. 653).

Suspension Agreement on Fresh Tomatoes From Mexico

On October 11, 1996, the U.S. Department of Commerce and the signatory producers/exporters of fresh tomatoes from Mexico entered into an agreement to suspend the antidumping duty investigation with respect to fresh tomatoes imported from Mexico. Effective November 1, 1996, the Suspension Agreement established a minimum import reference price covering the majority of fresh-market tomatoes exported from Mexico to the U.S The initial period of the negotiated agreement covers November 1, 1996, through September 30, 1997, with the agreement and investigation expected to be terminated no later than November 1,2001

During the first six-month period (Nov. 1996 - April 1997), the net import p[r]ice (after rebates, discounts, etc) for imported tomatoes from the signatory producers/exporters in Mexico will not be less than the reference price of $5.17 per 25-pound box or $0.2068 per pound ($0.4559/kg). The minimum reference price represents the lowest average monthly price for fresh-market tomatoes imported from Mexico during the base period. 1992-94 (Dept. of Com., Leg. Affairs, 1996, p. 8). The relationship between the minimum reference price and recent import prices is illustrated in figure 1. Since tomatoes are imported into the U.S. in several different types of packing arrangements, the Suspension Agreement contains a simple adjustment formula for converting the reference price to other packaging combinations.

Additional compliance terms are specified in the agreement to prevent circumvention. The quality of each shipment of fresh tomatoes exported to the U.S. from Mexico will conform to any applicable Department of Agriculture minimum grade, size, and/or quality import requirements in effect (p. 3). Each producer/exporter agrees to provide to the Department of Commerce verification that the price received is not less than the established reference price. "The term 'reference price' refers to the price F.O.B. Nogales/San Diego/Laredo [the port of entry] from the first handler (importer/broker) to an unrelated purchaser" (p. 8). Where imports are sold through affiliated parties, the transfer price from the importer to the affiliate must be at or above the reference price petitions filed with the ITC in 1996.

An Econometric Model of the U.S. Winter Tomato Market

Although Mexico's increased share of the U.S. fresh winter tomato market provoked the Section 202(a) and 733(a) petitions, there are many possible factors which may have contributed to this increased market share. Among these are impacts of NAFTA, the devaluation of the Peso, the deterioration of the Mexican economy after the devaluation, shifts in consumer preferences, and possible dumping by Mexican producers. An econometric model of the U.S winter tomato market was estimated to provide an empirical analysis of recent changes in the market.

The model consists of four equations: Florida inverse demand, Mexican inverse demand, Florida supply, and Mexican excess supply. The equations are presented in table 2, and variable definitions are presented in table 3. The model was estimated using the iterated three stage least squares procedure in SAS. The model employed monthly data for production years (December-May) 1990 through 1996, as well as data for December 1996 and January through March of 1997.

The Florida and Mexican inverse demand equations were specified, respectively, as:

PFLy (10 + U1 *CPIyi!* + C12 *QFLy:,* *QMXv,* +
+ «4 YR,, + a5 *PLET*y-

and,

/>,W.V = p . - r / 3 . *CPI* f/i_ *OFI.* (H/.V ~ *f,* *QFI.*
i-p. *YK* ~ *i* ~ -

where *PFL* and *PMX are* the average monthly tomato prices for Florida and Mexican growers, respectively, *QFL* and *QMX are* monthly quantities of tomatoes shipped from Florida and Mexico, respectively, *CPI* is the monthly U.S. consumer price index for food, *YR* is an annual time trend, *PLET* is the U.S. average monthly retail price of lettuce, and the DMO's are monthly 0-1 dummy variables for January through May.

In both demand equations, *CPI* and *PLET* represent the prices of other food items which may impact U.S. tomato demand. The time trend in the demand equations is included to test the contention by Mexican growers that their increased market share is due to a shift in consumer preferences away from mature green Florida tomatoes and toward vine-ripened Mexican tomatoes. The monthly dummy variables are included to capture possible seasonal changes in U.S. tomato demand. The U.S. - Mexican quantity interaction term is included to measure the impact of total tomato supply on Florida and Mexico prices. The quantity of tomatoes shipped from Florida is also included independently to test for effects of the composition of the total quantity of tomatoes on prices.

The equation for the supply of Florida tomatoes was expressed as:

V)/3 *DNAF* + S) *DMO*

where *PFL* reoresents the average monthly Florida tomato price for the previous production year, *DFW* is a dummy variable for adverse weather in Florida, *DNAF* is a 0-1 dummy variable

with a 0 value for the pre-NAFTA months, and all other variables are as previously defined.

The previous years' average grower price was used in the Florida supply equation because planting occurs before current season prices are known, and growers have limited options to increase or decrease supplies in response to current prices once the crop is planted. The weather dummy variables in the supply equation reflect supply responses to adverse growing or harvesting conditions. The NAFTA dummy is intended to capture a supply response to the conclusion of this trade agreement, and the monthly dummies allow for seasonal differences in Florida tomato supply.

The Mexican excess supply equation was expressed as:

$$QMX = \ldots + \ldots PMX + C.PDOM + \ldots EXR + \ldots MXGDP + \ldots DMW + \ldots DMO +$$

where *PMX* represents the average monthly Mexican tomato price for the previous production year, *PMX* is the current month price for Mexican tomatoes, *EXR* is the exchange rate in pesos per dollar, *PDOM* is the Mexico City wholesale tomato price, *MXGDP* is a monthly index of Mexican GDP, *DMW* is a weather dummy variable for Mexico, and all other variables are as previously defined.

The complexity of the Mexican excess supply equation reflects the ability of Mexican growers to divert output between the domestic and export markets in response to changes in supply and demand conditions both in the U.S and Mexico. The average price from the previous growing season is included as the incentive price for planting acreage. The current U.S. price for Mexican tomatoes, and the current Mexico City price for tomatoes are included to capture incentives to channel existing supplies to either market as prices in each market change. The exchange rate is included because the strong devaluation of the peso in late 1994 and 1995 resulted in an increased number of pesos going to each Mexican grower for a given number of dollars received in the U.S. market. A measure of the Mexican GDP is included to capture the impact of the state of the Mexican economy on tomatoes shipped domestically. The weather, NAFTA, and monthly dummy variables play the same role in the Mexican excess supply equation that they played in the Florida supply equation.

Results of the estimation are presented in table 4. The inverse demand equations for Florida and Mexico indicate that both prices are significantly responsive to the quantity of Florida tomatoes on the market, while the Florida price response is also significant for the interaction term between Florida and Mexican quantities. Florida tomato prices are also positively related to the genera! level of food prices. The time trend coefficient is negative and significant in the Florida equation, suggesting a decrease in the demand for Florida tomatoes. The trend coefficient is insignificant in the Mexican demand equation. The correlations between predicted and observed values of prices in the Florida and Mexico demand equations were 0.77 and 0.52. respectively.

The average price of tomatoes in the previous year had a positive and significant coefficient in the Florida supply equation, suggesting that tomato

acreage is responsive to recent prices. The negative and significant coefficient of the NAFTA dummy variable shows a decrease in Florida tomato supply that is consistent with the timing of NAFTA's implementation. The weather and four of the five-month dummies were also significant in the Florida supply equation, and the correlation between observed and predicted quantities of Florida tomatoes was 0.92.

Results for the Mexican supply equation hold the greatest interest, since they may provide insights into the large increases in Mexican tomato exports to the U.S. in recent years. The coefficient of the previous year's average tomato price was positive and significant, but considerably smaller than the coefficient in the Florida supply equation, suggesting that the acreage response may be smaller in Mexico. The current U.S. price coefficient is positive and significant, and the Mexican tomato price is negative and significant in explaining the quantity of tomatoes exported to the U.S. Both of these price responses are consistent with the diversion of Mexican tomatoes between the domestic and export markets as the markets change in each country. The exchange rate coefficient is also positive and significant in the Mexico supply equation, reflecting the increase in pesos per U.S. dollar of exports caused by the strong devaluation of the peso starting in late 1994. The weather dummy coefficient and four of the five monthly dummies were also significant, but the NAFTA dummy coefficient was not significant in the Mexico supply equation. The correlation between observed quantities of Mexican exports to the U.S. was 0.98.

The overall model results suggest that much of the recent increase in the export of Mexican tomatoes to the U.S. is attributable to responses to changes in tomato prices and to the devaluation of the peso. While the possibility of dumping is difficult to assess, given the lack of proprietary cost of production data, the variables included in the model explain a large proportion of the variation in export levels. Given the relatively low tariffs, relative to value, before and after NAFTA, the reductions in tariffs included in NAFTA seem disproportionately small relative to the observed increases in trade. NAFTA effects may be more subtle, however, if the implementation of NAFTA has increased the confidence of Mexican growers in the future stability of the U.S. export market, Mexican growers may have become more aggressive in responding to price differences in the U.S. and domestic markets.

Conclusions

Globalization of the fresh fruit and vegetable trade runs directly into the political economy of U.S. trade laws. Domestic producers of like products can use trade-remedy legislation to seek protection when prices, employment, or market share are threatened by imports. Trade-remedy legislation has become a form of "procedural protectionism" for commodity groups threatened, or perceived to be threatened by imports. Fresh winter tomato producers had tried to obtain trade-remedy legislation for their commodity without appreciable success until the Suspension Agreement was enacted in 1996.

The fresh winter tomato trade has been the center of many legal and political battles in international commerce since the late 19th century.

More recently, trade between the United States and Mexico in fresh vegetables has grown substantially and so have the number of trade disputes. Producers have responded by seeking protection under Section 202(a) of the Trade Act of 1974. The petitioners consistently cited price declines after the December 1994 peso devaluation, import surges at critical periods in the winter season, domestic price suppression below salvage value, the loss of market share, and declining economic conditions of the industry as evidence of injury sufficient for an affirmative decision. The ITC rejected the petitioners' claims of alleged injury on July 2, 1996. However, the ITC did find sufficient evidence in the antidumping petition to continue the case beyond the preliminary stage.

The U.S. and Mexican tomato growers reached an agreement on October 11, 1996, establishing a minimum import price for tomatoes at $0.2068 per pound or $5.17 per 25-pound box. The price floor is low enough to allow for competitive improvements and disposal of temporary oversupplies in the market. Allegedly, the Mexican cost of production was about $0.24 to $0.26 per pound, while Florida production costs ranged from $0.28 to $0.34 per pound When the Mexican transportation costs were added in, the wholesale price of tomatoes would be approximately equivalent, thus restoring a "level playing field."

There are also broader implications for the global fruit and vegetable trade. Thirteen U.S. trade associations opposed the agreement, as did consumer groups. Trade associations feared reprisals by Mexican importers. If the US. can establish a minimum import price, so can Mexico on sensitive commodities in its market. Consumer groups opposed the higher costs for winter season tomatoes Also, they were concerned about other food imports that compete with U.S. products. Wholesalers also expressed misgivings about an agreement which may not be enforceable in the market place. Rebates are widely used in the fresh fruit and vegetable trade, and the minimum price interferes with established trade practices. Thus, the U.S.-Mexican tomato agreement has broad implications for the entire food industry, since imports supply a large share of domestic consumption.

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Table 1. Fresh Tomatoes: Apparent U.S. Consumption and Market Shares, 1991-96

Item	1991	1992	1993	1994	1995	1996
Apparent Total Consumption (lb. x 10^6)	3,883.9	3,968.0	4,136.5	4,195.8	4,533.2	4,416.1
Consumption Per Capita lib.!	15.4	15.5	16.0	16 1	16.6	16.6
Nominal Season Avg. Price (C/lb.)	31.7	35.8	31.7	27.5	26.0	28.5
Real Season Avg. Price (C/lb. m 1992 dollars)	32.58	35.80	30.90	26.12	23.98	25.98
	Share of Apparent Consumption					
U.S. Shipments	79.5	89.1	77.7	79.2	68.6	63.2
U.S. Imports From:						
Mexico	20,1	10.2	21.3	19.8	30.0	34.2
All Others	0.4	0.7	1.0	1.0	1.4	2.6
	Value (1 ,000 dollars)					
Apparent Consumption	1271.068	1,431,389	1,390.873	1,283,505	1,270,173	
	Share of the Value of Apparent Consumption					
U.S. Shipments	---------- pGrcsnt ------			69.0		591
U.S. Imports From:						
Mexico	22.3	10.4	24.6	27.1	35.6	
All Others	1.6	1.8	3.0	3.9	5.4	
Total	23.9	12.2	27.5	310	40.90	

Source: Compiled from official statistics of Commerce and Agriculture and reported in U.S. International Trade Commission, Fresh Tomatoes from Mexico. ITC Pub. 2967, Washington. D.C.: ITC, May 1996, p. IV-4; and USDA, ERS, Vegetables and Specialities. VGS 271. May 5 1997.

Table 2: Supply and Demand Equations for Winter Tomatoes

Florida Inverse Demand:

PFL_{yl} + a, CPI_{fl} + a, QFL_{yl} $QUX_{y>}$ + a, fi«^ + a_4 ra_y * a_s $PLET_{yl}$

Mexican Inverse Demand:

*,.- = Po + f , QMX_y , $_{yl}$

$PLET$

Floncia Supply:

,., + t,

Mexican Excess Supply

-,, = <« + C, C, $MXGDP_{jt}$

$DNAF$

Table 3. Variable Definitions and Sources for Econometric Model

Endogenous Variables	Definition and Source
PFLv	Average U.S. shipper price per pound for fresh tomatoes in production year *y* and month /: *Vegetables and Specialties Situation and Outlook Yearbook,* ERS, USDA
PMXw	Value of U.S. fresh tomato imports from Mexico divided by quantity in production year *y* and month /: NAFTA Database
QFLv	Hundred million pounds of fresh market tomato shipments from Florida in production year *y* and month /: Agricultural Marketing Service Weekly Shipments, USDA,
QMXv	Hundred million pounds of fresh market tomato imports from Mexico in production year *y* and month /': NAFTA Database
Exogenous Variables	**Definition and Source**
CPI.	U.S. Consumer Price Index for Food and Beverages: U.S. Bureau of Labor Statistics, http:/stats.bls.gov/cgi-bin/surveymost
YR.	Annual time trend
PLETv.	Average U.S. retail price per pound of fresh lettuce in production year *y* and month /': *Vegetables and Specialties Situation and Outlook Yearbook,* ERS. USDA
DMOi	Monthly dummy variables for January, February, March, April, and May
PFL v i	Average U.S. shipper price per pound for fresh tomatoes in production year *y-1*
PMX ,	Average U.S. price of Mexican fresh tomato imports in production year *y- J*
EXRv.	Monthly average exchange rate, pesos per U.S. dollar: Banco de Mexico
PDOMv.	Average wholesale tomato price per pound, Mexico City, in production year *y* and month /: Servicio Nacional de Informacion de Mercados
MXGDP.	Index of Mexican GDP in production year *y* and month /: FUENTE INEGI. Sistema de Cuentas Nacionales de Mexico
DFWv.	Florida dummy variable for adverse weather
DMW	Mexico dummy variable for adverse weather
DNAF	Dummy variable for NAFTA, 0 before 1994. 1 beginning 1994.
Indicators	**Definition**
y	production year, December - May. 1990 - 1997
/	month, i - 1,..., 6 for December. ....May. respectively
	y,i extends from December 1989 (*y* = 90) to March 1997

Table 4. Results of Supply and Demand Estimation

Dependent Variable PF		Dependent Variable PMX		Dependent Variable QFL		Dependent Variable QMX	
Indep. Variable	Coefficient (Std. Dev.i	Indep. Variable	Coefficient (Std. Dev.)	Indep. Variable	Coefficient (Std. Dev.i	Indep Variable	Coefficient (Std. Dev.)
intercept	-6.9047**	Intercept	1.7888	Intercept	1.0485**	Intercept	-0.6002
	12.8145)		(2.4980)		(0.3943)		(0.6364)
CP	0.0631**	CP	-0.0070	LAPFL	3.1738**	LAPMX	0.1104*
	(0.0221)		(0.0196		(1.0421)		(0.0638)
QFL'Q	-0.2317**	QFL*Q	-0.0828			PMX	1.2982**
MX	(0.0659)	MX	(0.0617				(0.4495)
QFL	-0,1530**	QFL	-0.1676**		-	EXR	0.1787**
	(0.0671)		(0.0623)				(0.0288)
Year	-0.2228**	Year	0.0161		-	PDOM	-0.1469*
	(0.0767)		(0.0680)				(0.0734)
PLET	-0.3603	PLET	-0.2770			MXGDP	0.0012
	(0.2189)		(0.1915)				(0.0063)
	-			DFW	-1.2597**	DMW	-0.8209**
					(0.1945)		(0.1164)
	-			DNAF	-0.3858"	DNAF	-0.0517
					(0.1042)		(0.0789I
DJAN	0.0702	DJAN	0.0161	DJAN	-0.4860**	DJAN	0.5821**
	(0.1058		(0.0982)		(0.16041		(0.1097)
DFEB	-0.0459	DFEB	-0.0559	DFEB	-0.8019**	DFEB	0.9358**
	(0.1 160		(0.1075)		(0.1604)		(0.1213)
DMAR	0.0422	DMAR	-0.0489	DMAR	-0.8576**	DMAR	1.1212**
	(0.1 179)		(0.1095)		(0.1585)		(0.0989)
DAPR	0.0989	DAPR	0.1909*	DAPR	0.2609	DAPR	0.6688**
	(0.1039)		(0.0960)		(0.16651		(0.1270)
DMAY	-0.0466	DMAY	0.1 148	DMAY	0.3137*	DMAY	0.0162
	(0.1034)		(0.0944)		(0.1721)		(0.0987)
Fit'	0.77		0.52		0.92		0.98

[1] significant at 10% level, ** significant at 5% level Correlation between observed and predicted values of dependent variables