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Enforcement of Regulations Under Trade Agreements: Impacts on Competitiveness

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Florida and Mexico have been the major competitors in supplying the winter fresh-vegetable market in the United States and Canada for many years. Together they account for more than 95 percent of the winter fresh-vegetable market (including tomatoes, bell peppers, green beans, cucumbers, squash and eggplant in the winter months December to April). Several economic and legal battles have taken place in the market for fresh vegetables since Mexico became a major supplier. The filing of an anti-dumping petition by Florida growers of fresh tomatoes highlighted the "Great Tomato War" of the late 1970s. The Florida tomato industry withdrew that petition at the urging of the Presidential Administration of Jimmy Carter. The 1980s was a period when competition was less intense because of voluntary export restraint (VER) policies followed by the Mexican government. Mexico managed their share of the market by varying the minimum quality standards they imposed on fresh produce exported to North American markets. These VERs were kept in place until after the North American Free Trade Agreement (NAFTA) was implemented in 1994. Competition has since become even more intense. The U.S. tomato and bell pepper industries filed an anti-dumping petition with the U.S. Department of Commerce in March, 1996.

The winter fresh-vegetable industry has grown significantly over the last fifteen years with shipments of tomatoes, bell peppers, cucumbers, squash and green beans growing by more than 47 percent since 1981 (Table 1). The decade of the 1980s can be referred to as the golden age of the winter fresh-vegetable industry with growth in output and revenues resulting from the greatly expanded demand for fresh vegetables in the North American market. Mexican growers were able to capitalize on this growth in demand during the 1980s by increasing their exports by 53.6 percent while maintaining their market share within 2 percent of half the market.

The 1990s have been different. Total shipments changed very little, expanding only 1.0 percent from 2.61 billion pounds in 1990-1991 to 2.64 billion pounds in 1994-1995. Mexico's market share expanded significantly, however, from 47.1 percent in 1990-1991 to 65.0 percent in 1994-1995, the highest market share since the late 1970s.

Several factors are changing the nature of competition in the winter fresh-vegetable market. Most of these factors relate to the ability of Florida to compete with Mexico in supplying winter fresh vegetables. These include the North American Free Trade Agreement (NAFTA), unlevel government regulation and the changing macroeconomic

Table 1. Total U.S. Shipments, Mexican Imports and Market Shares for Tomatoes, Bell Peppers, Cucumbers, Eggplant, Squash, Cucumbers and Green Beans, October to June Market Window

Year	U.S. Shipments	Mexican Imports	Mexican Market Share
	(-----10,000 pounds -----)		(%)
1980/81	179,144	88,449	49.4
1984/85	233,744	120,669	51.6
1989/90	261,915	135,859	51.8
1990/91	276,402	130,167	47.1
1994/95	264,621	171,872	65.0

Source: USDA AMS, Fruit and Vegetable Division, Market News Branch.

situation in Mexico. Each of these provides Mexico with added advantages in the winter fresh-vegetable market.

North American Free Trade Agreement

NAFTA is a trilateral agreement between the United States, Canada and Mexico that has the intent to provide a free trade market area between the three participating countries. NAFTA, implemented in January, 1994, contained several provisions with the key points being: 1) the elimination of tariff and non-tariff barriers, 2) elimination of investment barriers, 3) protection of intellectual property, 4) the opening of the transportation sector between the three countries and the strengthening of regulations to protect the environment along the borders.

Elimination of tariff and non-tariff barriers was the key provision debated when NAFTA was being discussed in Congress. Tariffs were being applied by both countries as taxes on products entering the countries. Non-tariff barriers included licenses that

were required to import products into Mexico. Each of these protections served as a trade diversion tool by adding cost to the product being imported.

Most analysts considered tariffs to be the most significant barrier in the flow of product across the borders. While some analysts believed NAFTA would have a significant impact on trade (VanSickle et al.), most who discussed vegetables generally believed NAFTA would have a small impact on trade in vegetables because of the relative low cost of the tariff on imported produce (Cook et al.; Congress of the United States). With most of the debate surrounding tariffs, the impact of NAFTA was expected to be minimal, but mostly falling on Florida in the fresh vegetable industry.

Another oversight in the debate about tariffs and NAFTA was the impact that removal of tariff and non-tariff barriers would have on the grain and oilseed industries in Mexico, and the substitution in products grown by Mexican growers as they lost market share to U.S. growers of grains

and oilseeds. It was widely believed by both United States and Mexican analysts that U.S. growers were more efficient in growing grains and oilseed crops. With Mexico devoting several thousand acres of land to these crops, those growers looked to fresh vegetables as a possible alternative.

A second change taking place within NAFTA is the opening of the transportation sector. Produce imported from Mexico currently is harvested and packed in the growing area and then shipped to the border to be marketed by distributors located at the border. After inspection by Mexican and U.S. customs agents and by the Animal and Plant Health Inspection Service (APHIS), the produce is transported across the border where it must be off-loaded into a distributor's warehouse. Distributors take responsibility for selling the produce in the North American market.

The transportation provisions of NAFTA allow trucks to transport goods anywhere within the bordering states beginning in 1996. In the year 2000, trucks will be allowed to deliver anywhere within the participating countries provided the trucks meet the minimum safety standards of the country. These provisions represent significant change in how produce may be handled when fully implemented. Current regulations require all produce to be off-loaded within the eighteen-mile free traffic border zone between the United States and Mexico. These provisions offer the opportunity for direct delivery from the growing area to wholesale markets, eliminating a step currently required in the marketing process. The provisions have already met obstacles within the United States as the United States denied entry of Mexican trucks to bordering U.S. states in 1996 because they did not meet minimum U.S. standards for safety.

Negotiators are currently working on means for allowing the first phase of direct transport within border states. It is expected that transparent borders will become a reality by 2000 as minimum safety standards become more of the norm for Mexican trucks.

The NAFTA provision for elimination of investment barriers was intended to make it safer and easier to invest in Mexico. This provision was aided by policy changes made in Mexico to encourage private investment. The first was constitutional changes in Mexico that made it illegal to expropriate and reallocate land to smaller landholders. It was not uncommon for large landholders to have their land expropriated by the government to be given to small farmer *ejido* groups. Previous law also limited individually owned irrigated land to 100 hectares. Large landholders got around this constraint by registering land in the name of several different family members. New laws make it easier for individuals to own larger land tracts. The laws also make it easier for foreign investors to own land in Mexico.

The Mexican government also encouraged investment in the agricultural sector. As a result, several United States and other foreign investors moved into the fresh fruit and vegetable sector. The result of this investment has been the adoption of new technologies and hybrid varieties that have increased yields for Mexican vegetables to nearly equal those of Florida growers. This increased productivity has resulted in significant savings for Mexican growers.

As a result of NAFTA, significant savings in costs are being made available to Mexican growers. An examination of the potential savings from NAFTA reveals significant savings Mexican growers may receive as a direct result of NAFTA. NAFTA will impact costs for Mexican growers by eliminat-

Table 2. Potential Savings from NAFTA for Mexican Vegetable Growers

Vegetable	Tariff	Transportation	Yield	Total
	(\$/carton)			
Tomatoes	\$0.46	\$0.48	\$0.93	\$1.97
Peppers	\$0.70	\$0.21	\$0.93	\$1.84
Cucumbers	\$1.39	\$0.49	\$0.28	\$2.16
Eggplant	\$0.40	\$0.11	\$0.66	\$1.17
Squash	\$0.46	\$0.80	\$0.84	\$2.10

Source: Jordan and VanSickle

Table 3. Total Savings Expected by Mexican Growers Post-NAFTA

Vegetable	Current Cost	Total Savings	Percent Savings
	(\$/ctn)	(\$ctn)	(%)
Tomatoes	\$7.16	\$1.97	27.5
Bell Peppers	\$8.15	\$1.84	22.6
Cucumbers	\$9.62	\$2.16	22.5
Eggplant	\$6.45	\$1.17	18.1
Squash	\$11.08	\$2.10	19.0

Source: Jordan and VanSickle

ing the tariff currently imposed, savings in marketing and handling costs as direct shipment from growing areas to North American markets replaces the current off-loading of produce at the border, and savings from increased productivity as increased investment increases productivity in Mexico relative to Florida (Table 2). These savings account for 18.1 to 27.5 percent of pre-NAFTA costs for bringing Mexican produce into the U.S. market (Table 3).

These savings were to be phased in to allow U.S. growers time to make adjustments to changes in competition resulting

from NAFTA. As a result of NAFTA negotiations, tariffs are being phased out over a transition period ranging from eight to fifteen years depending on the product. Most fresh vegetables have ten-year transition periods with a tariff reduction of 10 percent occurring each year after NAFTA's implementation in 1994. Transportation provisions were to be phased in by opening neighboring states to across-the-border direct delivery in 1996, and delaying the opening of the entire countries until the year 2000.

The most significant impact of NAFTA to date has been in the investment area. Invest-

Table 4. Monthly Exchange Rates and Wholesale Price Index for Mexico—September, 1994, to April, 1995

Month	Exchange Rate	Wholesale Price Index
September	3.399	161.3
October	3.415	161.9
November	3.442	163.0
December	3.930	164.7
January	5.513	173.9
February	5.685	180.9
March	6.701	192.4
April	6.299	208.9

Source: International Monetary Fund

ment in the Mexican vegetable industry has been significant since NAFTA was implemented. Part of this investment has been the result of NAFTA provisions and changes in Mexico's treatment of foreign investment, but a significant amount of investment has been borne by Mexican growers and shippers. These industry participants have used NAFTA as a signal to more open trade with the United States and have invested in this industry to capitalize on a sector in which they anticipate a clear advantage in the future. The savings shown in Table 3 are to be realized when NAFTA is fully implemented, but the savings to investment which bring Mexico's productivity up to the same level as Florida growers have already occurred. No transition occurred and Mexican growers have already realized these savings on most crops. One special concern in this area of technology development is that the three largest seed companies for fresh vegetables are now owned by Mexican principals.

Mexico Macroeconomic Environment

The Mexican economy was on a path to improvement until recent peso devaluations beginning in November, 1994. Inflation in Mexico was in the single digits and most analysts predicated their predictions about NAFTA's impact on the premise that economic recovery in Mexico would continue on this path of improvement.

November, 1994, was the beginning of a policy shift in Mexico. The new government of President Zedillo devalued the peso on an initial schedule of 15 percent to improve the balance of trade for Mexico. Devaluation of the peso would lead to imports becoming more expensive and exports becoming cheaper in international markets, improving the balance of trade for Mexico. The original plan for devaluing the peso by 15 percent was quickly exceeded as the peso devaluation equaled 97 percent from September, 1994, to March, 1995 (Table 4).

Table 5. Production and Marketing Costs for Mexican Tomatoes

Item	(\$/25 lb. ctn)
Preharvest Costs	2.86
Harvest & Postharvest Costs	4.30
Total Costs	7.16

Source: VanSickle et al.

The effect of the devaluation on production costs for Mexican produce growers was significant. Table 5 shows the production costs for growing tomatoes in the 1990-1991 season. The dynamics of the devaluation is what had the greatest impact on vegetable trade over the season. Most economists agree that devaluation of a currency has little effect on trade flows over the long run because devaluation leads to inflation which offsets any cost advantages artificially created by the devaluation. There are short-run impacts, however, that can lead to long-run implications. Inflation does not occur at the same time that devaluation occurs. The dynamics of the devaluation in 1994 and 1995 created advantages to Mexican growers as they purchased inputs with pesos prior to the devaluation and then were able to sell in international markets where the returns to cheaper pesos created increased returns to their crops.

Table 6 shows the pesos expended to grow tomatoes in Mexico where pre-harvest inputs were purchased prior to the devaluation and post-harvest inputs were purchased at the time of harvest. Costs realized for the 1990-1991 season were used to demonstrate the effect devaluation has on costs for Mexican growers. The exchange rate at the time of harvest was used to calculate the pre-

harvest cost in pesos. Post-harvest expenses were calculated by first inflating post-harvest costs by the inflation in the wholesale price index over the production season period and then using the exchange rate at the time of harvest to calculate post-harvest costs in pesos.

The advantage created by the devaluation is shown in Table 7. Prior to devaluation, total costs of production and marketing Mexican tomatoes in North American markets was \$7.16 per carton. Total costs after the devaluation for each planting month from September to December ranged from a low of \$4.07 per carton for the November planting, which was harvested and sold in March, to a high of \$5.19 per carton for tomatoes planted in December and harvested and sold in April. The devaluation created a savings in production and marketing costs for Mexican growers ranging from 27.5 percent to 43.7 percent.

The result of the devaluation was that it created a short-run advantage for Mexican growers that resulted in the North American market being the market of choice. Inflation in Mexico did not keep pace with the devaluation and Mexican consumers would not compete with North American markets to consume most of the fresh winter vegetables they normally consume from their commer-

Table 6. Cost of Producing Tomatoes in Mexico and Marketing in the U.S. Market, 1994-1995 Production Season, Planting Months September to December

Cost Item	Planting Month			
	September	October	November	December
Pre-Harvest	9.72	9.77	9.85	11.24
Harvest/Post-Harvest	15.76	16.41	17.47	21.44
Total	25.48	26.18	27.32	32.68

Table 7. Cost Savings from the Devaluation of the Peso for Mexican Tomatoes Sold in the United States

	Plant-Harvest Months			
	Sept.-Jan.	Oct.-Feb.	Nov.-Mar.	Dec.-Apr.
Total Cost				
pesos/ctn.	25.48	26.18	27.32	32.68
\$/ctn.	4.62	4.60	4.07	5.19
Savings				
\$/ctn.	2.54	2.56	3.09	1.97
%	35.50	35.70	43.70	27.50

cial growers. It was estimated that Mexico kept as much as 30 percent of the produce grown by export growers in the northwest Mexican growing areas. The devaluation gave a large incentive to divert that produce into the U.S. market, even at much lower prices. Without any increase in acreage, the Mexican vegetable industry stood poised for a possible 30 percent increase in exports with the devaluation dynamics of the 1994-1995 season. This, combined with the improved productivity and improved quality of product from heavy investment in the Mexican vegetable industry, caused large increases in the exports of Mexican fresh vegetables to North American markets.

The impact of this devaluation resulted in surges of exports over the 1994-1995 season. Table 8 demonstrates the effect the devaluation had on Florida growers of fresh tomatoes. Over the period January 7, 1995, to February 4, 1995, the volume of shipments from Florida was down slightly as a result of heavy fall rains. Mexico imports were running about the same pace as previous years until the week of February 11, 1995, when Mexican imports surged by 43.5 percent over the previous week. Prices for Florida tomatoes dropped by 54.2 percent from the season high of \$11.78 per carton the week of February 4 to \$5.39 per carton

Table 8. Impacts of Surges in Mexican Imports on Florida Tomato Growers, 1994-1995 Season

Week	Florida	Mexico	Florida
Ending	Volume	Volume	Price
	(-----40,000 pounds -----)		(\$/25 lb. carton)
Jan. 7	576	652	\$9.44
Jan. 14	540	883	\$11.14
Jan. 21	497	1,106	\$10.62
Jan. 28	416	919	\$10.65
Feb. 4	415	1,226	\$11.78
Feb. 11	492	1,760	\$ 5.39
Feb. 18	503	1,583	\$ 4.67
Feb. 25	554	1,147	\$ 5.13
Mar. 4	452	1,253	\$ 5.62
Mar. 11	419	942	\$ 6.72

Source: VanSickle

the following week of February 11. These data demonstrate the dramatic effect a surge in volume can have on prices received by growers. Research has shown that shipments from Mexico have effects on prices in Florida, regardless of the destination market for those shipments (Jordan and Van-Sickle). Table 8 demonstrates this effect in dramatic fashion. There can be no doubt that the heavy volume from Mexico caused prices to decline to well below the cost of production for Florida growers.

Government Regulations

Another advantage being afforded Mexican growers is in the area of government

regulation. The U.S. government has increased the regulation of several inputs that are used in the production of fresh produce. Land, labor, water and pesticide use are all heavily regulated in the United States

A prime example of the effect these regulations have on U.S. growers is the imminent ban on the use of methyl bromide by U.S. growers. Methyl bromide is a broad spectrum pesticide used as a soil fumigant for many vegetables grown in the United States. This fumigant allows U.S. growers to intensively farm land, growing as many as two crops each year on the same plot of land. The Montreal Protocol, an international agreement between member nations to oversee the production and trade of ozone depleting substances, adopted an ozone

depletion potential (ODP) for methyl bromide of 0.7 at their 1993 meeting. Parties to the Montreal Protocol agreed to freeze the use of methyl bromide at 1991 baseline levels. The 1990 U.S. Clean Air Act requires substances with ODPs higher than 0.2 to be phased out of use by the year 2000. Because of limited substitutes to methyl bromide, the Environmental Protection Agency gave the industry until the year 2001 to use methyl bromide. Developing countries will have until the year 2010 to use methyl bromide within the rules of the Montreal Protocol. Mexico is classified as a developing country within this agreement.

Spreen et al. indicated that banning methyl bromide will result in a 30 to 40 percent decline in yields for many critical vegetable crops (tomatoes, bell peppers, squash, eggplant, second crop watermelons, and strawberries). The study estimated that a ban on methyl bromide would result in a decline of \$636 million in f.o.b. revenues to Florida growers. Tomato production will fall by 60 percent, bell pepper production will fall by 63 percent and eggplant production will cease in Florida. The winner in this regulation is Mexico which will increase production and sales to the North American market of tomatoes by 80 percent, bell peppers by 54 percent and eggplant by 123 percent. Mexico has been expanding its use of methyl bromide in recent years and will capitalize on increasing U.S. government regulations when methyl bromide is banned from use by U.S. growers.

The results also indicated that U.S. growers will not be the only parties to paying the bill for this regulation. Product availability to U.S. consumers will fall by 27 percent and wholesale prices will rise by 8.9 percent. Employment in Florida will fall by 13,345

jobs and the total impact on the Florida economy will be more than \$1.04 billion.

Market Share Changes

Changes in the climate for competition in the winter fresh-vegetable industry have already had significant impacts on Florida growers. Table 9 shows shipments and market shares for Florida and Mexico in the North American market from the 1989-1990 to 1994-1995 production seasons. Mexico set new highs for exports to the North American market in the years following implementation of NAFTA. The 1991-1992 season was a year of production problems for Mexico, but their exports of tomatoes have increased 135 percent since that low.

Florida and Mexico account for more than 95 percent of all U.S. shipments in the season of December to April. Changes in Mexican shipments and market share have been even more profound in this period, with exports increasing 208 percent from the 1991-1992 season to 1994-1995 (Table 10). The 1994-1995 total of 866 million pounds from Mexico exceeded the previous high of 617 million pounds in 1993-1994 by 40.3 percent. Mexico's market share increased from a low of 16.1 percent in 1991-1992 to 62.2 percent in 1994-1995. It is clear that dramatic changes have occurred in the competitive structure of the winter fresh-vegetable industry with Mexico increasing their exports to, and market share of, the U.S. market at the expense of Florida growers.

Failures of NAFTA Regulations

The winter produce industry is important to Florida and U.S. agriculture. Fresh vege-

Table 9. Tomatoes: Shipments and Market Shares for Florida and Mexico in the U.S. Market, October to September Market Window, 1989-1990 to 1994-1995

Season	Shipments			Market Shares	
	Florida	Mexico	Total	Florida	Mexico
	(-----1,000,000 lbs. -----)			(-----%-----)	
1989/90	1,308	810	3,214	40.7	25.2
1990/91	1,309	736	3,175	41.2	23.2
1991/92	1,699	355	2,976	57.1	11.9
1992/93	1,428	782	3,410	41.8	22.9
1993/94	1,289	834	3,341	38.5	24.9
1994/95	975	1,236	3,404	28.6	36.3

Source: USDA AMS, Fruit & Vegetable Division, Market News Branch

tables contribute more than \$1 billion in f.o.b. value to Florida growers. Recent changes have resulted in significant losses to Florida growers and to those who supply inputs to those growers. Many growers are on the financial edge and stand to lose farms and homes if they continue to lose income at the pace they have lost over the last two years.

Regulations adopted to help domestic producers cope with increased competition resulting from NAFTA have failed in their intent. Safeguards provided within NAFTA to allow domestic growers to adjust to a new climate of competition have not provided the protection promised.

Several changes are needed to allow Florida growers to compete or to gracefully find alternative enterprises for their resources. Snap-back provisions were part of NAFTA that allowed countries to snap back tariffs to pre-NAFTA levels if imports exceeded a NAFTA-negotiated Tariff Rate Quota (K). These TRQs were set at levels sufficiently high to allow larger-than-average

exports without the higher snap-back tariffs being implemented. The large and rapid devaluation of the peso was not anticipated, however, when NAFTA was negotiated. Snap-back tariffs do not offset advantages provided by the devaluations in the peso that occurred over the last two years. These snap-back provisions cannot and will not work unless they are pegged to the exchange rate. The devaluations that have occurred over the 1994-1995 and 1995-1996 season have led to increases in Mexican exports because they divert domestic product into international markets. That diversion led to returns far below the cost of production for Florida growers, simply because the devaluation provided an artificial advantage to Mexican growers.

A second safeguard provided by NAFTA was the 1994 amendment to the U.S. Trade Act of 1974 that allowed producers of perishable products to seek provisional relief in a shorter time frame than the typical one year it takes in most anti-dumping petitions (section 202(b)).

Table 10. Tomatoes: Shipments and Market Shares for Florida and Mexico in the U.S. Market, December to April Market Window, 1989-1990 to 1994-1995.

Season	Shipments			Market Shares	
	Florida	Mexico	Total	Florida	Mexico
	(-----1,000,000 lbs. -----)			(-----%-----)	
1989/90	681	560	1,276	53.4	43.9
1990/91	838	561	1,422	58.9	39.5
1991/92	1,004	200	1,246	80.6	16.1
1992/93	829	610	1,462	56.7	41.7
1993/94	782	617	1,423	55.0	43.4
1994/95	511	866	1,393	36.7	62.2

Source: USDA, AMS, Fruit and Vegetable Division, Market News Branch

This safeguard was tested by Florida tomato growers in the 1994-1995 season when Mexican exports caused prices to fall well below the cost of production. The International Trade Commission ruled against that petition when it determined under existing rules that the case must be decided on a national basis for year 'round production of all tomatoes, including greenhouse, plum, cherry and large round tomatoes grown in all areas of the United States.

This ruling makes it extremely difficult to gather the data necessary to prove damage, and renders the intent of the amendment, which was to allow for quick determinations on perishable products, almost useless to seasonal industries.

A final consideration for policymakers is the development of a farm program that will give growers the ten-year transition period promised when NAFTA was passed. Supporters of NAFTA believed that the ten-year transition period would allow growers to

gracefully adjust to new competitive pressures, or to find alternative ways to use their resources.

The increased investment in Mexico combined with the advantages provided by devaluation have caused the full effect of NAFTA to be felt within two years of its implementation. These growers need ten years to make necessary adjustments or may be forced into very ungraceful bankruptcies.

A farm program giving these growers the full ten years promised when NAFTA became law would give them a chance to salvage capital many have taken a lifetime to accumulate.

Conclusions

The winter vegetable industry has undergone significant changes as a result of NAFTA. NAFTA shifts the comparative advantage in the winter fresh-vegetable industry toward Mexico at the expense of

Florida growers. Changes are occurring that caused large increases in Mexican exports over the last two years, but NAFTA's removal of market uncertainty may also be adding to increased Mexican exports. Mexico operated with voluntary export restraints over the decade of the 80s when both Florida and Mexico benefitted from increases in demand for fresh produce without extended periods of depressing prices like those of the last two years. Mexico removed most of their restraints in the 1994-1995 season and large increases in exports followed, leading to prices well below the cost of production for Florida growers. NAFTA and the devaluations in the peso have resulted in large losses in the Florida winter fresh-vegetable industry.

Many growers have already quit growing winter vegetables because of the low returns experienced in recent years. They have approached farming from an asset preservation perspective, trying to hold on to assets they have accumulated by being efficient growers of fresh vegetables. Some of the packers have increased their production to keep their packinghouses operating at efficient capacity, but some of those packinghouses are facing closure if returns cannot be improved.

The Florida winter fresh-vegetable industry is facing the toughest battle it has faced over the last several decades. Regulations adopted to provide safeguards to increased imports have failed to provide the protection intended by policymakers. Packinghouses are closing and farmers are being forced to find other means of generating income. Without help from policymakers to provide a more graceful transition to free trade with a level playing field, the agricultural industry

in Florida is facing one of the largest structural changes it has ever faced.

NOTES

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