

# U.S. Exports of Value-added Wheat Products: Recent Trends and Contributing Factors

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World trade in high-value agricultural products has increased three to four fold since 1970. Between 1986 and 1992, world trade in high-value agricultural exports reached record highs each year (FAS, 1993). Growing incomes worldwide, changing household and work force compositions, changing diets, and technological improvements in transportation, marketing, and product handling are credited for much of these gains (Harrison, 1992; Tomoda, 1992).

Through the mid-1980s, high-value agricultural products accounted for about one-third of the value of U.S. agricultural exports. Since 1985, this share has been rising; in fiscal year 1991, the value of U.S. exports of high-value products exceeded traditional bulk products (MacDonald, 1991). This trend continues into 1993 (FAS, 1993). Considerable interest exists to promote value-added product exports. World markets for commodities are maturing while markets for value-added products are growing. However, value-added product exports must compete not only with foreign competitors, but they must also compete with U.S. commodity exports.

Bulk and value-added wheat comprised about 10% of U.S. agricultural export value in 1991. International trade in highly processed wheat products, such as bakery products, pasta, and breakfast cereals, increased dramatically in the 1980s. Despite these increases in wheat product exports, the quantity and value remains much smaller than that of wheat exports. For example, the total quantity of wheat exported in 1991 was 31 million

metric tons (MT) at a value of \$3.35 billion whereas the total quantity and value of flour was 974,000 MT and \$183 million, respectively. The quantity and value of the highly processed products were 217,000 MT and \$389 million, respectively.

While information is available about U.S. and international trade in wheat and flour, limited information exists about trade in highly processed wheat products. The purpose of this report is to supplement existing information for wheat and flour by developing comparable information for highly processed wheat products. Trends in U.S. exports of highly processed wheat products are presented and related to demographic and trade policies. This information can be used to consider questions such as which are the best growth markets for high-value wheat products, what is the appropriate mode of entry into foreign markets, and so forth.

Data are from 1983 to 1991, the latest years of published statistics from the U.S. Bureau of Census. All quantity data are reported in metric tons (MT), and all values are reported in U.S. dollars, free-alongside-ship. All exports are reported according to the harmonized system of reporting which the United States adopted in 1989 and which most major exporting and importing countries use.

Four categories of highly processed wheat products that have a cereal grain component — pasta products, bakery products, breakfast cereal products, and snack products — are considered. For all product categories discussed, the countries and regions reported import more than 90% of U.S. exports.

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## Trends in U.S. Exports of Value-added Wheat Products

The quantity and value of wheat product exports has increased significantly between 1983 and 1991. Growth rates in quantities exported range from 108% for snacks to 298% for breakfast cereals. In 1983 the total quantity and total value of wheat products exported was 72,000 MT and \$97 million dollars, respectively. In 1991 the total quantity of wheat product exports was 217,000 MT at a value of \$389 million, representing an overall 203% increase in quantity exported and a 207% increase in the value

of exports, adjusted for inflation. Bakery products is the most important category of highly processed wheat product exports, accounting for 47% of the quantity exported in 1991 and 46% of the value.

Bakery product exports have increased 176% in quantity exported, from 37,000 MT at a value of \$47 million in 1983 to 102,000 MT at a value of \$179.5 million in 1991 (Figure 1). Canada is the leading importer of U.S. bakery products with a 68% share of U.S. bakery exports in 1983 and a 65% share in 1991 (Figure 2). U.S. exports to Canada grew 162% from 25,000 MT

in 1983 to 66,000 MT in 1991. Other markets with an increase in quantity include Mexico, the European Community (EC), Asia, Latin and South America, and the Middle East. In terms of U.S. export share, Mexico, Asia, and the EC increased in importance while the Caribbean, the Middle East, and Canada decreased.

Breakfast cereals is the second most important category of wheat product exports, accounting for 33% of the quantity and 33% of the value of exports in 1991. Breakfast cereals, with a 298% increase in quantity exported from 1983 to 1991, has shown the most dramatic growth. In 1983, breakfast cereal exports were 18,000 MT, valued at \$25 million. By 1991 breakfast cereal exports had increased to 73,000 MT, valued at \$127.5 million (Figure 3). All of the countries presented increased the quantity of breakfast cereal imports from the U.S. from 1983 to 1991. The largest importer of U.S. breakfast cereals was Canada. U.S. exports to Canada increased 410% over this time period with Canada's share of U.S. exports increasing from 33% to 42% (Figure 4).

Pasta exports grew from 10,000 MT in 1983, valued at \$14 million, to 30,000 MT in 1991 valued at \$45 million, a 190% increase in quantity exported (Figure 5). Unlike bakery and breakfast cereal products, pasta has not shown widespread growth in U.S. exports. Also, pasta accounted for only 14% of the quantity of U.S. exports of processed wheat products and 12% of the value in 1991. Canada was the only country with significant growth. In 1983, Canada imported just over 3,000 MT, 31% of U.S. exports; Canadian imports climbed to nearly 25,000 MT in 1991, 84% of U.S. exports (Figure 6). The only other countries and regions showing increases in total quantity imported from 1983 to 1991 were Mexico, the EC, and the Caribbean. The Middle East was a declining market. In 1983, the Middle East accounted for a 25% share of U.S. exports; in 1991 this share was only 2%.

### U.S. EXPORTS OF BAKERY PRODUCTS TO THE WORLD AND TO CANADA

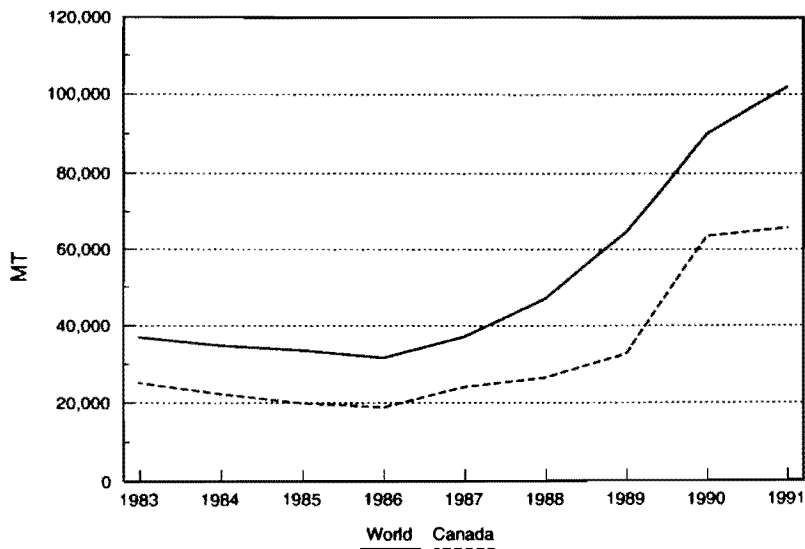


Figure 1. U.S. exports of bakery products to the world and to Canada.

### U.S. BAKERY EXPORTS, 1983 AND 1991, BY PERCENT TO COUNTRY/REGION

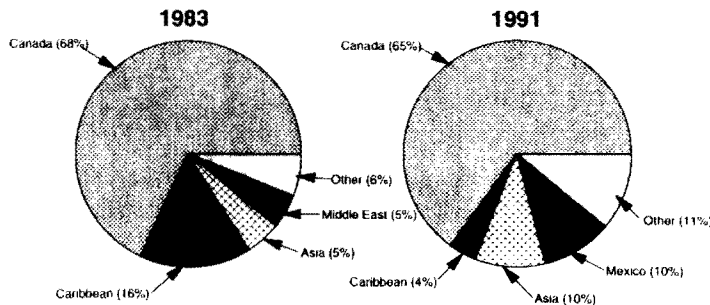


Figure 2. U.S. bakery exports, 1983 and 1991, by percent to country/region.

Snacks is the smallest category included, with only 13,000 MT exported in 1991. Snack quantities exported in 1983 were 6,300 MT at a value of \$10.5 million, increasing to 13,000 MT in 1991 at a value of \$34.5 million for a 108% increase in the quantity exported (Figure 7). The amount exported to Canada has steadily increased. In 1983, this amount was 2,460 MT, 39% of U.S. exports. In 1990, this amount was 3,862 MT, 41% of U.S. exports; in 1991, it was 6,478 MT, 49% of U.S. exports

(Figure 8). A significant growth market during this time has been the EC, whose share has increased from 9 to 19%. Other growing markets include Asia, Mexico, and the Middle East. Exports to the Caribbean varied over this time period. From 1983 to 1985 its average imports were 665 MT; from 1986 to 1989, the average was 783 MT; in 1990 and 1991, the average was 569 MT, an overall decline of 13%. Its share of total U.S. snack exports has dropped from 11% to 5%.

### Contributing Factors

Several factors contribute to increased U.S. exports of highly processed wheat products. Included among these are growing incomes worldwide, changing household and work force compositions, changing diets, increasing urbanization, and technological improvements in logistics and marketing. Trade policies, foreign competition, and differing firm strategies also affect U.S. exports. Also, many U.S. food products must be reformulated, packaged, and labeled according to preferences and regulations in the importing country before they are successfully marketed globally.

As per capita incomes increase, populations satiate their desire and need for calories. They first seek greater variety in their diet, including increased protein and substitution of wheat products for coarse grains. Later, they seek added services, such as convenience, in their food purchases. Globalization of diets may be occurring as the dynamics of these forces change markets.

The countries and regions covered in this article are highly diverse. Canada, Japan, and the EC are highly developed markets. The average gross national product per capita (GNP/cap) of these countries was \$20,804 in 1990. This group has the highest daily per capita calorie and protein intake. Many of the changes linked to increased purchases of highly processed goods, such as satiation of caloric intake, adequate protein and variety in the diet, women in the labor force, and decreasing household size, have already occurred.

Hong Kong and Singapore occupy a unique niche. They are 94% and 100% urbanized, respectively, and had an average GNP/cap in 1990 of \$11,325, which increased rapidly in the late 1980s. These two countries are entry ports for U.S. exports going to other countries in Asia, such as China, Indonesia, and Malaysia. Thus, exports to these countries may also depend on other countries' demographic factors.

### U.S. EXPORTS OF BREAKFAST CEREALS TO THE WORLD AND TO CANADA

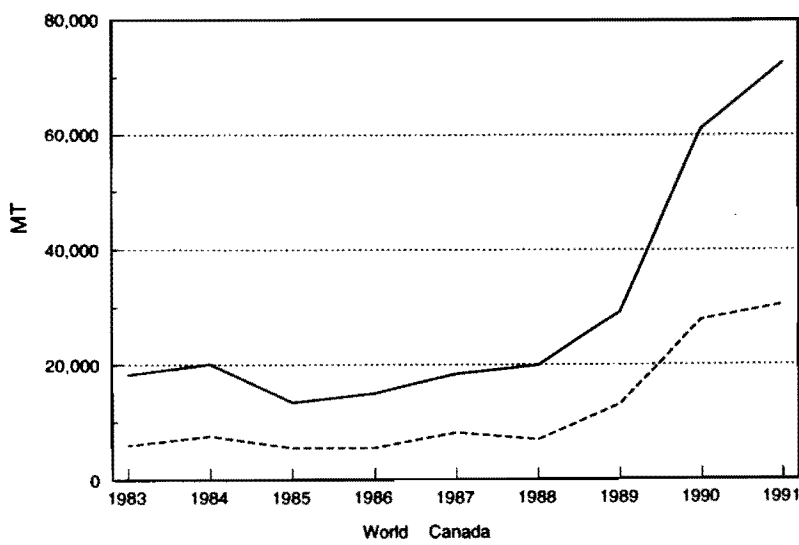


Figure 3. U.S. exports of breakfast cereals to the world and to Canada.

### U.S. BREAKFAST CEREAL EXPORTS, 1983 AND 1991, BY PERCENT TO COUNTRY/REGION

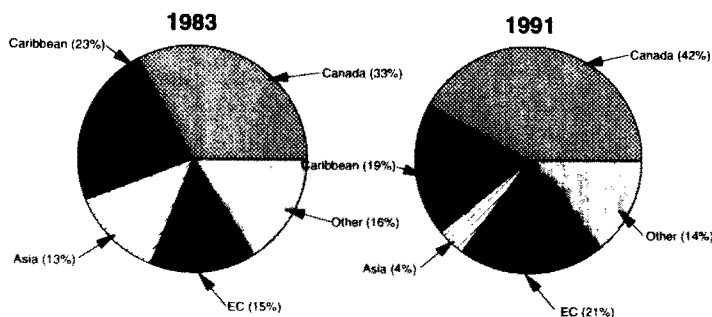


Figure 4. U.S. breakfast cereal exports, 1983 and 1991, by percent to country/region.

The real GNP/cap increased rapidly in Indonesia, Malaysia, Thailand, and South Korea in the late 1980s, although all have lower GNP/cap than other countries discussed. The Philippines also has had an increase in real GNP/cap, although not as rapid. On average, this group has had significant increases in daily caloric and protein intake. Although these countries are less urbanized, they had the greatest increases in urbanization during the 1980s.

The remaining three countries/regions, Mexico, Saudi Arabia, and the Caribbean, are unique. The Caribbean, for example, has great diversity in the size and wealth of individual islands and is largely influenced by tourism. However, the Caribbean shares common characteristics with other developing countries, such as increased daily per capita caloric and protein intake and increased urbanization. The real GNP/cap for Mexico and Saudi Arabia have decreased slightly. Mexico shows relatively no change in caloric or protein intake, although its caloric intake is high at 3,052 calories per capita per day. Saudi Arabia has shown large increases in caloric and protein intake. Both are increasing in urbanization.

Two factors of considerable importance in the purchases of highly processed foods are female participation in the labor force and household composition. General trends are toward increasing participation of women in the labor force and declining household size. While the U.S., Canada, and many European countries saw large changes in these two factors in the 1970s and 1980s, many developing countries are just beginning to exhibit similar trends. For example, in the Caribbean and Mexico there has been a steady increase in the participation of women in the labor force with 8% and 6% increases, respectively, during the 1980s. Female participation in the work force in Japan, Korea, and Hong Kong is estimated in the range of 40 to 60%.

The U.S. is a relatively minor exporter in the world market for many high-value products, including those presented here. For example, between 1983 and 1991, the U.S. world share in bakery products was estimated at about 2 to 5%. The U.S. share of the world trade in breakfast cereals was estimated at about 17% in 1990.

The largest exporter of high-value and highly processed products is the EC. Approximately 77% of the EC's agricultural product exports are high-value. Of

the EC's high-value exports, an estimated 64% are highly processed. The EC is the largest competitor for the United States in the export of highly processed wheat products. For example, the EC has approximately a 30% share in the Caribbean and a 50% share in the Canadian market. An exception is the Asian markets, where competition is largely from other Asian countries and Australia.

Several aggregate trade and agricultural policies impact product trade and competition. The pending North

### U.S. EXPORTS OF PASTA TO THE WORLD AND TO CANADA

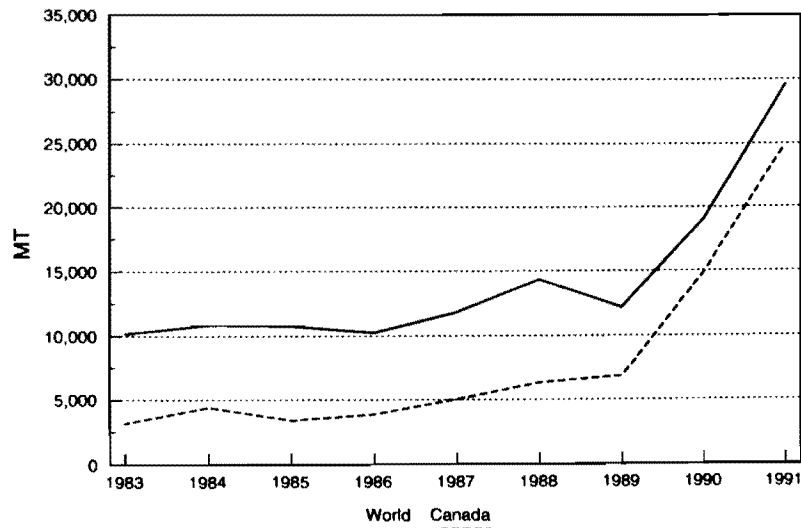


Figure 5. U.S. exports of pasta to the world and to Canada.

### U.S. PASTA EXPORTS, 1983 AND 1991, BY PERCENT TO COUNTRY/REGION

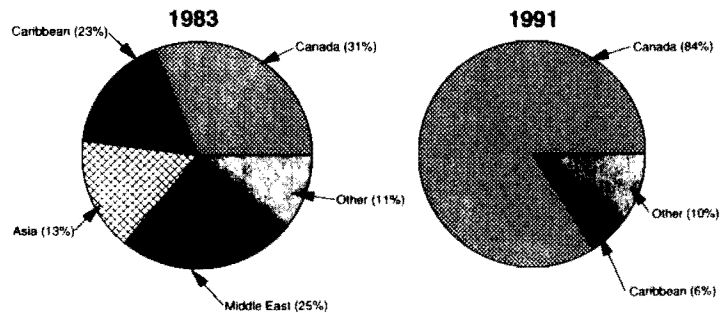


Figure 6. U.S. pasta exports, 1983 and 1991, by percent to country/region.

American Free Trade Agreement (NAFTA) and GATT agreement will potentially impact export quantities as well as the distribution of exports between commodities and products. The U.S./Canada Free Trade Agreement (CUSTA) reduced tariffs on products from 10% over a five year period, which could be one factor in the increased exports to Canada.

More importantly, however, before 1989 Canada operated under a two-price system on wheat. During much of the 1980s Canadian domestic wheat prices exceeded those in the United States,

thereby increasing ingredient costs for Canadian food manufacturers. In 1989, a North American wheat price was defined (in relation to the Minneapolis Grain Exchange price), which applies to all sales to domestic processors. In concept, this should eliminate this source of competitive disadvantage for Canadian produced value-added wheat products.

During the time period reported in this article, there were import licenses on wheat exported to Mexico that were restrictive. However, products were allowed to move freely at tariffs of typically 10%. This favored product trade relative to

local processing. Under the NAFTA, tariffs on wheat and products, each to be reduced over time, will replace licenses.

Other trade policies that impact high-value trade include the EC's restitutions on flour and subsidies for processed wheat products, i.e., restitutions in proportion to the flour components of products (the so called *value-added regime*). This has resulted in the growth in EC flour exports during the past decade. In addition, this may be part of the reason for the expansion and growing dominance of EC product exports. As an example, EC pasta exports have increased, resulting in a controversy between the U.S. and EC in pasta trade. U.S. pasta exports to the Middle East, for example, have nearly disappeared since 1983.

The U.S. Export Enhancement Program (EEP) was originally conceived to enhance exports of products as well as commodities. However, the program has focused on commodities. While EEP has been used to some extent on flour and semolina, no other assistance has been provided for wheat product exports. An important side effect of the EEP program is that it results in higher domestic prices for processors, thereby favoring non-U.S. processing.

In most importing countries, the level of protection of products generally increases as the level of processing increases. For illustration, the average *ad valorem* tariffs on wheat, flour, and highly processed wheat products to Japan are 20, 18.9, and 28.5%, respectively. Similar tariff structures exist for Korea, Indonesia, Malaysia, Philippines, Taiwan, and Thailand.

Commodity trade will continue to dominate wheat product exports from the United States for a number of reasons. In most cases, logistics favor commodity trade and shipments. However, commodity trade is subject to limited growth, intercountry and interfirm competition, and political intervention. More importantly, as food processing firms face limited growth in the U.S. domestic market, growth must necessarily come from the international market.

### U.S. EXPORTS OF SNACK PRODUCTS TO THE WORLD AND TO CANADA

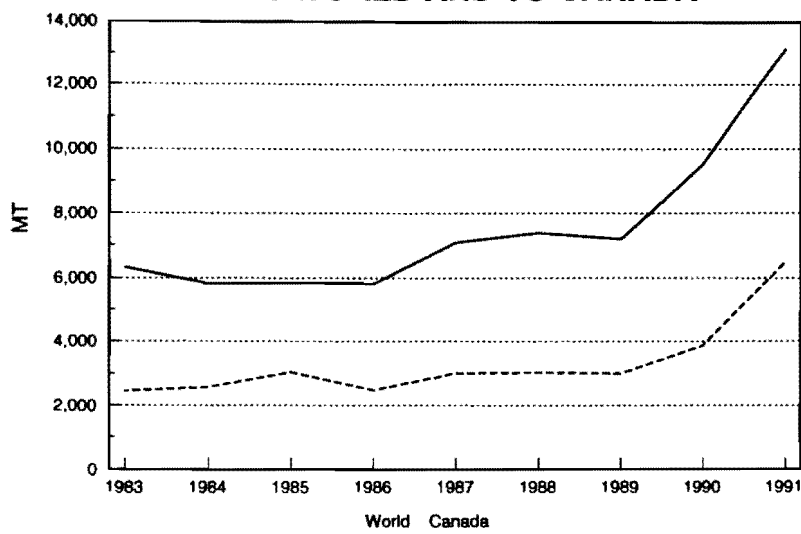


Figure 7. U.S. exports of snack products to the world and to Canada.

### U.S. SNACK EXPORTS, 1983 AND 1991, BY PERCENT TO COUNTRY/REGION

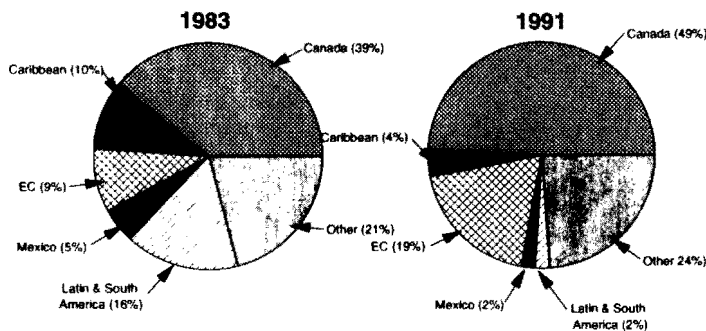


Figure 8. U.S. snack exports, 1983 and 1991, by percent to country/region.

In many markets, the entry mode for U.S. firms may be through investment, joint ventures, acquisitions, partnerships, or licensing rather than through direct exports. Of the 45 such interfirm arrangements listed in *Milling and Baking News* since 1990, eight involved U.S. firms expanding overseas; five involved non-U.S. firms only; two involved overseas firms entry into the U.S. Examples include Kellogg's investment in a breakfast cereal plant in India; a joint venture between Sara Lee and Grupo Industrial Bimbo for product distribution in Mexico; and Cereal Partners Worldwide's (General Mills and Nestle) investment (\$45.6) in a cereal plant in Mexico.

Competition also comes from importing countries as their food processing sector develops. Examples of this can be seen in Asia, where the processing industry is growing fast, including a boom in instant noodles and bakery products. U.S. bakery exports to Japan increased over 1,000% between 1983 and 1989 before falling 68% by 1991. This is largely attributable to the development of Japan's baking industry.

## Conclusions

U.S. exports of highly processed wheat products have increased in quantity exported, ranging from a 108% increase for snack products to a 298% increase for breakfast cereals since 1983. Canada is the largest market for U.S. highly processed wheat products. The percentage of U.S. exports of bakery products, breakfast cereals, pasta, and snacks exported to Canada were 65%, 42%, 84%, and 49%, respectively, in 1991. Canada, the Caribbean, Mexico, and Latin and South America have combined shares of U.S. exports that range from 57% in snack products to 92% in pasta products. Canada, Mexico, the EC, and Asia have all had above average growth in their imports of one or more of these U.S. wheat products.

Many factors contribute to the increased U.S. exports of highly processed wheat products, including worldwide income growth, changing household and work force compositions, increased urbanization, changing diets and trade policies, and technological improvements in logistics and marketing. The largest and/or fastest growing markets for U.S. wheat product exports may change in the future. Many countries in Asia, Eastern Europe, and Latin and South America are just beginning to exhibit the characteristics that affect the consumption of highly processed foods. Further analysis of stages of development and imports of U.S. wheat products could be used to predict future markets for U.S. wheat product exports.

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