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# An Illustration of the Need for an International Marketing Profile Database: The Case of Exported U.S. Apples

by

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## Abstract

International Marketing Profile Data (IMPD) show quantities, prices, and destinations of products originating in foreign countries. Available IMPD for apples has been validated rather well. Specific examples of IMPD usefulness to U.S. apple exporters are cited. In spite of its apparent value, IMPD seems more difficult to obtain from government sources than in the past. It may be worthwhile for exporters to initiate their own IMPD collection programs.

## Introduction

International Marketing profile data (IMPD) tells U.S. exporters where their strongest international competitors are located. Such data would provide U.S. exporters with quantities, prices, and destinations of products shipped from other countries for designated time periods. As will be shown in this paper, inferences might be drawn from these data as to the relative qualities of products from foreign locations.

IMPD would be especially useful to exporters of agricultural commodities, because location and season of production are important determinants of product quality, relative to quali-

ties of products from competing producing regions. For example, such data would provide U.S. apple exporters with quantities, prices, and destinations of apples exported from countries such as Chile, New Zealand, France, or Italy. U.S. apple exporters compete with apple exporters from these countries in overseas market areas such as Southeast Asia and Scandinavia.

In this paper, sources of IMPD are identified, along with some of the problems in collecting, validating, and processing it. An evaluation is then made of the usefulness of IMPD to U.S. exporters. Specific studies of exported fresh and cold stored (off-season) apples are used as examples for this evaluation. An evaluation is also made of the current availability of IMPD and ways by which it might be provided to exporters of apples and other agricultural commodities in the future.

## Collection and Validation of Data

Quarterly International Marketing Profile Data (IMPD) used in this study were available for the time period from 1979 to 1986 inclusive and are summarized in Table 1.

**Table 1**

**Cumulative Metric Tons of Apples Shipped in Various International Corridors**

Exporter	Quarter	----- Importer -----		
		Hong Kong (1979-86)	Taiwan (1982-86)	Sweden (1979-86)
United States	1	74,189	89,100	15,207
	2	32,793	26,836	1,260
	3	23,316	8,174	239
	4	57,280	76,256	249
Peoples' Rep. of China	1	12,704	-	-
	2	2,848	-	-
	3	22,846	-	-
	4	35,061	-	-
Chile	1	666	0	-
	2	13,717	26,405	-
	3	2,666	947	-
	4	0	0	-
New Zealand	1	0	0	-
	2	24,922	9,671	-
	3	3,422	0	-
	4	0	0	-
South Africa	1	0	0	-
	2	10,216	839	-
	3	1,184	0	-
	4	36	0	-
Argentina	1	-	-	18,913
	2	-	-	141,110
	3	-	-	0
	4	-	-	0
France	1	-	-	51,566
	2	-	-	25,751
	3	-	-	0
	4	-	-	0
Italy	1	-	-	19,338
	2	-	-	6,339
	3	-	-	0
	4	-	-	0

Source: Embassy data and State Inspectorate General of Customs, Republic of China, Data furnished by Stewart Trade Data Services, Rockville, MD

**Table 2**

**Quantity and Perceived Quality of Apples From Selected  
Exporting Countries (Cumulative, 1980-81 through 1986-87 Crop Years)**

<b>Exporting Country</b>	<b>Quantity<sup>1</sup> (M.T.)</b>	<b>Sample Price<sup>2</sup> \$/M.T.</b>	<b>Perceived Quality (Relative to U.S.)<sup>3</sup></b>
	<i>(All Destinations)</i>		
Peoples' Republic of China	382,000*	254 HK	Inferior
Chile	1,612,157	649 T	Superior**
New Zealand	908,859	653 HK	Comparable
South Africa	1,339,507#	654 HK	Inferior
Canada	428,708	733 T	Comparable
Japan	15,440	3638 T	Superior
South Korea	11,000	1337 T	Superior
Argentina	1,522,524	680 SW	Comparable
France	4,423,900	471 SW	Inferior
Italy	2,624,974	430 SW	Inferior
Spain	247,700	406 SW	Inferior
Netherlands	1,102,562	308 SW	Inferior
Hungary	2,805,326	364 SW	Inferior
United States		731 K	
(in-season)	1,320,528		
(off-season)	440,176		

\* Crop year 1986-87 data not available.

\*\* Superior in Taiwan, largest importer from Chile in this study.

HK CIF Hong Kong

T CIF Taiwan - includes a 75 percent duty on imported apples.

SW CIF Sweden

# Most of South Africa's exports go to locations other than Hong Kong, Taiwan, or Sweden.

**Sources:**

<sup>1</sup>*Horticultural Products Review* (U.S. Department of Agriculture, Foreign Agricultural Service, Circular Series Supplement 11-87), August, 1987, p. 55.

<sup>2</sup>Embassy data and State Inspectorate General of Customs, Republic of China, data furnished by Stewart Trade Data Services, Rockville, MD. See Table 3 for more price information.

<sup>3</sup>Questionnaire Survey Responses.

Table 3

Apple Prices, \$ U.S. per Metric Ton (Average, 1979 through 1986)

Seller	Buyer		
	Hong Kong	Taiwan*	Sweden
Peoples' Republic of China	254	-	-
Chile	623	649	-
New Zealand	653	789	-
South Africa	654	947	-
Canada	-	733	-
Japan	-	3,638	-
South Korea	-	1,337	-
Argentina	-	-	680
France	-	-	471
Italy	-	-	430
Spain	-	-	406
Netherlands	-	-	308
Hungary	-	-	364
United States	731	751	720

\* Average price for 1982-86 only, includes 75 percent duty on imported apples.

Source: Embassy data and State Inspectorate General of Customs, Republic of China, data furnished by Stewart Trade Data Services, Rockville, MD.

Some annual IMPD were available for 1987 and 1988. No such data were available (at a reasonable cost) for time periods after 1988. In the next section, U.S. export data for years and quarters subsequent to 1986 are discussed and evaluated in the light of observations made on the 1979-86 IMPD that were available. In this section, collection and validation methods for the 1979-86 IMPD are discussed.

Table 2 lists names of major apple exporting nations and quantities exported from each. These nations are grouped by quality level (taste and appearance) as perceived by foreign apple importers who responded to a questionnaire survey (1). Prices (in U.S. dollars adjusted for the current exchange rate) shown in Tables 2 and 3 are based upon declared value shipped between various pairs of countries, reported by importing or exporting countries' embassies (2), or in the case of Taiwan, the State Inspectorate General of Customs, Republic of China (SIGC) (2).

Declared value is CIF (cost, insurance, and freight), including transportation, at the dock of the importing country. It should also be noted that quarterly embassy data consistently added up to closely match the annual Foreign Agricultural Service data cited in Table 2.

The embassy data totals for U.S. apple exports were compared with the state of Washington's apple export records. The results of this comparison are shown in Table 4.

Washington's records were compiled by "crop year" (September 1 through August 31), instead of by calendar year or quarters as were the embassy data. Therefore, year-by-year comparisons could not be made. Table 4 shows cumulative totals for 1980-86 to minimize the effect of the time periods' starting at different times. This comparison of embassy and Washington state data helps to validate the embassy data and shows that

most U.S. apple exports come from the state of Washington.

**Table 4**

Comparison of U.S. and Washington State  
Apple Exports to Foreign Markets  
(In Metric Tons)

Market Country	U.S. Exports	Washington Exports
Hong Kong	155,094*	128,458 <sup>1</sup>
Taiwan	196,145**	192,598 <sup>2</sup>
Sweden	13,871*	14,044 <sup>1</sup>

Sources:

\*Embassy data furnished by Stewart Trade Data Services, Rockville, MD, October 1, 1980 through September 30, 1986.

\*\*State Inspectorate General of Customs, Republic of China, data furnished by Stewart Trade Data Services, Rockville, MD, October 1, 1982 through August 31, 1987.

<sup>1</sup>Export Recap, Washington State Dept. of Agriculture, September 1, 1980 through August 31, 1986, assuming 1 metric ton = 53 cartons

<sup>2</sup>Export Recap, Washington State Dept. of Agriculture, September 1, 1982 through August 31, 1987, assuming 1 metric ton = 53 cartons.

The qualitative information from the questionnaire respondents in Hong Kong, Taiwan, and Sweden, and the numerical (embassy or SIGC) data used in the tables shown in this paper served to validate each other. When importers responding to the questionnaire survey showed a preference for apples from one country over another, this preference was virtually always reflected in the numerical data. Relatively large total volumes were exported by a preferred country or the importer was willing to pay a higher price for apples from a preferred country vis-a-vis other exporting countries (see Table 2). Additional studies have been performed that helped reinforce this data validation (3).

## Identification of Competing Exporting Countries

The major exporters of apples that equal or exceed the quality of U.S. apples are New Zealand, Chile, and Argentina--all located in the southern hemisphere (see Table 2). Most of their fresh apples are ready to export in the second and third quarters of each year. Most of the U.S. fresh apple crop is ready for export in the fourth and first quarters (see Table 1). Japan, South Korea, and Canada are the only northern hemisphere countries that export apples of a quality comparable or superior to that of U.S. apples. In 1982-88, a total of about 1.5 million metric tons of fresh apples were exported from the United States and these other northern hemisphere countries in the first and fourth quarters. During these years, southern hemisphere countries exported a total of about 3.5 million metric tons of fresh apples of equivalent quality in second and third quarters (see Table 1). Assuming that consumer demand for apples remains constant year-round, U.S. apple exporters had a seasonal advantage that, for one reason or another, was not exploited as much as might have been possible.

As of 1986, about 25 percent of each year's U.S. apple crop was being stored under controlled atmosphere conditions and marketed in direct competition with fresh imports from southern hemisphere countries in second and third quarters (4). Controlled atmosphere or cold stored apples are reportedly perceived by buyers to have a poorer taste and texture than fresh apples (5).

International marketing profile data can help pinpoint overseas markets where more U.S. apples might be sold while they are still fresh. For examples, from 1979 through 1986, U.S. exporters sold more controlled atmosphere stored apples in Hong Kong during second quarters than fresh apples in Sweden during first quarters (see Table 5).

Table 5

Apple Imports by Quarter, Cumulative, 1979-1986  
(Metric Tons)

Quarter	To Hong Kong (From U.S.)	To Hong Kong (Total)	To Sweden (From U.S.)	To Sweden (Total)
1	74,189	87,559	15,207	133,663
2	32,793	94,279	1,260	191,338
3	23,316	53,434	239*	239*
4	57,280	92,377	249*	249*

\*During the time of this study, Swedish borders were closed to imports for most of the third and fourth quarters and parts of first quarters, according to questionnaire response.

Source: Embassy data furnished by Stewart Trade Data Services, Rockville, MD.

In spite of the Swedish government's policy during those years of restricting apple imports (6) for a period that could include the first half of each first quarter (January to mid-February), the first quarter Swedish import market seemed somewhat larger than the Hong Kong second quarter market (see Table 5). Swedish buyers were also willing to pay more for apples from the United States than for those from European suppliers (see Table 3). They found the U.S. apples similar to Argentine apples in quality and price (see Tables 2 and 3). Sweden imported more apples from Argentina in season than from anywhere else (see Table 1). U.S. apples, then, appear to be an acceptable substitute for Argentine apples in Sweden. Assuming that Swedish demand for fresh apples of U.S. quality remains constant all year, the United States might be able to sell more of its apples in Sweden while they are still fresh, according to the 1979-86 IMPD examined in this paper.

Shortly after 1986, the Swedish government removed its import restrictions on apples (7). U.S. apples can now be sold in Sweden during all of the fourth and first quarters, which are the fresh apple season for the northern hemisphere. Argentina's exporters can now market their apples

in Sweden during this entire southern hemisphere fresh second and third quarter season.

Argentine exporters would not have to compete with the Swedish domestic apple crop, as the U.S. exporters would. Sweden has a commercially sold domestic crop that is reportedly well liked by Swedish consumers (8). But this crop is small--about 7000 metric tons per year (8)--compared to the amount of apples Sweden imports. Given the Swedish perceived similarity of U.S. to Argentine apples, and assuming Swedish demand for this quality remains constant year around, annual U.S. sales in Sweden should climb to the level within about 7000 metric tons of the Argentine annual sales.

A partial comparison of these countries' Swedish sales is made in Table 6.

Although only Washington State Dept. of Agriculture data were available for U.S. exports to Sweden after 1986, the Washington data prior to 1986 closely matches the embassy data (see Table 4). Consequently, the counting methods used by the Washington Agriculture Dept. and the embassies are assumed to be sufficiently similar to document a substantial increase in U.S. apple exports to Sweden.

**Table 6**  
**Comparison of U.S. and**  
**Argentine Apple Exports to Sweden**

Crop Year	U.S. Exports To Sweden	Argentine Exports To Sweden
	- - - - (Metric Tons) - - - -	
1979-80	955 <sup>1</sup>	22655 <sup>1</sup>
1980-81	3820 <sup>1</sup>	22696 <sup>1</sup>
1981-82	4024 <sup>1</sup>	22005 <sup>1</sup>
1982-83	1650 <sup>1</sup>	16433 <sup>1</sup>
1984-85	1591 <sup>1</sup>	18858 <sup>1</sup>
1985-86	1337 <sup>1</sup>	17084 <sup>1</sup>
1986-87	3608 <sup>2</sup>	n/a
1987-88	12293 <sup>2</sup>	n/a
		1988: 17413 <sup>3</sup>
1988-89	10662 <sup>2</sup>	n/a
		1989: 19858 <sup>3</sup>
1989-90	9611 <sup>2</sup>	n/a
		1990: 20857 <sup>3</sup>
1990-91	14457 <sup>2</sup>	n/a

Sources:

<sup>1</sup>Embassy data furnished by Stewart Trade Data Services, Rockville, MD, October 1 through September 30.

<sup>2</sup>Export Recap, Washington State Dept. of Agriculture, 1986-91, September 1 through May 31, assuming 1 metric ton = 53 cartons.

<sup>3</sup>Svensson, Bo J., Washington State Apple Commission, Vasteras, Sweden, October 8, 1991, by correspondence. Swedish import totals from Argentina by calendar year.

After 1986, Swedish imports from the United States did seem to rise to a level close to 7000 metric tons short of the quantities Sweden imported from Argentina in the years 1988 through 1990. Based on the popularity of similar

quality fresh second and third quarter apples from Argentina, 1979-86 IMPD helped forecast the amount of fresh first and fourth quarter apples that the United States could sell in Sweden. IMPD helped to estimate quality levels (United States vis-a-vis Argentina) by providing average value or prices, relative to quantities shipped.

Annual apple shipments from Argentina to Sweden for 1988-90 were obtained from a Washington Apple Commission representative in Sweden (8), not from an IMPD data base. Having IMPD available after 1986 makes it possible to obtain some measure of whether the United States is reaching its full Swedish apple sales potential in the early 1990s.

Considering the abundance of U.S. equivalent quality apples originating from southern hemisphere countries (see Table 2), one might question why U.S. apple growers attempt to sell any of their cold-stored apples at all during the southern hemisphere fresh season. One possible explanation is that transportation services are more reliable from the U.S. west coast to the orient than from South America or New Zealand (9).

Other possible explanations for U.S. strength in off-season markets may be found with the help of IMPD. Table 7 shows no evidence of any downward trend in off-season U.S. sales in Hong Kong. The fastest growing competing exporting country in Hong Kong (during 1979-86) was Chile. But according to IMPD data presented in Figure 1, Chile is building its Hong Kong business by entering markets largely not being served by the United States or other long-time exporters to Hong Kong. Additional support for this contention that Chile is not as great a threat to U.S. sales in Hong Kong as some of the other competing exporters--even though their growth is less dramatic--is presented in the next section on price sensitivity.



Table 7

Shares of the Second-Quarter Hong Kong Apple Market  
(Volumes in Metric Tons)

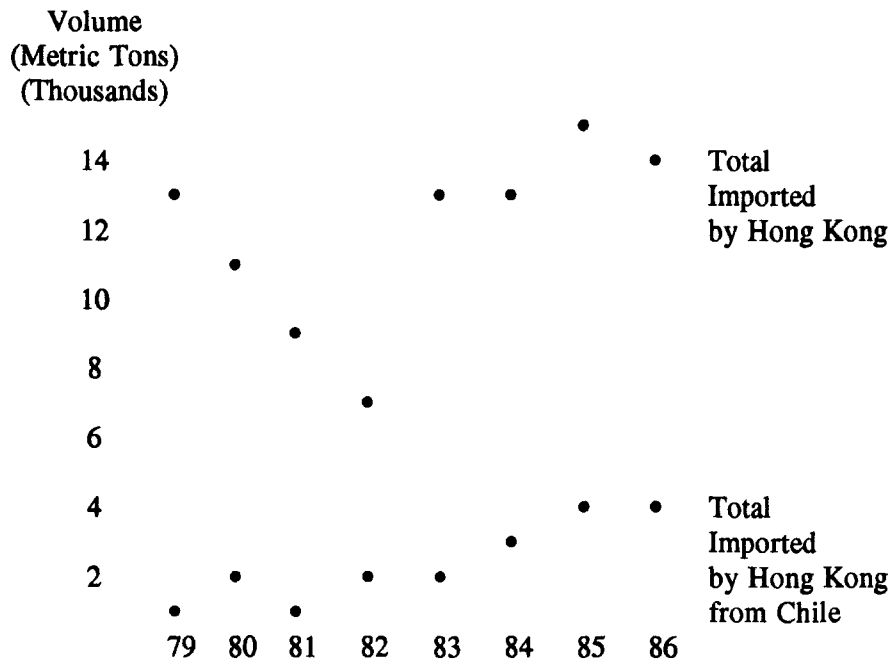
Importer	--- 1979 ---		--- 1983 ---		--- 1986 ---		--- 1991 ---	
	Vol.	%	Vol.	%	Vol.	%	Vol.	%
United States	2,854	22	7,367	58	2,709	19	8,856*	n/a
Chile	699	5	55	0	4,264	30	n/a	n/a
Peoples Republic of China	1,087	8	11	0	0	0	n/a	n/a
New Zealand	3,890	30	2,164	17	4,916	34	n/a	n/a
South Africa	1,170	9	1,204	9	1,762	12	n/a	n/a
Other	3,408	26	2,057	16	718	5	n/a	n/a
TOTAL	13,108	100	12,858	100	14,369	100	n/a	n/a

\*1991 Second Quarter volume from Export Recap, Washington State Dept. of Agriculture.

Source: Embassy data furnished by Stewart Trade Data Services, Rockville, MD, unless otherwise documented.

Figure 1

Second-Quarter Apple Imports  
By Hong Kong and From Chile



Source: Embassy data furnished by Stewart Trade Data Services, Rockville, MD.

## Price Sensitivity

Regression analysis was conducted to test for the effects of selected competing exporting countries' apple price upon the U.S. market share in certain importing countries (10). French, Italian, and Argentine prices were all found likely to affect the U.S. market share in Sweden. The lower French and Italian prices appeared to compensate for the perceived lower quality of their product, relative to the U.S. product. Also, New Zealand and South Africa prices were found likely to affect the U.S. market share in Hong Kong, while Chilean prices were found unlikely to do so(10). This situation supports the contention that Chile is not cutting into U.S. markets in Hong Kong, as South Africa or New Zealand do from time to time. Other research shows New Zealand to be a formidable competitor to the United States (11).

## Scarcity of Data

Potential usefulness for international marketing profile data has been shown here for location of potential new or expanded overseas markets and for detection of possible relationships between competing exporting nations' prices and U.S. overseas market share. But such data are surprisingly becoming more difficult to obtain. The U.S. Department of Agriculture has stopped publishing its international marketing profile books. These books gave annual IMPD for many agricultural commodities. Several other major sources of statistical international trade data were consulted. None provided IMPD quarterly or annually. One international trade consultant has commented that demand for data on imports by Hong Kong, Taiwan, or Sweden has recently been insignificant (12). Consequently, some potential export markets for the United States may be going unnoticed.

## Conclusions

Questionnaire surveys have been shown to be useful to validate international marketing profile data. International marketing profile data appear useful to U.S. apple exporters in that it can show and how much and where more of the U.S. export crop could be sold while fresh, as well as

help give details on what cold storage (off-season) sales opportunities still exist. It also helps identify the markets where U.S. sales are the most sensitive to changes in competing exporting country's prices. It is very possible that such data would be useful in similar ways to exporters of other agricultural commodities. But in spite of its apparent usefulness, international marketing profile data have become more difficult to obtain in recent years.

## For the Future

It would then seem worthwhile for agricultural exporters to make greater use of international marketing profile data to find foreign markets for their products. Collectively, they would be more likely to be able to furnish funds to a public or private agency to have such data collected than if they individually sought such data. More extensive use of questionnaire surveys such as shown here can help to validate what IMPD are available.

Also, cases seem to exist where international cooperation is better than competition. For example, apple growers in New Zealand or Argentina might voluntarily exchange information on volumes, values, and destinations of their products with U.S. growers, to help each better serve the other's off-season markets. Such exchanges could help increase the efficiency of world food distribution systems. Voluntary data exchange agreements may become more important in the future if governments become less involved in providing their country's import/export data.

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