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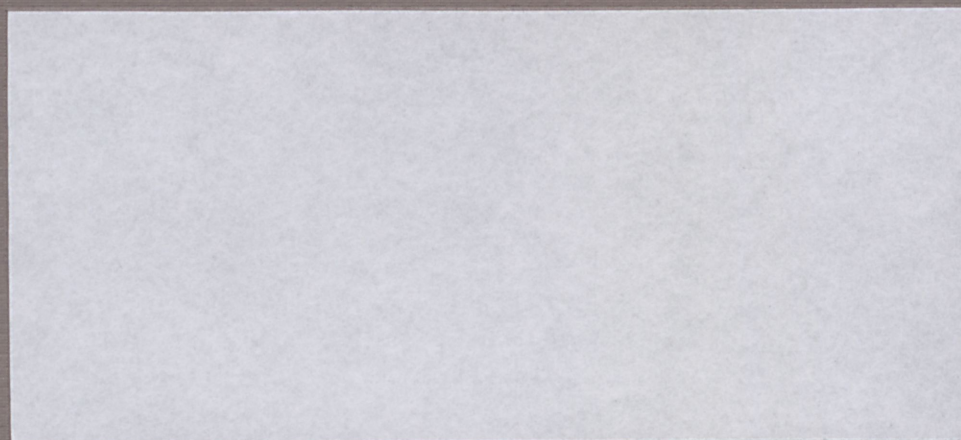
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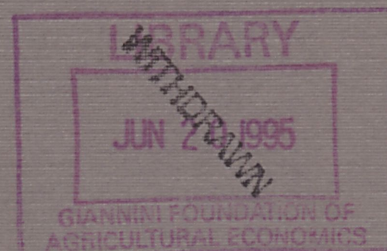
The work reported herewithin contributes to the objectives of North Central Regional Project NC-194, a joint research project of state agricultural experiment stations and the U.S. Department of Agriculture
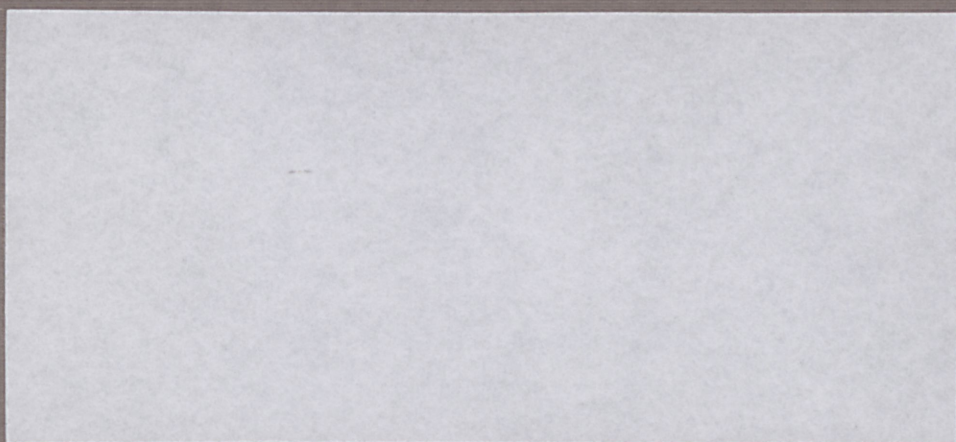
EXPORT MARKETING STRATEGIES: AN ANALYSIS OF FIRM ACTIVITY IN EGGS, CEREALS, AND APPLE JUICE

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INTRODUCTION

An understanding of the strategies used by U.S. food firms in global markets is of interest for several reasons. Exports of agricultural products represent roughly ten percent of total U.S. exports and, in recent years, more than twenty percent of the value of all U.S. farm marketing output. High-value product exports accounted for fifty four percent of all U.S. agricultural export value in fiscal year 1991 (MacDonald). Firm strategy is expected to be a more important factor in the determination of firm and U.S. market share as trade shifts from basic commodities toward value added and consumer ready products. Understanding export marketing strategies is important to exporters and potential exporters as well as for policy decision making.

This study focuses on the market for eggs and egg products, apple juice, and prepared cereals. These are classified as value added but span the range from near commodity (eggs) to substantially differentiated products (cereals).

The U.S. has not played a major role in foreign trade of eggs in peacetime (Schrader et.al). However, in the last three decades, exports have been many times larger than imports. The European Community (EC), principally the Benelux countries, Eastern Europe and China are the major egg exporting countries in terms of quantities. Japan, Canada, and Mexico are the highest importers of egg products and Hong Kong is the leading importer of fresh eggs from U.S.

The Export Enhancement Program (EEP) bonuses are important to the U.S. poultry and egg industries and the primary motive of this program has been to meet competition

from subsidizing countries, especially those in the EC (Haley).

The objective of the study is to develop hypotheses about firm strategies in export markets and to test these hypotheses with firm level data from these markets through analysis of the structure of trade at the trade pair level and identifying the nature of competition among firms in export markets within an industry. The focus is on firm strategies with respect to export market targets and product line decisions and on the stability of trading patterns for the U.S. exports of commodities such as eggs and egg products and differentiated products such as cereals and apple juice.

Eggs include shell eggs, frozen and liquid eggs, and dried eggs. Prepared cereals include breakfast cereals and ready-to-eat cereals.

The importance of competing effectively in global markets is expected to increase if markets are further liberalized within the General Agreement on Tariffs and Trade (GATT). Thus, greater attention to the impact of industrial organization in international markets seems appropriate.

LITERATURE REVIEW

Caves (1977) developed an analytical framework to explain the structure and performance of the grain export sector. Later, Caves and Pugel (1982) conducted an analysis of firms involved in U.S. wheat, corn, and soybean exports. They attribute differences in domestic and export market shares and concentration in the grain trade to informational scale economies. Critical information includes both information on price and market conditions and legal and institutional conditions in destination countries. Market share instability is

2

viewed as an indicator of competitive market conditions. "Stability of shares requires either that short run marginal cost curves be steeply sloped in the neighborhood of equilibrium or that sellers be insulated from close rivalry with one another by natural (product differentiation) or artificial (collusive agreements) methods."(p.265)

A study by Glejser et. al. concluded that, if the information costs were divisible nationwise, costs would become relatively low when only a few countries are considered by the firms. Thompson and Dahl also found that the prime reasons for the small number of larger firms in the grain export industry are scale economies found in elevator operation, grain transportation, market information systems, and financial risk management.

Hymer and Pashigian, and Gort associated domestic market share instability with competitive performance. Gort hypothesized that stability of market shares occurs more frequently when products are highly differentiated. He analyzed the market share changes from 1947 to 1954 for 205 manufacturing industries using the correlation of market shares in the two periods. Gort found a significant direct relationship between measured stability and 1947 four-firm concentration with product differentiation.

Stigler's model, which is consistent with Gort's model, also predicts a negative relationship between seller concentration and share instability or, in other words, highly concentrated industries will tend to have stable seller market shares.

Ogur hypothesized that market shares tend to be more stable in concentrated industries. He allowed for interaction between concentration and product differentiation in his market share instability model. His cross-sectional analysis of 65 industries for 1947-54 period provided evidence of a significant negative relationship between concentration and

market share instability.

Schneider's research, however, did not support the hypothesis that differentiation increases market share stability in oligopolistic manufacturing industries. His study of four differentiated and four homogenous industries found no significant differences in market share behavior between the two groups. In a similar vein, Shaffer showed that competition cannot be expected to cause frequent rank turnover if the instability created by competition amounts to a random walk in market shares.

STRATEGIES OF EXPORTING FIRMS

Among the strategies that may be adopted by exporting firms, such as maintaining cost leadership, differentiation, focus, etc. (Porter), differentiation and focus are expected to be the most important for the exporter of commodities.

Differentiation

Opportunities for differentiation are limited in commodity businesses such as eggs. Nevertheless, some differentiation of services offered and consistency of quality, delivery, and information are possible. Breakfast cereals, catering to specific tastes with established brands, trademarks, and advertising, are clearly differentiated. Apple juice is more differentiated than eggs but less differentiated than cereals. Apple juice may be differentiable in the eyes of the foreign buyer by origin because of variety and producing conditions however this might not differentiate among shippers from the same origin. Thus American juice may be preferred by some buyers to satisfy a particular taste or to provide variety in consumption but without a preference for the product of specific shippers from that origin.

4

There may be differences in apple juice among regions of the U.S. that may serve to differentiate the products of regional sellers but eggs are probably perceived as the same from any origin.

Focus

Focus on a particular product line, country, or group of countries can reduce unit transaction costs of an exporting firm. This applies particularly to the cost of information acquisition. Focus on product line means understanding the needs of users and being able to excel in providing information and services related to that product. This is especially true in the case of large volume markets where competition among firms is likely to be intense. Thus large volume markets would be expected to attract firms with a product focus.

A country or geographic focus allows a firm to benefit from a better understanding of special needs of customers, business laws and customary ways of doing business in the area. Business contacts are likely to be useful for sales of more than one product line. Transport costs may be lower for a larger tonnage to one market.

The focus appropriate for a given firm and situation depends on the way transaction costs vary as total volume, number of products, and number of destinations vary. Transaction cost is positively related to each of these variables but may increase at a decreasing rate as each of the variables increases. Thus the minimum average cost of information, transaction, and transport is likely to be found at a different product mix in markets of different size.

DATA

Hypotheses derived from trade, industrial organization, and business strategy

5

literatures to explain competitive patterns of exporting firms are tested in this study using the PIERS (Port Import/Export Reporting Service) data set. This data set, available from the Journal of Commerce, provides data on waterborne U.S. exports and imports of food and agricultural products and nine other broad product areas. These data provide detailed information on the structure of U.S. exports and on the firms involved in trade. One fundamental application of the PIERS data is the examination of levels and trends in firm level market shares in individual international markets and the stability of these market shares over time (Patterson and Abbott). This study uses annual data for U.S. exports of fresh, frozen, and dried eggs; prepared cereals; and apple juice from 1981 to 1991.

There are some problems in handling the PIERS data with respect to commodity and firm name descriptions. Commodities are identified using different descriptions. For example, fresh eggs are found described as whole eggs, brown eggs, shell eggs, etc. Some discretion is necessary to categorize these products accordingly. Multiple product shipments such as "eggs, vegetables, and fruits" or "eggs and dairy products" cannot be classified and, therefore, are not used in this study. Company names are also recorded in different forms in different records. Discretion was used to determine which names represent the same firm.

An important disadvantage in this data set is the lack of information on price or value of shipments.

METHOD

Product Strategy

Following Porter's model on firms with a product focus, the first hypothesis for study

6

is that, within a product category, firms that concentrate on one or a few products would tend to deal primarily with large volume markets for those commodities and those firms with multiproduct strategy would tend to deal with small volume markets for any one of those commodities.

The data for this test cover the combined U.S. exports of fresh, frozen, and dried eggs; prepared cereals; and apple juice by destination and by individual firm from 1981-1991. Fresh, frozen, and dried eggs are combined on a fresh equivalent basis with one pound of dried eggs equal to 3.8 pounds of fresh eggs. Frozen eggs are treated as equivalent to shell eggs. Average shipments across these years are calculated by destination and ordered by volume. The one-fourth of the countries receiving the largest amounts are classified as large volume markets and the one-fourth receiving the smallest quantities as small volume markets. The markets are classified according to the U.S. exports of each product and without regard to total consumption of the product in that country.

The number of other products exported by the U.S. egg and egg product; cereal; and apple juice exporting firms are calculated for the years 1981 and 1991. For eggs and egg products thirty companies are selected for each year. Firms selected for the test are those who exported between 1981 and 1991 regardless of whether they exported eggs and egg products in the years 1981 and 1991. Because this procedure produced only a few firms exporting to small egg markets the procedure was modified to force selection of firms exporting either to small volume markets or small and large volume markets for cereals and apple juice. For cereals there are 18 firms for 1981 and 11 firms for 1991 and for apple juice there are 18 firms for 1981 and 27 firms for 1991. The hypothesis is tested by

comparing the mean number of products exported by sample firms exporting to the large volume markets to the mean number of products exported by firms exporting to small volume markets. The number of products exported by these firms for 1981 is shown in Appendix Table A1.

A standard t test (Johnson) is used to test for equality of the mean number of products shipped per firm exporting to large markets and the mean number of products shipped per firm shipping to small markets. The test statistic is:

$$U = \frac{(m + n - 2)^{1/2} \; (\overline{X} - \overline{Y})}{(1/m + 1/n)^{1/2} \; (S_x^2 + S_y^2)^{1/2}} \quad \propto \quad (t_{m + n - 2, \alpha/2}) \qquad (1)$$

The above formula is for the case where the variances of the two groups are same. 'm' and 'n' are the number of large and small volume markets. $\overline{X}$ and $\overline{Y}$ are the mean number of products for the large and small volume markets and S_x^2 and S_y^2 are the sample variances for these two markets. In this case where the difference in variance of number of products in the large and small volume markets is huge, the following formula is also used (Degroot).

$$U = \frac{(m + n - 2)^{1/2} \; (\overline{X} - \overline{Y})}{(1/m + k/n)^{1/2} \; (S_x^2 + S_y^2/k)^{1/2}} \quad \propto \quad (t_{m + n - 2, \alpha/2}) \qquad (2)$$

All the symbols are defined as in the above formula and 'k' = σ_y^2/σ_x^2, that is, variance of the second group divided by the variance of first group.

8

Stability of Trading Pattern

The stability of trading patterns can be assessed using the variation in market shares of firms to a particular destination over a period of time. Following Caves and Pugel, seller market share variation is considered as a possible index of competitive performance.

Based on the assumption that large markets attract more sellers and greater competition, it is expected that a stable pattern of seller/destination pairing is more likely in small volume markets than in large volume markets. The research question is: does a firm dominate the market (or supply 50 percent or more of the country's imports of each egg product group from 1981-1991) more frequently in large or small volume markets?

The data for this test cover the U.S. exports of fresh, frozen, and dried eggs separately by destination and by individual firms from 1981-1991. Average shipments across these years for each egg product group are calculated by destination and arranged in descending order. The top one-fourth of the markets are classified as large volume markets and bottom one-fourth as small volume markets.

The hypothesis is tested by comparing the mean over countries of the largest number of years that one firm supplied 50 percent or more of a country's imports of each egg product group for the large and small volume markets. There are three steps involved in calculating the mean of the largest number of years: (1) determining the firms that supplied 50 percent or more of the countries imports from the U.S. of each egg product group for each year (2) determining the largest number of years that one firm held a share of 50 percent or higher for each destination included and (3) calculating the means of highest number of years for the large and small volume markets.

Details on the number of years a firm supplied 50 percent or more of a country's imports of fresh eggs from the U.S. between 1981 and 1991 are presented in Appendix Table A2.

A t-test is used to test for equality of means in the large and small markets. This hypothesis is also tested by regressing variation in market share by destination on market size for each egg product group, where market size is the average annual shipment to a destination from 1981 through 1991. Variation in market share over these years for each destination is calculated using the following formula:

$$[\frac{\sum_i \sum_t (MS_{it} - MS_{it-1})^2}{N}]^{1/2} = MSV \tag{3}$$

which is the whole country measure of instability where MS_{it} is the percent market share of the ith firm for the current year (t) and MS_{it-1} is the market share of the ith firm for the previous year (t-1). (N) is the number of firms shipping to each destination multiplied by number of years.

This hypothesis is also tested for prepared cereals (which includes breakfast cereals and ready-to-eat cereals) and apple juice by regressing share variation by destination on average shipment. Markets are classified in the same way as in the case of eggs and egg products. Appendix Table A3 gives the variation in market share and average shipments to the destinations of interest where average shipments are given in pounds.

10

<u>Differentiated Versus Undifferentiated Products</u>

Theoretical literature on the relation between differentiation and market share stability is sparse and ambiguous, but seems to suggest that differentiation is associated with stability.

Because prepared cereals and apple juice are differentiated products one might expect a more stable pattern of market shares by destination for these products than for eggs and egg products, which are largely undifferentiated. This hypothesis is tested through comparing the average market share variation between egg product groups and cereal and between egg product groups and apple juice. Average market share variation is calculated as the unweighted mean of market share variation across destinations.

RESULTS

In theory large volume markets are expected to be more competitive and to attract a larger number of competing firms. Firms following a product focus are expected to concentrate on the larger markets. If so, one can expect homogeneity of products or service for those firms dealing with large volume markets. On the other hand, small volume markets are expected to be less competitive with fewer firms employing a market rather than product focus. Here one can expect heterogeneity of products or services.

Contrary to expectations, the results show that larger volume markets do not necessarily attract product specialist sellers. The mean number of products exported by egg and egg product exporting firms to large volume markets is 3.64 and to the small volume markets is 1.57 for 1981 and for 1991 they are 4.36 for large volume markets and 1.22 for small volume markets. For apple juice the mean number of products exported to the large

volume markets is 5.39 and to the small volume markets is 2.07 for 1981 and 5.22 and 4.91 for 1991 and for cereals they are 4.20 and 4.14 for 1981 and 5.17 and 3.58 for 1991 for large and small markets respectively. The differences in means are statistically significant at the 95 percent significance level using the unequal variances test.

As these results counter the hypothesis, firms that concentrate on small volume markets are selected for additional analysis. Again, the results seem to indicate that the mean number of products exported by one firm to the large volume markets is greater than the mean number of products exported to the small volume markets.

If the assumption that smaller markets are less competitive with fewer sellers trying to differentiate their products or services from that of their competitors, there would be less changing of suppliers to the small volume markets. That is, a firm would more likely tend to be a constant supplier in all the years without dominating the market or to dominate the market for a small volume country's imports of a particular product than would be the case for large volume markets.

Again the results given in Table 1 show that the mean of the largest number of years a firm supplied 50 percent or more of a country's imports of each egg product group in the largest one-fourth of the export markets between 1981 and 1991 is greater than that of the smallest one-fourth of the export markets indicating greater stability in large volume markets.

12

Table 1 · Mean Number of Years a Firm Supplies 50% or More of a Country's Imports of Fresh, Frozen, and Dried Eggs.

Fresh eggs		Frozen eggs		Dried eggs	
Large	Small	Large	Small	Large	Small
3.06	1.30	2.27	1.45	5.69	1.50
t^*	$t_{(32,.025)}$	t^*	$t_{(32,.025)}$	t^*	$t_{(32,.025)}$
3.55	2.02	1.25	2.08	4.45	2.04

Notes: Large and Small refer to large and small volume markets for each egg product group.

t^* refers to calculated value and $t_{(32,.025)}$ refers to critical value at 95 percent significance level.

The differences are significant at the 95 percent significance level for fresh and dried eggs but not for frozen eggs.

The regression of market share variation on market size also shows that variation in market share and market size are inversely correlated. The coefficient of the variable market size is negative for all three egg product groups, which means when market size increases variation in market share decreases and when market size decreases variation in market share increases, where market size is the average shipment to that market. The average market share variations for large and small volume markets shown in Table 2 also show that variation is less in large volume markets.

Table 2   · Average Market Share Variation for Large and Small Volume Markets for Fresh, Frozen, and Dried Eggs.

Fresh Eggs		Frozen Eggs		Dried Eggs	
Large	Small	Large	Small	Large	Small
16.53	37.59	20.73	44.64	23.13	43.56

The same tests conducted for apple juice and cereals also indicate that variation in market share is inversely related to market size. Average market share variation for apple juice and cereal are shown in Table 3.

To check these results, countries that imported fresh, frozen, and dried eggs, cereals, and apple juice in seven or more years from 1981-1991 are identified and average shipments to these destinations for these years are arranged in descending order. Since there are only a limited number of countries that imported in seven or more years, the top one-half of the countries are classified as large volume markets and bottom one-half as small volume markets. The average market share variations for the small volume markets for all the products are greater than the average market share variations for the large volume markets which again indicate that a stable pattern is more likely in large volume markets.

Table 3 · Average Market Share Variation for Large and Small Volume Markets for Apple Juice, and Cereal.

Apple Juice		Cereal	
Large	Small	Large	Small
19.18	36.47	14.32	39.45

Note: Large and Small refer to large and small volume markets for apple juice and cereal.

The literature seems to suggest that differentiation inhibits changes in the share of markets held by firms. This is true in the case of cereals because the trading pattern for cereal is more stable than all the three egg product groups. The trading pattern for apple juice is more stable than for frozen and dried eggs. The trading pattern is less stable than for fresh eggs in large volume markets. The average market share variations for all the products for the total markets are given in Table 4.

One would expect small volume markets to be more concentrated than large volume markets but the four-firm concentration for all three egg product groups for large markets is more than 75 percent and for small markets it is 100 percent for the year 1991 which indicates that both large and small volume markets for eggs are highly concentrated.

Table 4 · Average Market Share Variation for Fresh Eggs, Frozen, and Dried Egg Products, Apple Juice, and Cereal for the total markets.

Average Market Share Variation				
Fresh Eggs	Frozen Eggs	Dried Eggs	Apple Juice	Cereal
27.06	32.68	33.34	29.15	26.34

CONCLUSIONS

The study of firm behavior in export markets for eggs and egg products, apple juice, and prepared cereals provides further evidence of the usefulness of the PIERS (Port Import/Export Reporting Service) in advancing the understanding of the nature of competition and firm strategies in foreign markets for U.S. products. These data provide the opportunity to observe behavior at the firm level not possible with public data.

These limited analyses indicate that, contrary to expectations, large volume destinations have not attracted more competitive behavior nor do large markets attract firms following a product focused strategy. Although hypotheses about firm behavior based on a perception of the importance of scale economies associated with information were not supported by the data, one cannot reject the importance of information in determining firm strategies in export markets. It is likely that the impact on firm behavior is more complex than recognized in the hypotheses tested.

Market shares in export markets were found to be more stable for seller differentiated cereals than for apple juice and eggs as expected. However, the market shares for shell eggs, perceived to be the least differentiable of the egg products, were more stable than those of egg products. The impact of seller differentiation of cereals is probably less than one might expect because the large cereal companies manufacture products in the foreign countries rather than export product. Nevertheless, market shares for cereals in large export markets (where the strongest brands would be more likely to be produced in country) were more stable than in small markets.

Differentiation based on product variety as used by Krugman (as cited by Vousden)

16

is not expected to be a major factor in determining firm behavior for the products studied. It could be a factor in other markets, particularly in the case of complex manufactured products.

The fact that the present study sample does not cover all modes of shipments in the identified industries restricts the generalizability of the study's results. The absence of price or value data restricts the analysis of pricing behavior by the exporting firms.

The markets are classified as large and small volume markets according to the U.S. exports of each product. Some of the markets which appear as small volume markets for U.S. exports might be large volume markets for their total imports and domestic production which will change the behavior of the markets and may have influence on the results. Canada and Mexico are the leading importers of fresh eggs from the U.S., but because of the lack of truck or rail shipment coverage these countries were omitted from the analyses.

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18

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APPENDIX

Table A1. Number of Countries and Products Dealt with by U.S. Egg and Egg Products Exporting Firms for 1981.

Firm	Country	No of Products	Size of the Market (1)
Cadillac Foods	Arab Emirates	10	large
	Saudi Arabia	3	large
	Kuwait	2	large
	Bahrain	1	small
Cal Maine Foods	Netherlands	1	large
	Japan	2	large
Decoster Egg Farms	Bermuda	1	large
Hunter Food Products	Virgin Islands	15	large
Ballas Intl Sales	Netherlands	1	large
	Japan	1	large
	United Kingdom	1	large
	Uruguay	1	small
Bird in Hand Intl	Japan	3	large
	Hong Kong	4	large
	Netherlands	2	large
	Kuwait	1	large
	Saudi Arabia		large
Bender Goodman	Japan	1	large
Chugai Intl	Japan	3	large
Northwest Egg Sales	Hong Kong	1	large
Cutler Dairy Products	Japan	1	large
	Hong Kong	1	large
Caldarulo Intl	Saudi Arabia	2	large
Nulaid Foods	Territory of Pacific Island	1	large
Etak Intl Hong Kong	Hong Kong	19	large
	Singapore	1	large
Hamdyiego Intl	Egypt	6	large
Dubose Foods	Japan	1	large
Danam Trdg	Belgium	1	large

Table A1 continued

Firm	Country	No.of Products	Size of the Market
Certified Grocers	Territory of Pacific Island	12	large
			large
	Kuwait	2	large
	Japan	10	small
	Australia	5	large
	Guam	1	
Cal Miami Export Products	Japan	1	large
Clifford L Benjamin	Leeward Windward Islands	17	large
	Virgin Islands	19	large
Coronado	Hong Kong	1	large
Mccall Sanders	Hong Kong	1	large
Egg of America	Japan	1	large
	Federal Republic of Germany	2	large
	Portugal	1	small
Egg Products	Japan	1	large
Cutler Egg Products	Japan	2	large
	United Kingdom	2	large
	Bermuda	1	large
Daimaru	Japan	5	large
Dixie Egg	Egypt	1	large
Olympia Trdg	Japan	6	large
	Singapore	1	large
Dependable Frozen Foods	Paraguay	1	small
Farbest Tallman Foods	United Kingdom	2	large
	Portugal	1	small

Table A1 continued

Firm	Country	No.of Products	Size of the Market
Flagstaff Food Service	Saudi Arabia	12	large
	Jordan	2	large
	Lebanon	1	small
	Arab Emirates	4	large
	Kuwait	7	large
	Iraq	1	large
	Bermuda	1	large
	Netherlands	1	large

Note: (1)   Size of the Market refers to size of the market for fresh, frozen, and dried eggs.

* Source: PIERS, Journal of Commerce.

Table A2   · U.S. Firms supplying 50% or more of country's imports of fresh eggs from 1981-1991.

Country	Firm	No.of Years	Size of the Market (1)
American Samoa	Hawaii Pacific	2	Large
	Commerce System	1	
	Mkt Associates Pacific	(5)*	
	Endeavors	1	
	Richmond Wholesale meat		
Arab Emirates	Dolphin Shpg&Trdg	1	Large
	National Food	2	
	Ingredient	(6)	
	National Foods		
Australia	Belt Sales	(1)	Small
	Paramount Exports	1	
Bermuda	Amigo Foods	1	Large
	David M Bungard Assoc	1	
	Decoster Egg Farms	(4)	
Egypt	Servac Intl	(2)	Large
El Salvador	Pandol & Sons	(1)	Small
F W Ind (2)	Plaza Provision	1	Small
	Intl Maritime	(2)	
	Resources		
Federal Republic of Germany	All Transport	(2)	Small
	Dan Transport	1	
	Oskaloosa Food Product	2	
Gambia	Marine Trdg Counsel	(1)	Small
Greece	Seymour Foods	(1)	Small
Guam	California Pacific Assoc	(2)	Large
	Kent Intl	1	
	Richmond Wholesale meat	1	
Haiti	American Agrivest	(4)	Large
	Serge Brieres	1	
	Sunny Morning Food	2	
Hong Kong	National Foods	(6)	Large

Table A2 continued

Country	Firm	No.of Years	Size of the Market
Hi Seas	Intl Maritime Resources	(1)	Small
		1	
	Yamamota Brother		
Honduras	Affiliated of Florida	(2)	Small
	Hyde Shpg	2	
	Sunny Morning Egg	1	
	Tampa Bay Produce	1	
Indonesia	Chevy Chase Intl	(1)	Small
	National Food Ingr	1	
	Order (3)	1	
Iraq	Gold Kist	(1)	Large
Japan	Gold Kist	1	Large
	Military Sealift Command	(3)	
	National Food	1	
	Order	2	
Jordan	United Trdg	(1)	Large
Kuwait	Cal Maine Food	(1)	Large
	National Food Ingr	1	
Leeward Windward Islands	BEC Intl	1	Large
	J K Lang	(5)	
New Guinea	No 50% supply	(0)	Small
New Zealand	Chicken Little	(1)	Small
	Imperial Trdg	1	
Other Pacific Islands	Aspen Intl	1	Small
	pacific Endeavors	(2)	
	Richmond Wholesale Meat	1	
Puerto Rico	Radlo Southeastern	(1)	Large
Spain	Etak Intl Hg Kong	(1)	Small

Table A2 continued

Country	Firm	No.of Years	Size of the Market
Republic of South Africa	National Foods	(1)	Small
Suriname	S L Rama	(1)	Small
Territory of Pacific Islands	Order	(2)	Large
Turkey	Albatross Trdg Gold Kist Peavey Grain	(2) 1 1	Large
United Kingdom	Oskaloosa Food Product Sanovo	(3) 1	Small
Union of Soviet Socialist Republic	Marine Resources	(1)	Small
Virgin Islands	Hillandale Farms Hunter Food Products Mario Emmanuelli Zephyr Egg	2 1 2 (6)	Large

Notes: * Figures in parentheses are used to calculate the mean number of years.
(1) Size of the Market refers to size of the market for fresh eggs.
(2) For some countries no full identifications appear in the PIERS data.
(3) The name "Order" in the Firm name column indicates that this firm did not want to reveal its identity.
* Source: PIERS, Journal of Commerce.

Table A3. Market Share Variation and Average Shipment for Apple Juice and Cereal.

Country	Apple Juice		Cereal	
	MSV	Avg Lbs	MSV	Avg Lbs
American Samoa	39	1191		
Bahamas	7	658042	9	1234004
Barbados			14	506577
Bermuda	13	211968	9	691164
Bangladesh			32	146
Bolivia			32	976
British Polynesia Islands			55	25
Brunei	32	55	45	170
Costa Rica				
Canada	31	70906	14	4134556
Cayman Islands	45	22		
Chile	45	236		
China P: mainland	45	405		
China Taiwan	8	337812		
Colombia	39	214		
El Salvador	30	1210		
France	38	50614	31	118834
French Polynesia Islands	13	105356	17	287892
Gabon			32	71
Greece	45	144	45	1369
Guam			17	77072
Guatamala	28	259		
Guyana			32	645
Hong Kong	8	354171	13	136315
Iceland			3	1598955

Table A3 continued

Country	Apple Juice		Cereal	
	MSV	Avg Lbs	MSV	Avg Lbs
India			14	140
Ireland			45	799
Israel	39	57036	12	123931
Italy			59	1494
Jamaica	25	51988	16	275422
Japan	10	8111849	10	150170
Jordan	45	655	45	773
Leeward Windward Islands			14	292308
Mexico			45	245
Netherlands Antilles	17	63956	11	267841
Netherlands	30	110903		
New Guinea			45	213
Nicaragua	32	4		
New Zealand	45	82		
Oman			32	295
Other Pacific Islands			63	454
O W AF			22	165
Panama	6	1678945	15	443177
Puerto Rico	10	223475	9	793740
Portugal			32	192
Qatar	45	1073		
Saudi Arabia	19	262444	9	1803486
Senegal	32	52	23	100
Sierra Leone	45	1		
Singapore	7	320286	8	292912

Table A3 continued

Country	Apple Juice		Cereal	
	MSV	Avg Lbs	MSV	Avg Lbs
Spain	45	56996		
Suriname			39	1583
Tanzania			45	91
Trinidad and Tobago			24	644095
Turks and Caicos Islands	28	705		
United Kingdom			25	424394
Venezuela			20	103769
West Samoa	45	780	41	582
Zaire			45	58

* Source: PIERS, Journal of Commerce.