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National and International Factors in Pickle Markets

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1. Introduction

This report presents global and domestic information regarding production, trade and market developments for pickled cucumbers. U.S. cucumber production and trade are commonly divided into two categories: fresh and pickling. Michigan is the largest producer of pickling cucumbers in the country, accounting for 18 percent of total U.S. production. Like many agri-food industries, this processed product sector has gone through numerous changes in the past decade which have influenced production and marketing trends, and assessing the influence of individual factors is difficult. However, using production and trade data it is possible to infer some possible drivers of trends and outcomes for the industry.

Year-round supply from other countries, quality products at more competitive prices, changing consumer preferences, and more service-oriented business models have introduced new marketing structures likely to continue driving future trade and production patterns. The information presented in this report is important in order to assess competitiveness and develop a broad and well-informed perspective for the pickling industry in Michigan.

The report is structured as follows: first, we present information on global volume produced in the period 1992 to 2004, including rates of change in production and shares of total world production by country. Second, we compare total acreage trends in the U.S and production and acreage trends in Michigan during the late 1990s and early 2000s. Third, we highlight information on pickled cucumber import and export volumes by country. Finally, we present a brief description of historic trends in food marketing and globalization that are likely to continue influencing the pickling industry in the future.

[1] Martinez is a research specialist, Thornsbury is an assistant professor and Nagai is graduate student in the Department of Agricultural Economics at Michigan State University.

2. Global and Domestic Cucumber Production

Cucumbers are the fourth most widely cultivated vegetable crop in the world after tomatoes, cabbage, and onions (Shetty and Wehner, 2002). China is the leader in volume produced with almost two-thirds of all world production between 2000 and 2004.[2] At a distant second place is Turkey with approximately five percent of total production, followed by Iran (3.6 percent), the U.S. (2.7 percent) and Japan (1.9 percent).

From 1995 to 1999, China increased average production by 9.4 percent annually, and from 2000 to 2004 annual production increased by 6.5 percent annually (Table 1). Average volume produced went from 31.2 billion pounds during 1995 to 1999, to 51.3 billion pounds from 2000 to 2004. On the other hand, the U.S. average volume was stagnant at 2.3 billion pounds throughout the late 1990s and 2000s. The annual rate of change was negative two percent during the period 2000 – 2004. Average volume in Turkey and Iran increased from the late 1990s and early 2000s, annual rate of change was positive for both countries between 1995 and 1999. Despite rapid production growth in Turkey during the first period, like the U.S. average rate of change was negative after 2000. Japan showed a declining tendency in both average volume and rate of change over both periods. In aggregate, world production levels grew 4.4 to 6 percent annually indicating some countries (i.e. China, Iran) were able to provide a bigger volume and increase their share, while others (i.e. Turkey, U.S., Japan) were capturing smaller shares even while total world volume was expanding.

Table 1. World Estimated Cucumber and Gherkin[3] Production

Country*	Average Annual Production		Average Annual Rate of Change		Average Share of Global Production	
	1995-1999	2000-2004	1995-1999	2000-2004	1995-1999	2000-2004
	---------Billion Lbs--------		----------%----------			
China	31.2	51.3	9.4	6.5	52.1	60.9
Turkey	3.1	3.9	7.2	-0.6	5.2	4.6
Iran	2.7	3.0	1.5	1.1	4.4	3.6
U.S.	2.3	2.3	2.5	-2.0	3.8	2.7
Japan	1.7	1.6	-1.9	-2.2	2.9	1.9
World	*60.0*	*84.2*	*6.0*	*4.4*		

* Selected countries currently represent approximately 70 percent of total world production
Source: FAOSTAT Data, 2005

In the U.S., pickling cucumbers are produced throughout the year in various locations (Lucier and Lin, 2000). National pickling cucumber production ranged from approximately 1.3 billion pounds in 1994 to 1.2 million pounds in 2004, with relatively small variations from year-to-year (Figure 1). According to USDA forecasts, 2005 production was expected to increase to 1.3 billion pounds. Production of pickling

[2] Information on global production presented in this section does not distinguish between fresh and pickling cucumber production.
[3] In some countries the word "gherkin" refers to small cucumbers (FAO, 1981)

cucumbers is constrained by the demand of briners and the processing capacity. There has been slightly more variation in U.S production of cucumbers for the fresh markets. Between 1994 and 1999, production increased from 941 million pounds to 1.2 billion pounds, but has since declined to 1 billion pounds in 2004 and was not expected to change in 2005.

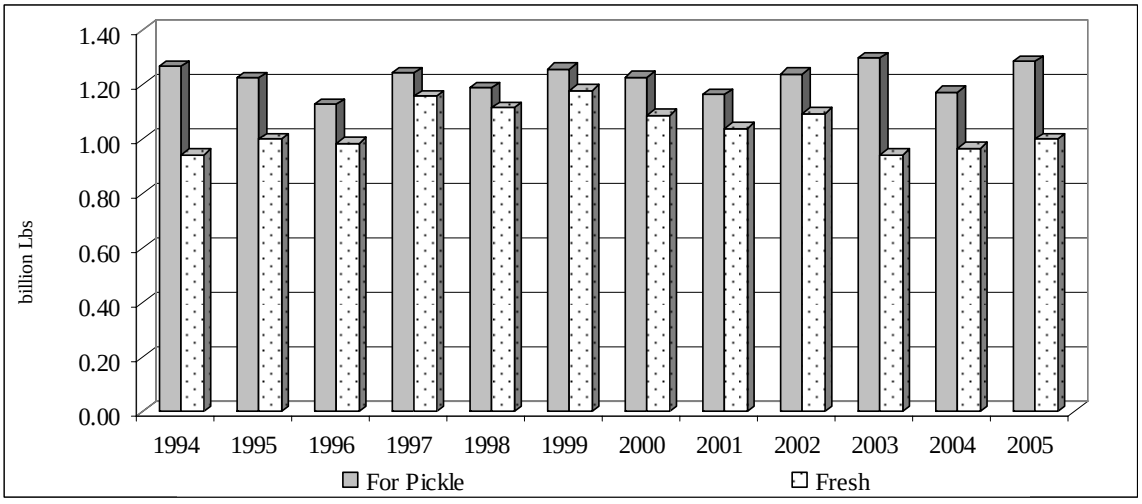

Figure 1. U.S. Cucumber Production, 1994-2005
Source: USDA, 2004

Michigan produces approximately 18 percent of total pickling cucumber tonnage in the U.S. (Lucier and Lin, 2000). In 2005, Michigan accounted for 33 percent of national area planted to cucumbers for pickles, followed by North Carolina which accounted for 14 percent of total area planted. Other relatively important states in term of total acreage planted to pickling cucumbers were Texas, Florida, Wisconsin, South Carolina, Ohio and Indiana. Although smaller volumes are produced in the remaining 42 states, in aggregate they account for 28.1 percent of the national total area (Table 2). In terms of productivity, Michigan has not increased its efficiency in production; the share of national area is greater than the share of national production. Other states (e.g., Florida) have increasingly shown higher proportions of land suited to production of cucumbers, increasing their competitive advantage in cucumber production.

In the U.S, 79 percent of the area planted to cucumber for pickles was planted under contract in 2005 (USDA, 2006). Processors in some states like Texas and Indiana managed their entire production under contracts. Others, such as those in Wisconsin, South Carolina, and Ohio, contracted more than 90 percent of their pickling cucumber area. Michigan and North Carolina processors contracted 69 and 64 percent of their 2005 total pickling cucumber area respectively (Table 2).

Comparing contracts signed in 2005 and expectations for 2006, variation was greater in Florida, with an increase of 570 percent under contract, followed by Texas with thirteen percent increase, Michigan with six percent increase and Wisconsin with four

percent increase in area contracted. (Table 2) All the other states showed a decrease in area under contract during 2006 (USDA, 2006).

Taken together, trends in production levels and contract intentions are indicative of an industry that is stagnant. The overall growth rate of six percent under contract in the country indicates a rather slow upward trend in product coved through this mechanism. The negative percentage in growth rate in North Carolina, South Carolina, Ohio, Indiana and the other states group indicate a rather pessimistic planning intention by producers in these states and the expanding share of production under contract in Florida indicates there may be significant pressure towards concentration of production in more efficient states.

Table 2. U.S. Cucumber for Pickle Total Area Planted, Total Area under Contract, and Contract Intention, 2005 – 2006

	2005			**2006**	
	Area Planted			**Planting Intentions**	
State	**Total**	**Contract**	**Share under contract**	**Contract**	**Change in 2005 - 2006**
	--------Acres --------		**--------%------**	**-Acres-**	**----------%---------**
Michigan	38,500	26,500	69	28,000	6
North Carolina	16,200	10,300	64	9,000	-13
Texas	8,000	8,000	100	9,000	13
Florida	6,500	1,000	15	6,700	570
Wisconsin	4,700	4,500	96	4,700	4
South Carolina	4,800	4,700	98	4,600	-2
Ohio	3,400	3,200	94	2,900	-9
Indiana	1,700	1,700	100	1,500	-12
Other States	32,800	32,000	98	30,600	-4
U.S.	*116,600*	*91,900*	*79*	*97,000*	*6*

Source: USDA, 2006

This picture is somewhat more optimistic when Michigan production patterns are considered. Total acreage has shown a small, but steady increase between 1995 and 2004. Generally, since 1995 area and production in Michigan have been relatively stable. Total planted area averaged 30,000 acres and production 305 million pounds, with an average yield of about 10 thousand pounds per acre (Table 3). According to USDA, the planting intentions under contract for 2006 are expected to increase by six percent, which means a contract area of 28,000 acres planted to pickling cucumbers (USDA, 2006).

Table 3. Michigan Pickling Cucumber Acreage, Production, and Yield, 1995-2004

Year	Area		Production	
	Planted	Harvested	Total	Yield
	----------Acres----------		(Million Lbs)	(1,000 Lbs/Acre)
1995	28,000	26,000	286.0	11
1996	28,000	26,000	275.6	11
1997	27,000	26,000	270.4	10
1998	27,000	26,000	260.0	10
1999	27,000	26,500	318.0	12
2000	31,000	30,000	360.0	12
2001	31,000	29,500	250.8	9
2002	35,500	34,500	317.4	9
2003	34,000	33,500	361.8	11
2004	35,000	34,500	345.0	10

Source: MDA, 2004

The marketing channel for pickling cucumbers in Michigan includes a wide variety of relationships between producers, briners, packers, retailers and food service. Figure 2 presents schematic of the supply chain for pickling cucumbers.

Generally, producers sign contracts with briners or packers and do not sell directly to food service of retailers. Approximately 90 percent of pickling cucumber production in Michigan is processed by several packers within the state. Primary contractors include Heinz Co., Dean Foods, Harrison Packing Company, Freestone Pickle Company, Cool Crisp, and Hausbeck (PPI, 2006). Other packers are located as far away as northern Ohio and Illinois. However, it is not common for cucumbers to be transported long distance for processing. As a general rule, pickling cucumbers are processed within a 200-mile radius of the farm.

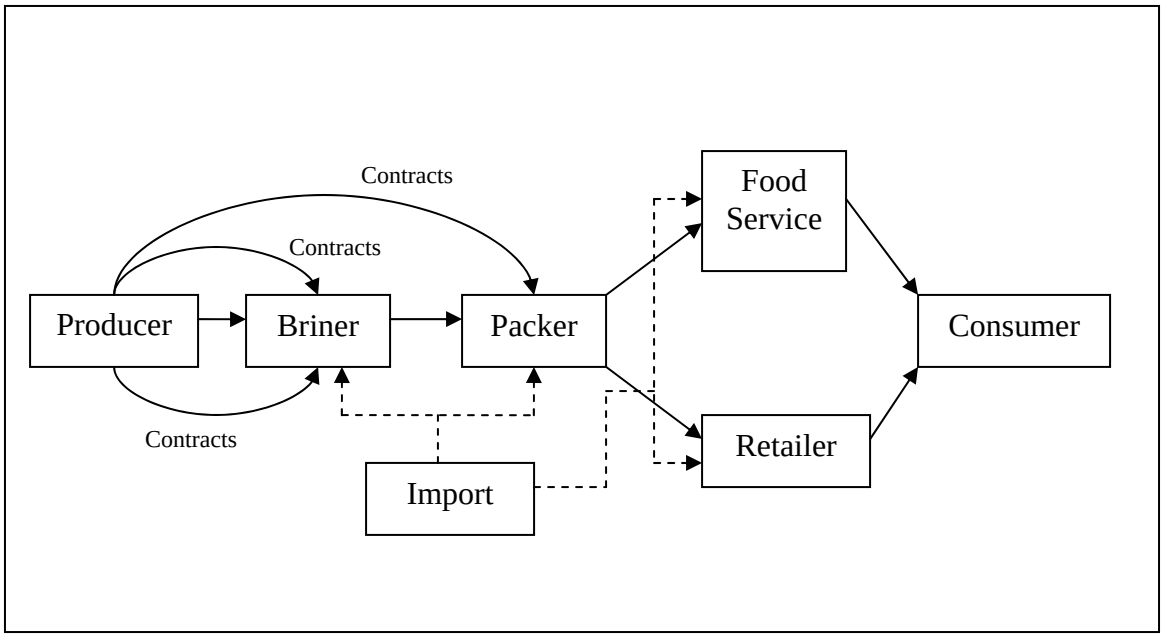

Figure 2. Pickling Cucumber Marketing Channels in Michigan

Contractual relationships are key factors in pickle markets. Packing companies normally sign two contracts; one with growers and one with briners. Growers deliver fresh cucumbers that have not yet been processed. Grower contracts are for the most part, annual, and many growers renew their contract every year. In this industry, it is common for long-term relationships to develop between growers and processors. Contracts are usually based on production acres to satisfy the total volume of pickling cucumbers a company will need in any given year.

A second type of contract is signed with 'briners', which are first-stage processors who deliver brined cucumbers ready-to-pack. Contracts with briners vary in length from one to seven years. Some briners receive the fresh cucumbers directly from contract growers and classify them according packer-specified grading systems, after which briners deliver to companies for the final packing (e.g., jars).

The pickling cucumber production cycle is approximately 50 days from planting to harvest. Once pickling cucumbers are ready, growers are required to harvest in less than 24 hours. Packing companies have a daily quota that growers and briners need to fulfill according to each contract. Therefore, management of planting and harvesting requires a coordinated effort of growers, briners and packers.

After harvesting and grading, pickling cucumbers can be processed into different pickled products. The most common process is called curing or preserving. Cucumbers are placed in a solution in large tanks where salt is added according to a formula. At the end of this fermentation, cucumbers are considered 'brine stock' from which different final products can be made, such as sweet, dill or sour pickles. Brined cucumbers can last up to three years under special care, but average storage is usually less than a year (MOPC, 2006)

The second most common process is fresh packing. Fresh pack pickles are made from fresh cucumbers within twenty-four hours after harvesting. These cucumbers are packed in jars with sweet or dill juice and then vacuum sealed. Fresh packed cucumbers are pasteurized to preserve flavor and texture (MOPC, 2006).

Imports have become an important source of pickling cucumbers. In most cases, food service and retailers import final products directly from different international sources. However, sometimes packers import pickling cucumbers that need to have an additional processing to become suitable for human consumption (i.e. brine stock).

3. Pickling Cucumber Trade Trends in the U.S.

Worldwide demand for pickled products has been relatively flat, influencing the rather static production of pickling cucumbers in Michigan and elsewhere. Nevertheless, during the last decade trade has expanded, with important volumes imported to the U.S. every year. Many countries that export are able to deliver all types of pickled cucumbers from refrigerated (green cucumber) and fresh pack (pasteurized) to processed cucumbers in tanks or jars. Although for the most part fresh cucumbers are primarily imported from Mexico, and gherkins from India.

The availability of good quality foreign products, different sourcing practices, and tariff reductions are factors that have contributed to increasing U.S. imports of pickled cucumbers. Total imports and exports were approximately equal between 1992 and 1996. After 1996, imports increased from 47.4 million pounds to 114.6 million pounds by 1999 and after that decreased to 77.4 million pounds in 2002, to rapidly increase again reaching 124.3 million pounds in 2005 (Figure 3).

On the other hand, after 1997 total exports decreased from an all time high of 49.2 million pounds to 18 million pounds in 2002 and 2003. Since 2003, exports have risen only slightly to reach approximately 27.3 million pounds in 2005 (STAT-USA, 2006).

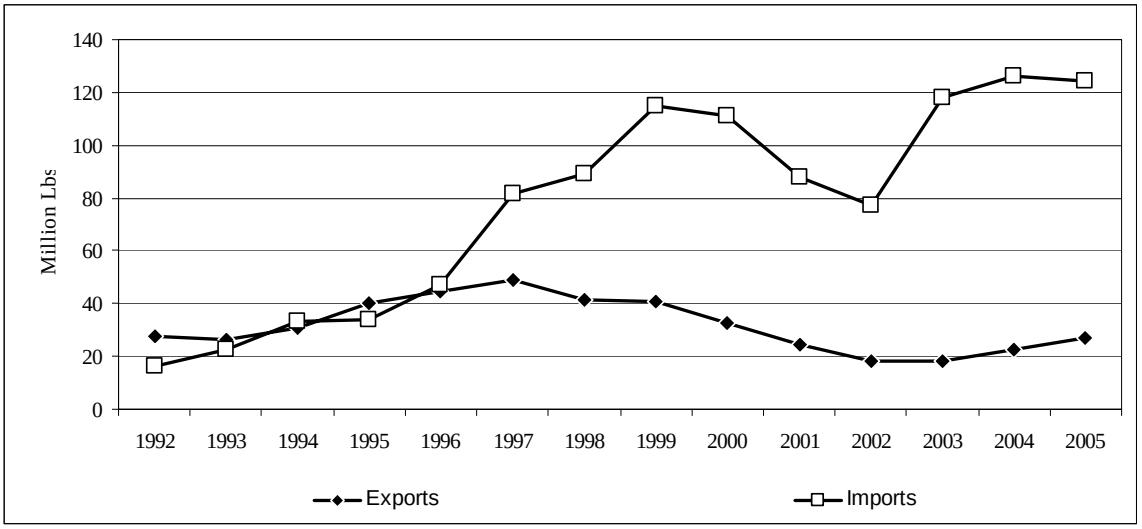

Figure 3. U.S. Trade in Pickled Cucumber Products, 1992 – 2005
Source: U.S. Census Bureau, 2006

The U.S. International Trade Commission (USITC) categorizes imports and exports of pickled cucumbers under two different codes within the harmonized tariff schedule: cucumbers including gherkins which are prepared or preserved by vinegar or acetic acid and are ready-to-consume (HS 2001.10.00.00), and cucumbers and gherkins provisionally preserved in brine but unsuitable in that state for immediate consumption (HS 0711.40.00.00).

The first and most important category of imports in terms of volume includes "ready-to-consume" pickled cucumbers (HS 2001.10.00.00). In 2000 the general tariff rate for this group was 9.6 percent for all countries except Mexico and Canada which are tariff exempt (USITC, 2006). Main exporting countries of these products to the U.S. are India, Canada, Mexico, Poland, Germany, and Turkey.

There have been large increases in imports of ready-to-consume pickled cucumbers since the early 1990s. From 1992 to 1996, imports to the U.S. from all countries shown in Table 4, except Poland, significantly increased in volume. Imports from India, Mexico, Turkey and Canada increased at average rates of 222, 208, 126 and 98 percent, respectively. Between 1998 and 2001, imports from all countries continued to grow but at slower rates, with the exception of Turkey and Canada, which actually decreased exports to the U.S. Finally, after 2001 annual change in volume shipped from India, Mexico, and Turkey increased again, whereas imports from Germany and Canada declined (Table 4).

Overall, average imported volume of ready-to-consume pickled cucumbers increased most significantly from India, Canada and Mexico. Imported volume from India went from an average of 1.5 billion pounds in the period 1992 – 1996 to an average of 23.6 billion pounds in the period 2002 – 2005. Similarly, Canadian supplies increased from eight billion pounds to almost 29 billion pounds, and Mexican imports went from 467 million pounds in the earlier period to 17.6 billion in the early 2000.

Table 4. Average Annual U.S. Imports and Rate of Change of Ready-to-Consume Pickled Cucumbers

Country*	Average Annual Volume			Annual Rate of Change		
	1992-1996	1997-2001	2002-2005	1992-1996	1997-2001	2002-2005
	----------Million Lbs----------			----------%----------		
Canada	8,034	29,941	28,778	98	-0.03	-2
India	1,503	9,953	23,650	222	29	67
Mexico	467	4,559	17,600	208	9	47
Poland	1,994	3,090	5,176	1	3	3
Germany	1,605	2,241	2,468	20	4	-6
Turkey	401	1,982	2,740	126	-3	12
Total	*19,319*	*56,985*	*86,912*	*33*	*6*	*22*

Source: U.S. Census Bureau, 2006
*These countries represent 93 percent of total U.S. imports for this category in 2005

A second group of pickled cucumber imports includes provisionally preserved cucumbers (HS0711.40.00.00). These products require additional processing before they are ready for human consumption. Consistent with trade patterns of other products, a lower tariff is maintained on this lesser-processed product. The 2000 general tariff rate was 7.7 percent (Mexico and Canada are exempt) (USITC, 2006).

In 2005, major suppliers of provisionally preserved cucumbers were again India, Turkey, Canada, Poland, and Mexico, which represented approximately 99 percent of total imports in that year. Imports from these countries, except Mexico and Canada, increased significantly from 1992 to 2005. India represents the most notable increase in supply. Total imports from this country increased from an average of 3.1 million pounds in the period 1992 – 1996, to 13.8 million pounds in the middle period to an average of 19.4 million pounds in the period 2002 – 2005. During the early 1990s imports from India increased at an amazing average of 462 percent annually. However, this rate of growth was not sustained (Table 5).

Average imported volume of provisionally preserved pickled cucumber from Turkey increased from 0.02 million pounds in the period 1992- 2006 to 3.3 million pounds in the period 2002 – 2005. Imports from Turkey increased annually since 1992, showing the largest rate of increase in the period 1997 – 2001, with an annual rate of variation of 787 percent.

Imports from Canada and Mexico showed a more variable trend from 1992 to 2005. Imports from Mexico decreased from an average of 4.4 million pounds in the period 1992

– 1996 to an average of 2.3 million pounds in the period 1997 – 2001. From 2002 to 2004, there were no imports of provisionally preserved cucumbers for pickle from Mexico. In 2005, imports from Mexico were resumed with a total imported volume of 17 million pounds. Canada showed a decreasing tendency during the period 1992 – 1996, to increasing annual rates of variation in the period 1997 – 2001, and to decreasing again from 2002 to 2005.

Table 5. Average U.S. Imports and Rate of Change for Provisionally Preserved Pickled Cucumbers

Country*	Average Volume			Annual Rate of Change		
	1992-1996	1997-2001	2002-2005	1992-1996	1997-2001	2002-2005
	----------Million Lbs----------			----------%----------		
India	3.1	13.8	19.4	462	-0.3	3
Turkey	0.02	0.3	3.3	72	787	33
Canada	1.3	0.9	1.3	-12	11	-23
Poland	0.1	0.1	0.3	-16	42	-20
Mexico	4.4	2.3	(a)	-5	115	(a)
Total	*11.4*	*39.7*	*24.6*	*25*	*-4*	*4*

Source: U.S Census Bureau, 2006

(a) Mexico restarted imports in 2005

*These countries represent 99 percent of total U.S. imports for this category in 2005

Although the impact of the North American Free Trade Agreement (NAFTA) is generally cited as the main cause of increasing imports of pickling cucumbers, this statement does not explain the increase in imports from India and other countries outside North America. Some studies observed that trade between Mexico and the U.S. has been greatly affected by growth rates in Mexico, technological change in Mexico, and different exchange rates between the Mexican peso/ U.S dollar (Malaga et al., 2001). Even before NAFTA, the Mexican policy of expanding its food industry promoted and accelerated an overall expansion in productivity at the production and processing level (White et al., 2003).

In the case of India, between 2001 and 2002, the government of India opened its markets to foreign direct investments in all areas of production and processing. The main objective was to boost the competitiveness of all Indian industries and in particular the food industry. Currently, India is second to China in production of fruit and vegetables, including cucumbers and gherkins (Bhattacharyay and De, 2005). Another factor that might have influenced the increasing imports from India has been the acceptability of ‘gherkins’ in the U.S. market.

Generally, the main category of U.S. pickled cucumber exports are ready-to-consume pickles. Canada, Mexico, Japan, Hong Kong, Saudi Arabia, Taiwan, and Korea are the primary destinations but these markets have not been a source of overall industry growth. Between 1992 and 2005, average exported volume to Mexico showed a slight increase, whereas exported volume to all other countries decreased during the same period. From 1992-1996, exports to Korea and Canada showed increasing annual rate of change (4 and 52 percent respectively). From 1997-2001 only exports to Saudi Arabia grew at an average rate of 17 percent. From 2002-2005, exports to Canada, Hong Kong, and Taiwan increased, whereas exports to Mexico, Japan, Korea and Saudi Arabia decreased considerably (Table 6).

Exports of ready-to-consume cucumbers represent the main category of exported pickled cucumber products. There are also limited U.S. exports of provisionally preserved pickled cucumbers. Canada is the main export destination for this product. From 1992-2005, sales to Canada increased from an average of 2 million pounds to 2.69 million pounds. During the same period exports to Japan and Mexico decreased to zero until 2005 (Table 7). With the exception of some sales to Canada, this is clearly a market where the U.S. is not competitive in world sales.

Table 6. Average U.S. Exports and Annual Rate of Change of Ready-to-Consume Pickled Cucumbers

Countries*	Years													
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	----------Million Lbs.----------													
Canada	13.1	14.5	13.1	14.1	15.2	16.7	18.5	17.5	18.5	14.6	10.3	9.2	13.2	19.7
Mexico	0.6	0.8	0.7	0.4	0.4	0.5	0.4	0.7	1.4	1.1	1.9	1.0	1.1	1.2
Japan	5.6	3.1	2.5	3.6	5.0	3.2	3.0	1.9	1.4	1.7	1.2	0.9	2.1	0.5
Hong Kong	1.5	0.6	0.4	0.5	0.3	0.4	0.3	0.4	0.0	0.0	0.2	0.2	0.1	0.5
Saudi Arabia	0.3	0.7	0.4	0.5	0.2	0.4	0.3	0.2	0.4	0.9	0.4	0.5	0.3	0.3
Taiwan	0.7	0.1	0.2	0.8	0.1	0.2	0.3	0.1	0.2	0.1	0.1	0.2	0.2	0.3
Korea	2.0	3.0	5.2	11.1	10.5	15.1	4.9	9.2	7.9	3.9	1.8	0.4	0.2	0.1
World Total	*25.9*	*25.1*	*26.1*	*35.4*	*39.9*	*42.1*	*34.9*	*39.4*	*31.9*	*23.9*	*17.4*	*14.0*	*18.8*	*24.7*

Source: U.S Census Bureau, 2006

*These countries represent 91 percent of total U.S. exports for this category in 2005

Table 7. Average U.S. Exports and Annual Rate of Change of Provisionally Preserved Cucumbers

Countries*	Years													
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	----------Million Lbs.----------													
Canada	1,614.3	663.6	2,436.6	2,882.9	2,395.8	4,755.8	4,865.9	851.2	0.0	42.3	844.4	3,883.8	3,575.3	2,457.1
Japan	0.0	171.0	1,620.0	1,745.1	978.2	1,487.6	1,135.8	218.8	328.9	431.0	109.0	59.6	32.0	0.0
Mexico	0.0	56.7	119.8	13.9	0.0	0.0	0.0	39.4	108.5	21.8	79.2	31.2	47.6	0.0
World Total	*1,802.6*	*1,038.9*	*4,671.1*	*5,016.7*	*4,682.6*	*7,158.3*	*6,277.9*	*1,159.2*	*587.9*	*561.6*	*1,080.7*	*4,007.2*	*3,757.8*	*2,618.1*

Source: U.S Census Bureau, 2006

(a) The Netherlands restarted imports in 2004

*These countries represent 94 percent of total U.S. exports for this category in 2005

4. Market Review

The domestic market is the primary destination for U.S. pickling cucumbers. Therefore, domestic price, per capita consumption and marketing trends represent important indicators of market conditions for this industry. Figure 4 shows the season average farm price of U.S. cucumbers for pickles between 1984 and 2004. Although the price in current dollars increased from above $150/short ton in 1984 to over $250/short ton in 2003, the inflation adjusted price has been relatively constant.

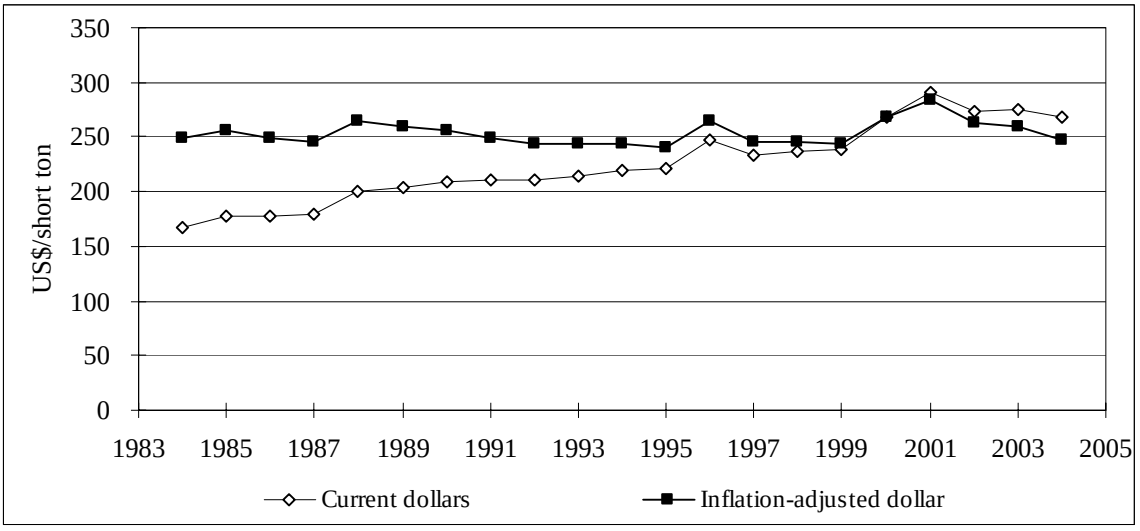

Figure 4. U.S. Season Average Price of Cucumbers for Pickles, 1984 – 2004*
*2000=100 for constant dollars.
Source: USDA, 2005

During the 1990s, U.S. per capita consumption of cucumbers for pickles declined three percent on average with a high level of variability from year-to-year (Figure 5). According to USDA, although the trend in pickling cucumbers has shown a slight decrease, pickles remain the third leading shelf-stable vegetable in terms of consumption (Lucier and Plummer, 2003).

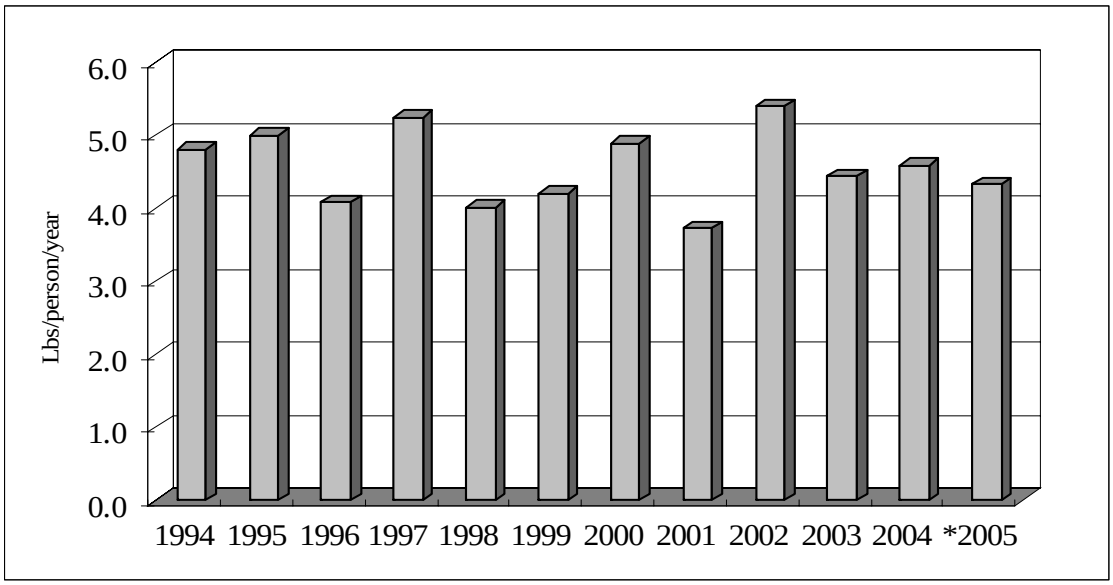

Figure 5. Annual U.S. Per Capita Consumption of Cucumbers for Pickles, 1994 - 2005
*estimated
Source: USDA, 2005

Popular restaurant foods, such as sandwiches and hamburgers are an important and growing segment of pickle product consumption. Approximately 45 percent of pickled cucumbers are consumed away-from-home, mainly at fast food chains (Lucier and Lin, 2000). In 2005, food sales in restaurants reached $475.8 billion and it is likely that U.S. consumers will continue to increase consumption of food-away-from-home (Figure 6). This situation is expected to have a positive impact on pickle consumption in the future (Lucier, 2003). However, growing health concerns, especially among the elderly and people with weight problems, have somewhat dampened pickle consumption with recommendations to reduce sodium and carbohydrate intakes (Estes and Cates, 2001).

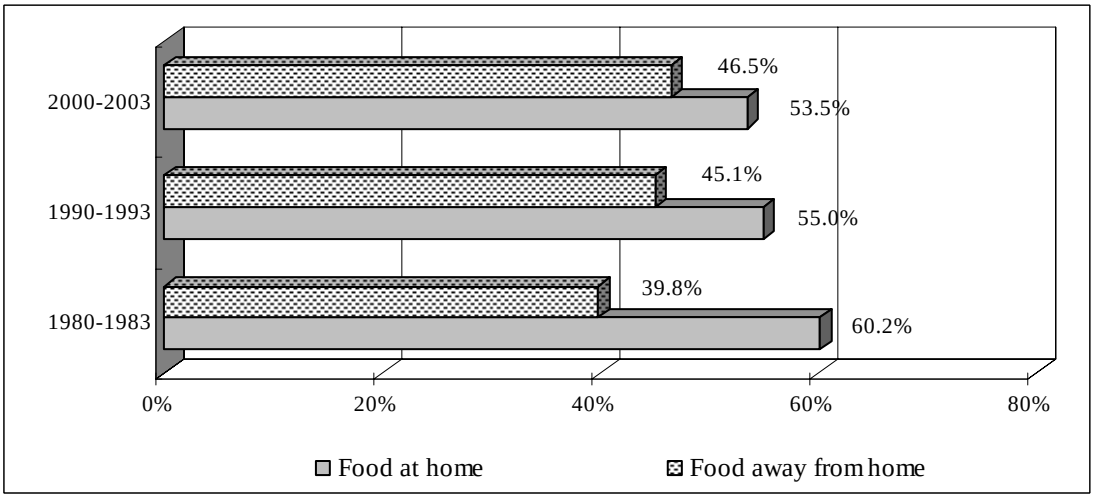

Figure 6. Trends in U.S. Food Consumption at Home and Away-from-Home
Source: USDA ERS, 2006

Changing consumer tastes and preferences, improved technology and changing policy are all important drivers of globalization at the producer and processor level, and the same is true for food sales. Increasing concentration at the retail level has given supermarkets a tremendous market power, including the market for pickles. According to a study conducted by Supermarket News, the ten largest grocers in the U.S. accounted for approximately $600 billion of grocery sales in 2006 (around 40 percent of total grocery sales), with Wal-Mart claiming $317 billion in sales (Figure 7). Other top ten U.S supermarket chains include Kroger, Costco, Albertsons, Safeway, Ahold USA, Publix, Supervalu, Delhaize, and Meijers. In many other countries, the total supermarket share of grocery sales is even higher.

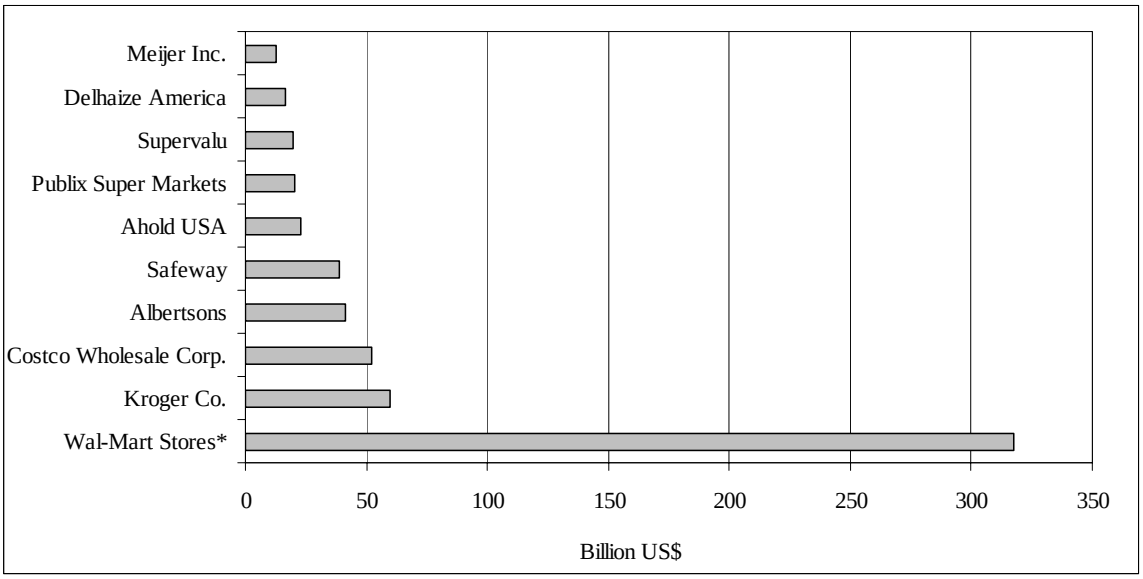

Figure 7. Top 10 U.S. Food Retailers by Total Grocery Sales in 2006
Source: Supermarket News, 2006
*Wal-Mart Stores includes Sam's Club and other Wal-Mart companies

Although consolidation in the U.S. retail sector is likely to continue in the future (Foltz, 2004) and increased concentration at the retail level is believed to drive down demand for different brands of pickles, it is also possible that these more international chains can provide new opportunities for market access for pickle products. For example, developed countries currently dominate processed food sales but developing countries have over 75 percent of global consumers. Global supermarket chains continue to gain share of sales in developing countries and may provide a gateway to regions that were previously more difficult to reach (Reardon, 2004).

5. Conclusions

Pickling cucumbers, like all agricultural products, exist in a global marketplace today. Driven by changes in consumer preferences, technological advance, and government policies, globalization is present in all phases of the supply chain.

U.S. imports of pickled cucumbers have greatly increased from 1992 to 2005. Even with general tariff rates ranging from 7.7 percent to 9.6 percent, competition from countries like India (which pays 9.6 percent tariff rate) is likely to increase mainly because of its ability to provide quality products at lower prices.

At the same time, there has been some decrease in U.S exports of ready-to-consume pickled cucumbers, especially to neighboring Canada, but some important increases in exports to Asian markets, such as Taiwan. Although the U.S has experienced tough competition from other countries, overall, it has been able to maintain a relatively small rate of growth during the period 1992 – 2005.

Domestic markets, which represent the most important demand for pickle products have remained relatively unchanged. From 1994 to 2004, per-capita consumption of pickling cucumbers stayed at approximately 4.3 pounds per person per year. However, consumption of pickling cucumber is expected to slightly increase as consumption of food away-from-home increases driving the demand of pickled cucumbers from food service and restaurants.

Procurement patterns for wholesalers, manufacturers, distributors, and retailers have changed. Business models emphasize service and standards, without increasing prices. Cooperation and coordination within supply chains have become more critical and will likely drive trade patterns in the future.

Competing with imports will continue to keep pressures on these markets. Both growers and briners will face these competitive pressures since imports have surged in final products (competing with fresh cucumbers) and provisionally processed (competing with brined products). Pickle packers themselves will be under increasing pressure to invest in marketing either to compete directly with imports or to decrease their processing role and market products that have been processed elsewhere. U.S. industry strength will continue to be in domestic markets.

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