



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# VALUE-ADDED WHEAT PRODUCT TRADE

Jennifer M. Onnen  
William W. Wilson



Department of Agricultural Economics ! Agricultural Experiment Station  
North Dakota State University ! Fargo, ND 58105-5636

## ACKNOWLEDGMENTS

The research reported in this paper was motivated in part by a research grant from William C. Nelson, through the U.S. Department of Agriculture's North Plains International Trade Program, and a contribution by the United Spring Wheat Processors. Helpful comments were received from Frank Dooley, David G. Kraenzel, and Tim Petry. However, errors and omissions remain the authors' responsibility. Charlene Lucken provided editorial assistance, and Leah Thomas prepared the manuscript.

We would be happy to provide a single copy of this publication free of charge. You can address your inquiry to: Carol Jensen, Department of Agricultural Economics, North Dakota State University, P.O. Box 5636, Fargo, ND, 58105-5636, Ph. 701-231-7441, Fax 701-231-7400, e-mail [cjensen@ndsuent.nodak.edu](mailto:cjensen@ndsuent.nodak.edu). This publication is also available electronically at this web site: <http://agecon.lib.umn.edu/ndsuent.html>.

### NOTICE:

The analyses and views reported in this paper are those of the author. They are not necessarily endorsed by the Department of Agricultural Economics or by North Dakota State University.

North Dakota State University is committed to the policy that all persons shall have equal access to its programs, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Information on other titles in this series may be obtained from: Department of Agricultural Economics, North Dakota State University, P.O. Box 5636, Fargo, ND 58105. Telephone: 701-231-7441, Fax: 701-231-7400, or e-mail: [cjensen@ndsuent.nodak.edu](mailto:cjensen@ndsuent.nodak.edu).

Copyright © 1998 by Jennifer M. Onnen and William W. Wilson. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

# TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES .....	ii
LIST OF FIGURES .....	ii
ABSTRACT .....	v
HIGHLIGHTS .....	vi
1. INTRODUCTION .....	1
2. PRODUCT MARKET CHARACTERISTICS .....	1
2.1. Data Sources .....	1
2.2. Product Import Market Size .....	2
2.2.1. Total Global Value of Import Product Markets .....	2
2.2.2. Import Market Quantities of Breakfast Cereals .....	4
2.2.3. Import Market Quantities of Macaroni .....	4
2.2.4. Import Market Quantities of Bread/Biscuits .....	6
2.2.5. Import Market Quantities of Pastries .....	6
2.3 Import Market Growth .....	10
2.3.1. Breakfast Cereals Market Growth .....	10
2.3.2. Macaroni Import Growth .....	13
2.3.3. Bread/Biscuit Import Growth .....	15
2.3.4. Pastry Import Growth .....	17
3. EXPORT COUNTRY COMPARISONS .....	20
3.1. Breakfast Cereal Export Market .....	20
3.2. Macaroni Export Market .....	21
3.3. Bread/Biscuit Export Market .....	22
3.4. Pastry Export Market .....	24
4. MARKET SHARE ANALYSIS .....	25
4.1. Regional Import Market Share Analysis .....	25
4.1.1. Regional Areas .....	26
4.1.2. Regional Import Market Shares for Breakfast Cereals .....	26
4.1.3. Regional Import Market Shares for Macaroni .....	29
4.1.4. Regional Import Market Shares for Bread/Biscuits .....	30
4.1.5. Regional Import Market Shares for Pastries .....	31
4.2. Country Import Market Share Analysis .....	33
4.2.1. Country Import Market Shares for Breakfast Cereals .....	33
4.2.2. Country Import Market Shares for Macaroni .....	34
4.2.3. Country Import Market Shares for Bread/Biscuits .....	38
4.2.4. Country Import Market Shares for Pastries .....	41
5. CONCLUSION .....	43
REFERENCES .....	45

## LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	World Export Market Shares for Leading Exporting Countries, 1989-1991 . . . .	26
2	The Largest Importing Regions and Member Countries . . . . .	27

## LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	World Imports of Breakfast Cereals (SITC 04812), Macaroni (SITC 0483), Bread/Biscuits (SITC 04841), and Pastries (SITC 04842), 1985-95. . . . .	2
2	U.S. Exports of Breakfast Cereals (SITC 04812), Macaroni (SITC 0483), Bread/Biscuits (SITC 04841), and Pastries (SITC 04842), 1985-95 . . . . .	3
3	Quantity ( <i>mt</i> ) of Breakfast Cereals Imported in 1995 . . . . .	5
4	Quantity of Macaroni Imported in 1995 . . . . .	7
5	Quantity of Bread/Biscuits Imported, 1995 . . . . .	8
6	Quantity of Pastries Imported, 1995 . . . . .	9
7	Breakfast Cereals Import Market Growth for Ten Fastest Growth Countries, 1992-95 . . . . .	11
8	Absolute Growth in Breakfast Cereals Import Quantity of Ten Highest Growth Countries, 1992-95 . . . . .	12
9	Net Percentage Shift of Breakfast Cereal Import Quantities for Largest Positive and Negative Net Percentage Shift Countries, 1992-95 . . . . .	12
10	Macaroni Import Market Quantity Growth for Ten Fastest Growth Countries, 1992-95 . . . . .	13
11	Absolute Growth in Macaroni Import Quantity of Ten Highest Growth Countries, 1992-95 . . . . .	14
12	Percentage Net Shift of Macaroni Import Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95 . . . . .	15

## LIST OF FIGURES (CONT.)

<u>Figure</u>	<u>Page</u>
13	Bread/Biscuit Import Market Quantity Growth for Ten Fastest Growth Countries, 1992-95 ..... 15
14	Absolute Growth in Bread/Biscuit Import Quantity of Ten Highest Growth Countries, 1992-95 ..... 16
15	Percentage Net Shift of Bread/Biscuit Import Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95 ..... 17
16	Pastry Import Market Quantity Growth for Ten Fastest Growth Countries, 1992-95 ..... 18
17	Absolute Growth in Pastry Import Quantity of Ten Highest Growth Countries, 1992-95 ..... 19
18	Percentage Net Shift of Pastry Import Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95 ..... 19
19	Percentage of World Breakfast Cereal Export Quantity, 1995 ..... 20
20	Percentage Net Shift of Breakfast Cereal Export Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95 ..... 21
21	Percentage of World Macaroni Export Quantity, 1995 ..... 21
22	Percentage Net Shift of Macaroni Export Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95 ..... 22
23	Percentage of World Bread/Biscuit Export Quantity, 1995 ..... 23
24	Percentage Net Shift of Bread/Biscuit Export Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95 ..... 23
25	Percentage of World Pastry Export Quantity, 1995 ..... 24
26	Net Percentage Shift of Pastry Export Quantities for Largest Positive and Negative Net Percentage Shift Countries, 1992-95 ..... 25

## LIST OF FIGURES (CONT.)

<u>Figure</u>	<u>Page</u>
27	Percent of Regional Breakfast Cereal Imports, by Largest Importing Regions and Exporting Countries, 1989-91 ..... 28
28	Percent of Regional Macaroni Imports, by Largest Importing Regions and Exporting Countries, 1989-91 ..... 29
29	Percent of Regional Bread/Biscuit Imports, by Largest Importing Regions and Exporting Countries, 1989-91 ..... 31
30	Percent of Regional Pastry Imports, by Largest Importing Regions and Exporting Countries, 1989-91 ..... 32
31	Percent of National Breakfast Cereal Imports, by Largest Importing Countries and Exporting Countries, 1989-91 ..... 35
32	Percent of National Breakfast Cereal Imports, by Largest Percentage Net Shift Importing Countries and Largest Exporting Countries, 1989-91 ..... 36
33	Percent of National Macaroni Imports, by Largest Importing Countries and Exporting Countries, 1989-91 ..... 36
34	Percent of National Macaroni Imports, by Largest Percentage Net Shift Importing Country and Largest Exporting Countries, 1989-91 ..... 38
35	Percent of National Bread/Biscuit Imports, by Largest Importing Countries and Exporting Countries, 1989-91 ..... 39
36	Percent of National Bread/Biscuit Imports, by Largest Percentage Net Shift Importing Countries and Largest Exporting Countries, 1989-91 ..... 40
37	Percent of National Pastry Imports, by Largest Importing Countries and Exporting Countries, 1989-91 ..... 41
38	Percent of National Pastry Imports, by Largest Percentage Net Shift Importing Countries and Largest Exporting Countries, 1989-91 ..... 43

## **ABSTRACT**

This study evaluated international trade of value-added wheat products. Analyzed were market size and growth rate by country for each product group. Shift share analysis was used to examine changes in market shares for each value-added wheat product group. Major international exporters were identified for each product group, and market shares held by the major exporters for specific importing markets were analyzed.

**Key words:** Bakery, international trade, market size, market growth, shift-share analysis, market share, exports, value-added.



## HIGHLIGHTS

Global trade in value-added wheat products has been growing over the past several years. U.S. exports and imports of value-added wheat products have also grown rapidly. This study analyzes trade data to identify import market shares, major exporting countries, and product market characteristics for value-added wheat products.

In terms of global trade value, the fastest growing value-added wheat product group from 1985 to 1995 was bread/biscuits. Macaroni imports had the second fastest market growth, followed by breakfast cereals and pastries. The largest product market was bread/biscuits, which had \$1 billion more in global imports in 1995 than pastries. The macaroni market had smaller value of trade in 1995 than pastries, and breakfast cereals had the lowest trade value in 1995.

The United States and the countries of Western Europe were typically the major exporters for each product. Despite the growth in U.S. exports of value-added wheat products, U.S. exports have not grown as rapidly as the average world export growth in any of the product groups. This resulted in the United States having a negative percentage net export shift, meaning that the United States is losing market share.

The United States, Germany and France-Monaco are the top three importers in each value-added wheat product category. In three of the four product groups U.S. imports were growing at a faster rate than the world average.

The countries of Western Europe receive a majority of their imports from other Western European countries in every product group. The United States market share was above 3 percent share in only one instance for Western European markets studied. In the United Kingdom, the United States had the largest share of the import market for breakfast cereals, 25 percent.

Implications of this study for the private firm involve market selection and identification of major competitor exporters. By focusing on major competitors in each product category, companies can study their effective marketing processes. This study shows which are the larger import markets, the highest growth import markets, and those import markets with the highest percent net shift. This information can be used to calculate risks for each market according to the firm's own weights for market size and growth. Further study of less aggregate product categories and information on other market characteristics, such as national income or population, is needed for more complete risk assessments.

# VALUE-ADDED WHEAT PRODUCT TRADE

Jennifer M. Onnen and William W. Wilson\*

## 1. INTRODUCTION

World trade in value-added food products and agricultural commodities has been growing rapidly over the past few decades. Between 1972 and 1993, world trade of agricultural value-added products and commodities grew 486 percent. However, value-added food's share of total agricultural trade increased from 58 percent to 67 percent (Ruppel, Handy, and Henderson, 1996). The mature commodity market grew at a slower rate than the growth of the value-added food market, 363 percent compared to 574 percent from 1972 to 1993. There is opportunity for U.S. export growth in the rapidly expanding value-added food market. Rapid trade growth has also occurred in the value-added wheat market.

Research into value-added food product trade has been modest relative to the research in commodity trade. The purpose of this study is to analyze trade data of exporting and importing countries for value-added wheat product markets. Results can be used to identify import market shares, major exporting countries, and product market characteristics for value-added wheat products.

There has been dramatic growth in international trade of value-added wheat products. These value-added wheat products include breakfast cereals, macaroni products, bread/biscuits, and pastries. Global imports of breakfast cereals, macaroni, bread/biscuits, and pastries have grown 342 percent, 401 percent, 1,778 percent, and 68 percent, respectively, from 1985 to 1995 (UN Comtrade Data, 1996). U.S. exports of these products have grown more rapidly than world imports, except for bread/biscuit products.

In Section 2 of this analysis measures of import market size and market growth, by country are presented. Section 3 shows comparisons of export quantities and growth across primary exporting countries. Regional and national import market share analysis for each product category is presented in Section 4. Section 5 is the concluding remarks to this study.

## 2. PRODUCT MARKET CHARACTERISTICS

### 2.1. Data Sources

There are four categories of value-added wheat products for which trade data are analyzed: breakfast cereals (SITC 04812), macaroni (SITC 0483), bread/biscuits (SITC 04841), and pastries (SITC 04842). Breakfast cereals are cereals other than corn, in grain form, that are precooked or otherwise ready to eat. Macaroni products includes macaroni, spaghetti, and similar products that are uncooked and not stuffed. The bread/biscuit products category includes crisp bread, rusks, toasted bread, and similar products. Products included in the pastry category are sweet biscuits, waffles and wafers, and gingerbread.

---

\*Research assistant and professor, respectively, in the Department of Agricultural Economics, North Dakota State University, Fargo.

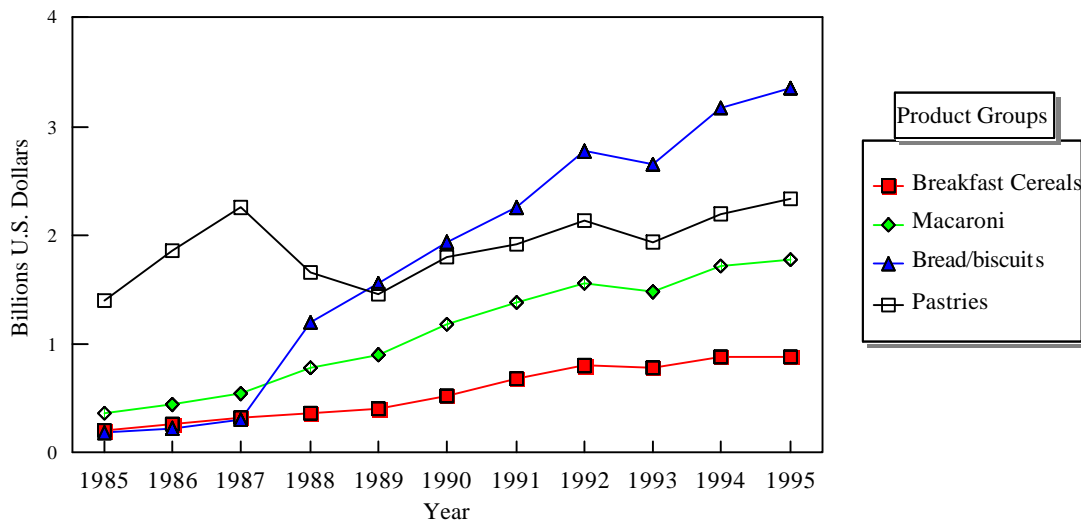
Data for value-added wheat products are secondary, collected from UN Comtrade data for the years 1962 to 1995. The data reported are export, import, and re-export quantities (metric tons) and values (nominal U.S. dollars) for over 220 countries. Data are reported as trade quantities and values between the exporting and importing countries. In this study, re-export quantities and values are excluded from the analysis.

## 2.2. Product Import Market Size

Import market size comparisons were conducted for each product group in 1995. Comparisons within each product group used import quantity in metric tons (*mt*) to determine market size. Comparisons were also made of market values among the product groups from 1985 to 1995.

### 2.2.1. Total Global Value of Import Product Markets

Bread/biscuit products had the highest worldwide import value in 1995 with imports of \$3.3 billion (all dollar values are reported in nominal U.S. dollars). Pastry imports reached \$2.3 billion in 1995, and macaroni imports were \$1.8 billion in 1995. Global imports of breakfast cereals had the lowest dollar value in 1995, with imports totaling \$.9 billion. Figure 1 shows global import levels for all four products from 1985 to 1995.

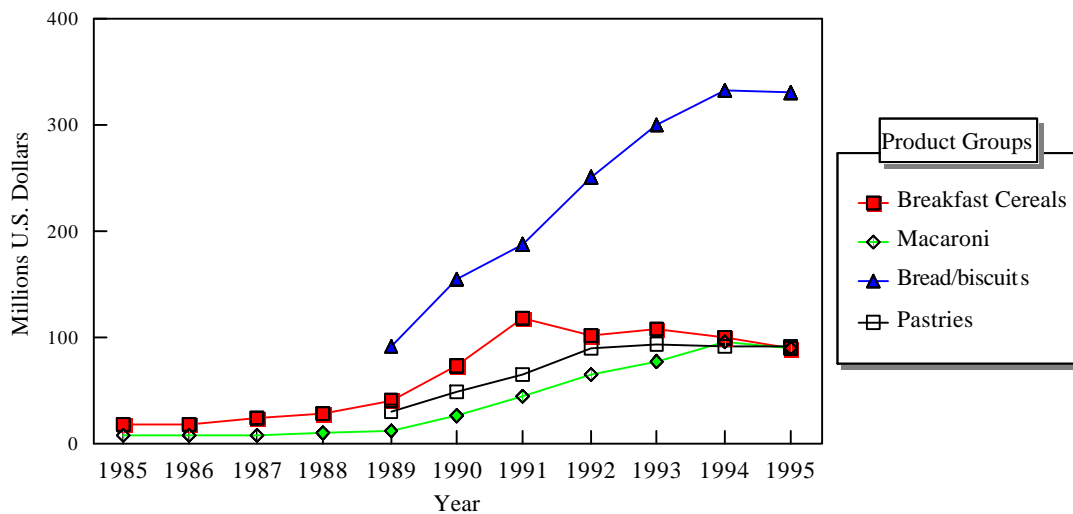


**Figure 1. World Imports of Breakfast Cereals (SITC 04812), Macaroni (SITC 0483), Bread/Biscuits (SITC 04841), and Pastries (SITC 04842), 1985-95.**

While there was an increase in the value of imports from 1985 to 1995 for all

products, the interim behavior varied. Global imports of pastries rose from \$1.4 billion in 1985 to \$2.2 billion in 1987, but fell back to \$1.5 billion in 1989. The remaining three markets grew steadily from 1985 to 1992. The bread/biscuit market had a rapid increase in import value from 1987 to 1988 when imports grew from \$.3 billion to \$1.2 billion, a four-fold increase. All four products had a dip in import levels in 1993, but import values continued to grow from 1993 to 1995 (Figure 1). The overall world import growth rate was highest for bread/biscuit products, which grew 1778 percent from 1985 to 1995. Macaroni imports grew 401 percent, breakfast cereal imports grew 342 percent, and pastry imports grew 68 percent worldwide from 1985 to 1995.

U.S. export values also grew from 1985 to 1995. Export values are not available for bread/biscuits or pastries before 1989. In each product category, except bread/biscuits, U.S. exports grew at a faster rate than world import values. Figure 2 shows U.S. export values from 1985 to 1995 for breakfast cereals and macaroni and from 1989 to 1995 for bread/biscuits and pastries. U.S. exports of macaroni reached \$90 million in 1995. U.S. exports of macaroni grew 999 percent from 1985 to 1995, which made it the fastest growing of the four value-added wheat product categories. U.S. exports of breakfast cereals grew 414 percent, from \$.02 billion in 1985 to \$.09 billion in 1995; exports of bread/biscuits grew 265 percent, from .09 billion in 1989 to \$.3 billion in 1995; and exports of pastries grew 216 percent, from \$.03 billion in 1989 to \$.09 billion in 1995.



**Figure 2. U.S. Exports of Breakfast Cereals (SITC 04812), Macaroni (SITC 0483), Bread/Biscuits (SITC 04841), and Pastries (SITC 04842), 1985-95.**

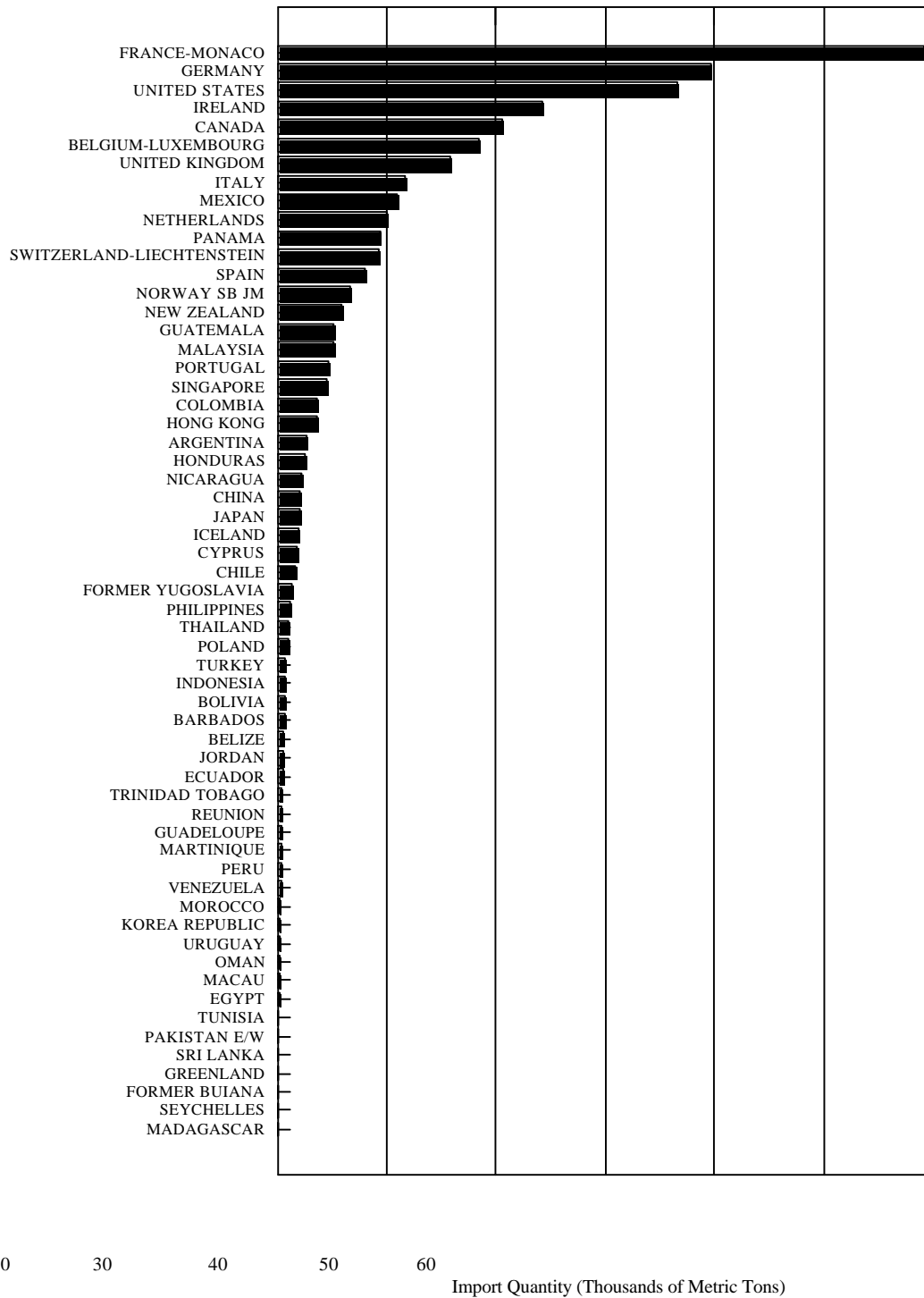
U.S. exports of breakfast cereals have been declining since 1991 (Figure 2). Growth in U.S. exports of pastries has been slowing since 1992, and growth in U.S. exports of macaroni and bread/biscuits slowed from 1994 to 1995. From 1985 to 1991, U.S. exports of breakfast cereals grew 581 percent. Since 1991, U.S. exports of breakfast cereals have declined 25 percent, from \$.1 billion in 1991 to \$.09 billion in 1995. U.S. exports of pastries grew 207 percent from 1989 to 1992, but increased only 3 percent from 1992 to 1995.

### 2.2.2. Import Market Quantities of Breakfast Cereals

World imports of breakfast cereals in 1995 were 352,148 *mt*. The quantity of breakfast cereal imports for each country that reported imports in 1995 is shown in Figure 3. The import market share for the ten countries with the largest import market shares is presented in Figure 4. France-Monaco, Germany, the United States, Ireland, Canada, Belgium-Luxembourg, the United Kingdom, Italy, Mexico, and the Netherlands accounted for 70 percent of world imports of breakfast cereals. France-Monaco imported the greatest quantity of breakfast cereals 59,225 *mt* in 1995, followed by Germany with 39,589 *mt*. of breakfast cereals in the same year. The United States was the third largest importer of breakfast cereals, importing 36,587 *mt* of breakfast cereal in 1995. The quantity of breakfast cereals that France-Monaco imported in 1995 was 17 percent of world breakfast cereals imported. Germany and the United States imported 11 percent and 10 percent, respectively, of world breakfast cereals imports.

### 2.2.3. Import Market Quantities of Macaroni

World imports of macaroni were 1.4 *mmt* (million *mt*) in 1995. Figure 5 shows the quantity of macaroni imports for each country that reported imports. The United States, Germany, France-Monaco, the United Kingdom, Canada, Hong Kong, and Japan had a 75 percent share of world imports of macaroni. The countries with the largest macaroni import market shares are the same as breakfast cereals importers: the United States, France-Monaco, and Germany. The largest import market was the United States, with imports of 269,654 *mt* in 1995. Germany was the second largest import market, importing 216,287 *mt* in 1995. France-Monaco imported the third greatest quantity of macaroni. France-Monaco imported 191,522 *mt* in 1995. The United States, Germany, and France-Monaco imported 19 percent, 15 percent, and 14 percent, respectively, of world imports of macaroni.



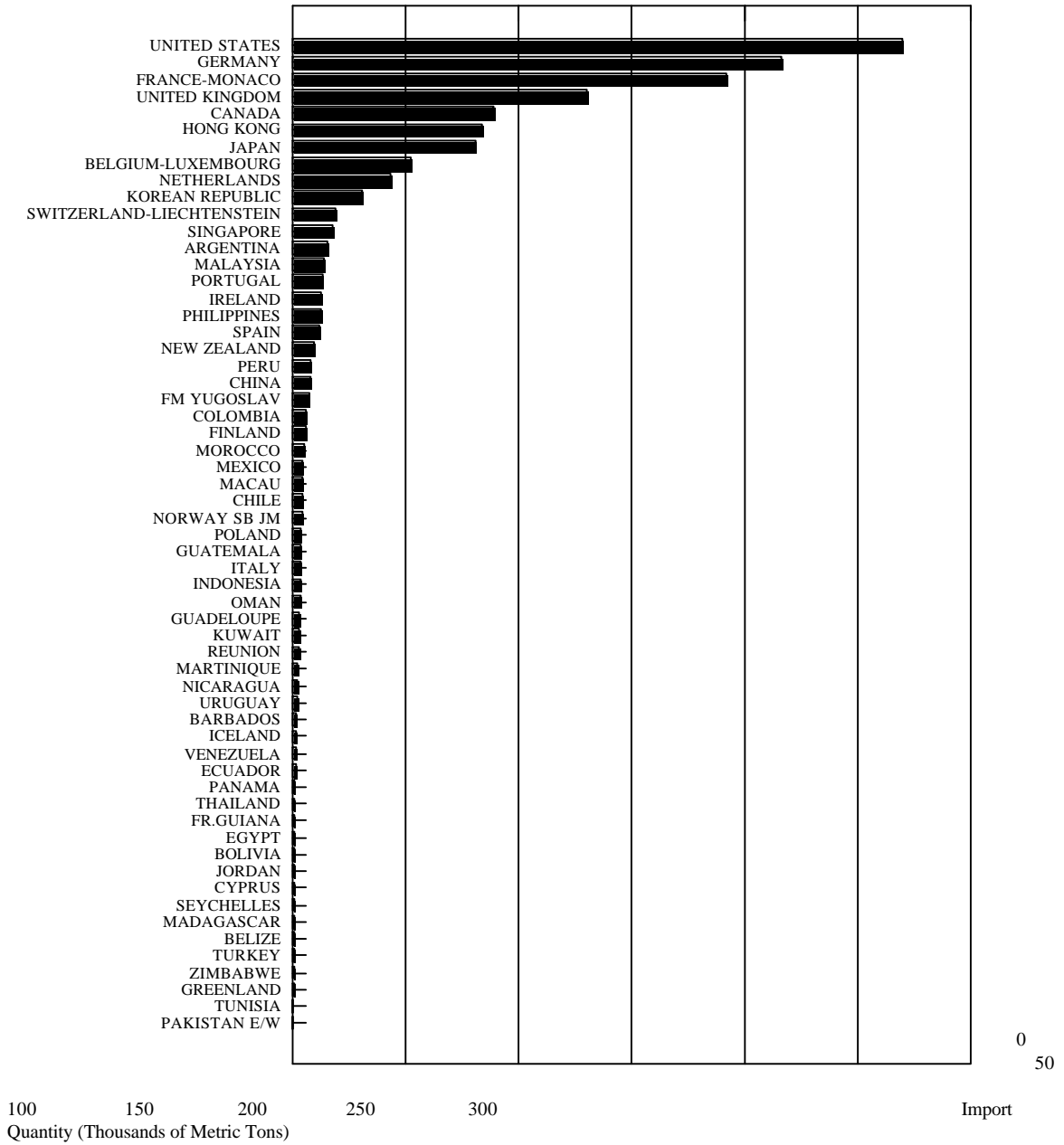
**Figure 3. Quantity (mt) of Breakfast Cereals Imported in 1995.**

#### 2.2.4. Import Market Quantities of Bread/Biscuits

World import quantity of bread/biscuit products in 1995 was 1.2 *mmt*. Figure 6 shows the quantity of bread/biscuit imports for each country that reported imports in 1995. The countries with the largest market shares are the United States, Germany, France-Monaco, Canada, the United Kingdom, Belgium-Luxemborg, the Netherlands, Italy, and Spain; they accounted for 77 percent of world imports of bread/biscuits in 1995. The three largest quantity import markets were the United States, France-Monaco, and Germany (Figure 7). The United States had the largest import quantity at 194,453 *mt* in 1995 (Figure 7). This was 16 percent of total world imports of bread/biscuits. Germany was the second largest importer of bread/biscuits at 170,082 *mt*, or 14 percent of world bread/biscuit imports in 1995. France-Monaco imported 141,027 *mt* of bread/biscuits in 1995, which was 11 percent of world bread/biscuit imports.

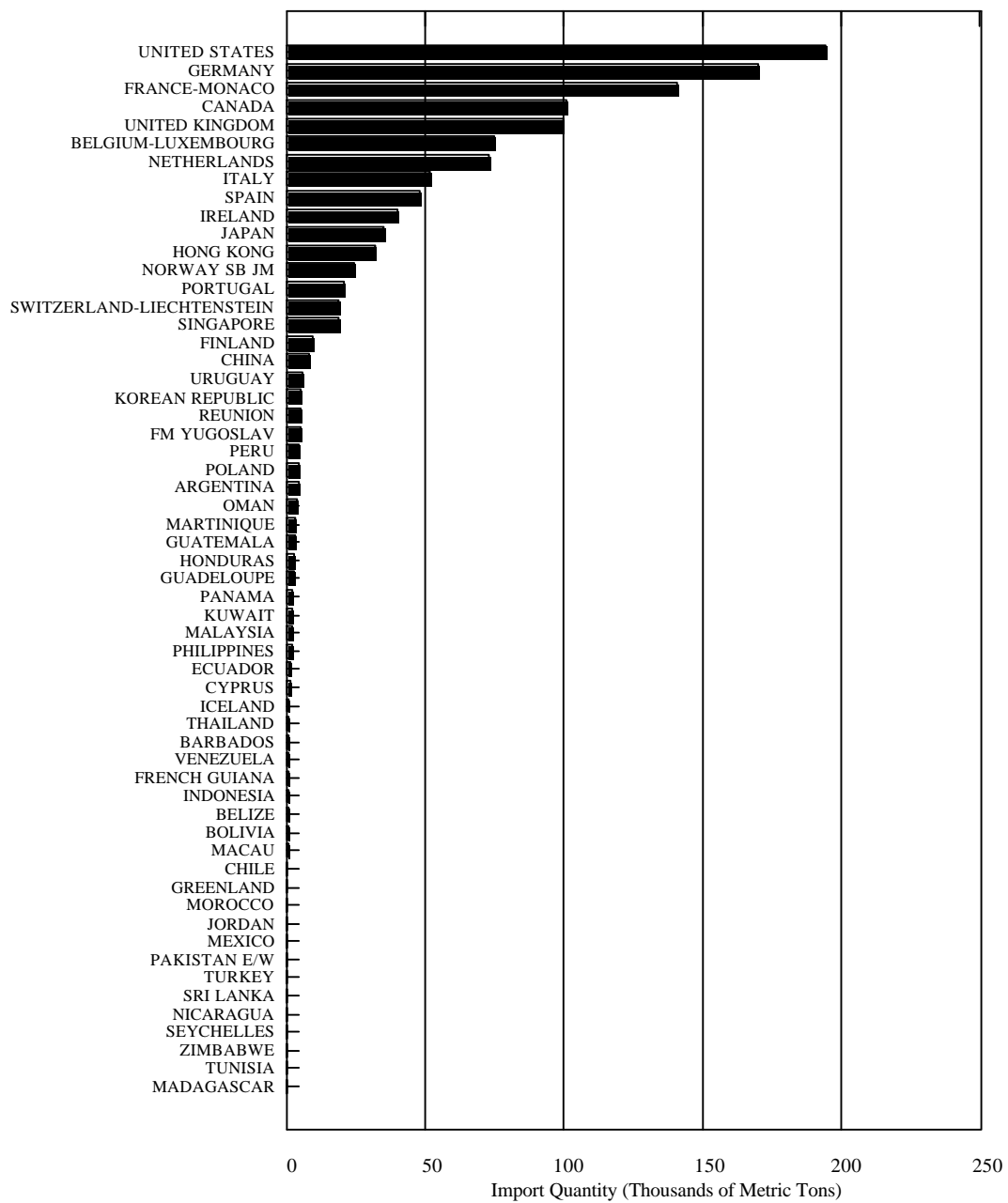
#### 2.2.5. Import Market Quantities of Pastries

World import quantity of pastries was 752,643 *mt* in 1995. Figure 6 shows the quantity of world imports of pastries for each country that reported imports in 1995. The countries with the largest market shares were France-Monaco, Germany, the United States, the United Kingdom, Belgium-Luxembourg, Canada, Italy, the Netherlands, and Ireland. They had a total import market share of 75 percent. France-Monaco, Germany, and the United States were the three largest importers of pastries in 1995. France-Monaco imported the greatest quantity of pastries in 1995, 146,347 *mt*; Germany, 105,657 *mt*; and the United States, 73,416 *mt*. French imports of pastries were 19 percent of world pastry imports in 1995. German and United States' imports were 14 percent and 10 percent, respectively, of world pastry imports.

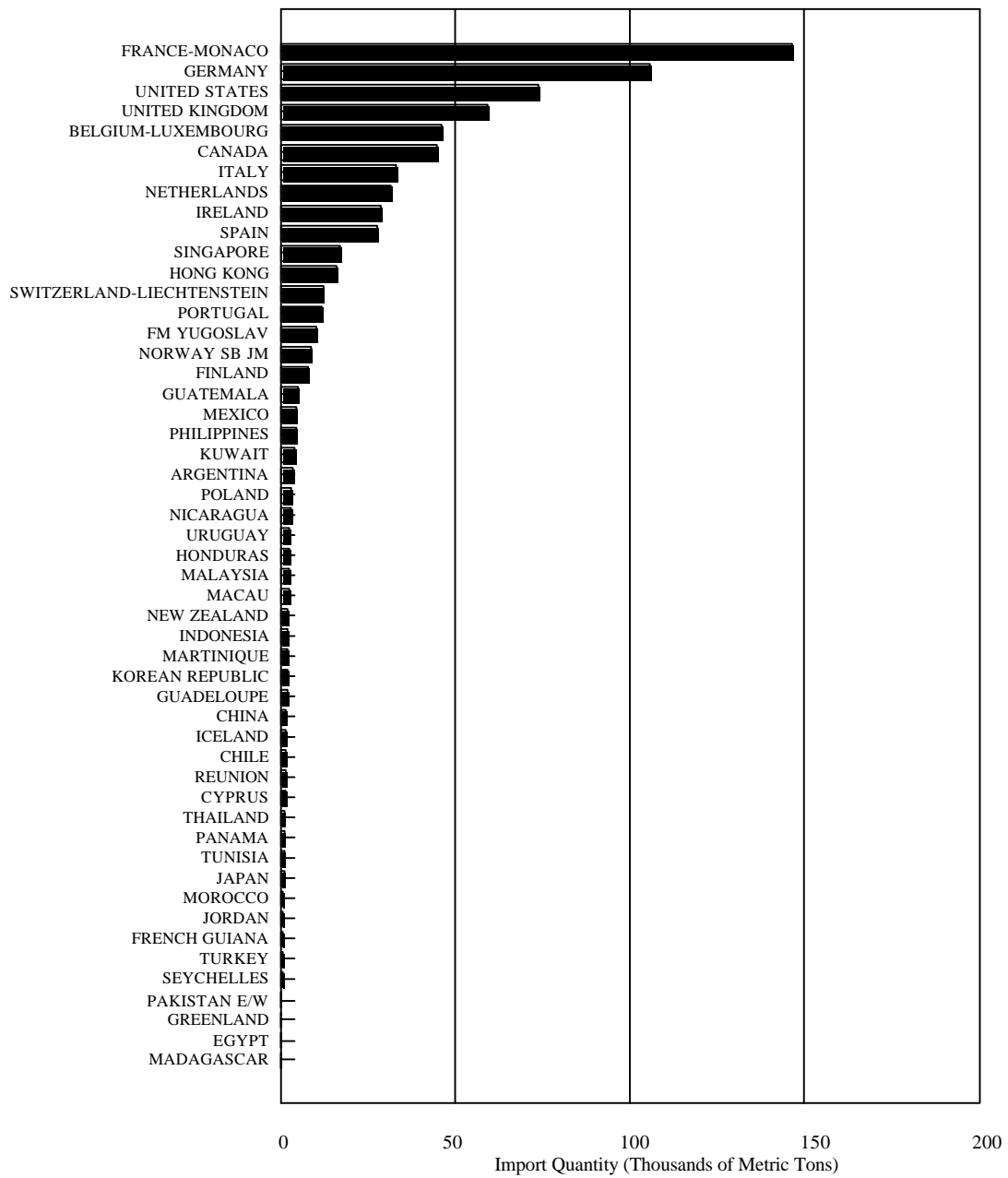


**Figure 4. Quantity of Macaroni Imported in 1995.**





**Figure 5. Quantity of Bread/Biscuits Imported, 1995.**



**Figure 6. Quantity of Pastries Imported, 1995.**

## 2.3. Import Market Growth

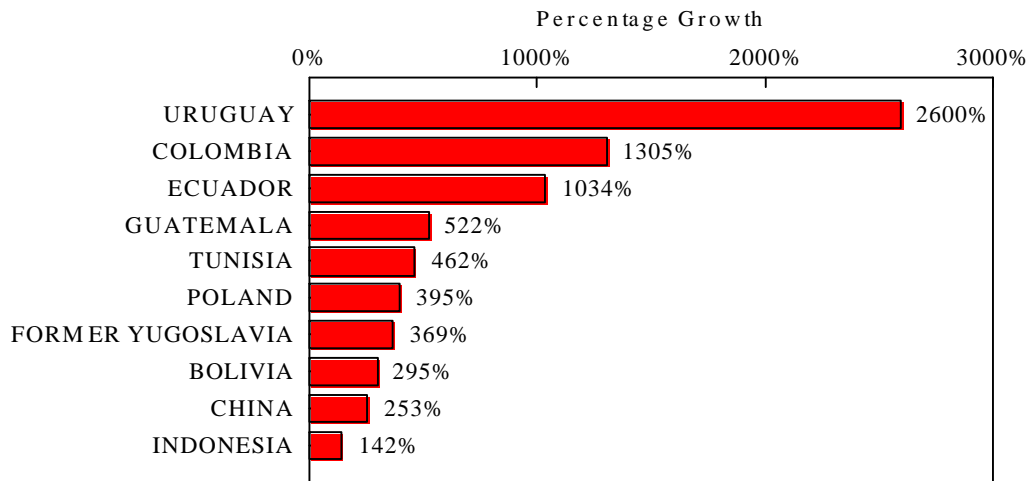
Market growth from 1992 to 1995 for breakfast cereals, macaroni, bread/biscuits, and pastries, are measured by percentage of import growth, absolute import growth, and shift share analysis of imports. Shift share analysis, measured by the percent net shift, provides an alternative method for measuring import market growth (Green and Allaway, 1985; Huff and Sherr, 1967). This measures the variability in the average world import market growth captured by the individual country's growth rate. There are problems with using percentage import growth and absolute import growth. A large market may be growing very slowly relative to other markets, or it may be shrinking. A rapidly growing market may be too small to export to. The percentage net shift is one way to use both market measures to determine which markets to enter.

The first step to calculating the percent net shift is to calculate the average growth rate of imports of all the importing countries. The expected import growth for each country is then calculated, assuming each country's import growth was the same as the average for all countries. The expected import growth is compared to the actual import growth by taking the difference of the two numbers. This is the net shift. The net shift for each country is divided by the total of the positive net shifts among all the countries. This is the percent net shift. A positive percent net shift indicates the country gained in total market share. A negative percent net shift indicates the country lost in total market share.

### 2.3.1. Breakfast Cereals Market Growth

From 1992 to 1995, the world breakfast cereal import market grew 7 percent. The highest import growth markets were Uruguay, Colombia, Ecuador, Guatemala, and Tunisia at rates of 2,600 percent, 1,305 percent, 1,034 percent, 522 percent, and 462 percent respectively (Figure 7). Between 1992 and 1995, Uruguay's imports of breakfast cereals grew from 8 *mt* to 216 *mt* and Colombia's from 257 *mt* to 3610 *mt*. Breakfast cereal imports in Ecuador increased from 41 *mt* in 1992 to 465 *mt* in 1995, increased in Guatemala from 832 *mt* to 5177 *mt*, and grew from 21 *mt* in 1992 to 118 *mt* in Tunisia. The U.S. growth rate was negative, with imports decreasing from 37,239 *mt* in 1992 to 36,547 *mt* in 1995. This translates to a growth rate of -2 percent. Canada's growth rate was also negative at -3 percent. Canada's breakfast cereals imports fell from 21,074 *mt* in 1992 to 20,548 *mt* in 1995.

The five fastest growing import markets accounted for 9,586 *mt* of imports in 1995. This is only 1 percent of world imports of breakfast cereals in 1995. Of the 64 countries reporting imports of breakfast cereals in 1995, Guatemala ranked 18th in the quantity of breakfast cereal imports. Colombia, Ecuador, Uruguay, and Tunisia ranked 22nd, 43rd, 58th, and 54th, respectively, in breakfast cereal import quantity.



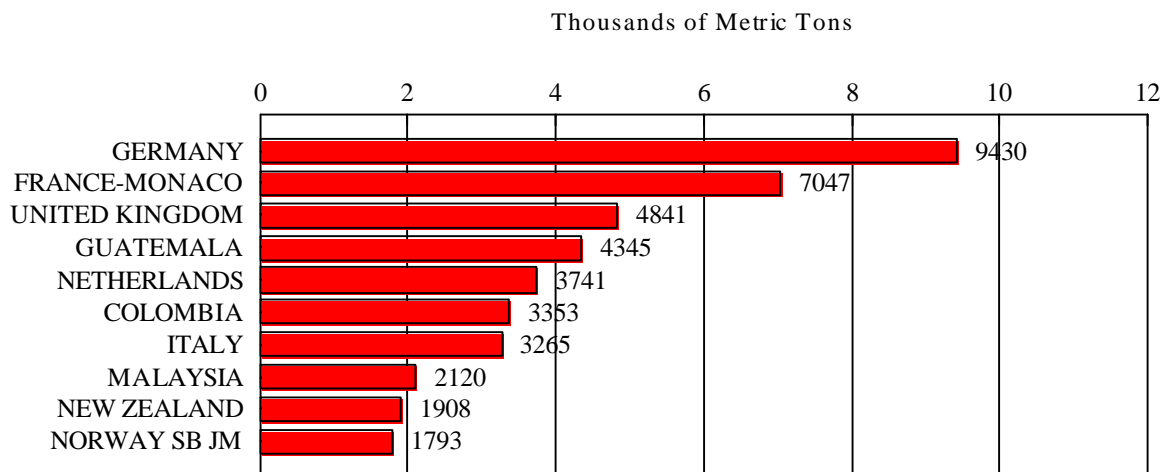
**Figure 7. Breakfast Cereals Import Market Growth for Ten Fastest Growth Countries, 1992-95.**

The five largest breakfast cereal import markets (France-Monaco, Germany, the United States, Canada, and Ireland) grew less than the median growth rate of 39 percent. Germany and France-Monaco had growth rates above the industry average at 31 percent and 14 percent, respectively; however, the United States, Canada, and Ireland had negative growth rates at -2 percent, -3 percent, and -5 percent, respectively. The countries with the highest import market shares rank among the slowest import growth countries.

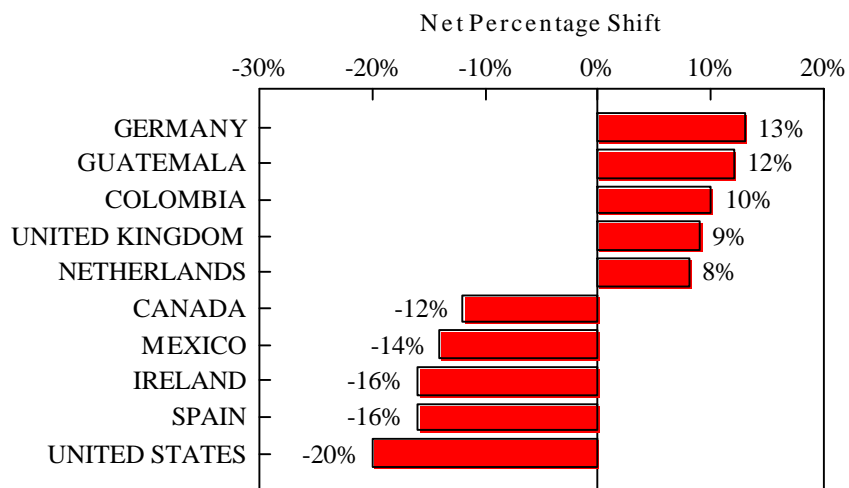
The largest absolute import growth was in Germany between 1992 and 1995 (Figure 8). German breakfast cereal imports increased 9,430 *mt*. France-Monaco, the United Kingdom, Guatemala, and the Netherlands were also part of the top five absolute import growth countries. France-Monaco had import growth of 7,047 *mt*; the United Kingdom, 4,841 *mt*; Guatemala, 4,345 *mt*; and the Netherlands, 3,741 *mt* from 1992 to 1995. Except for Guatemala, the other four countries were among the top ten highest importing countries of 1995. Guatemala was the only country with high absolute import growth and was among the top five highest import growth rate countries at 522 percent.

Using shift share analysis on the breakfast cereal import markets, Germany was the highest growth importing market (Figure 9). Germany captured 13 percent of the variability in breakfast cereal imports. Guatemala, Colombia, the United Kingdom, and the Netherlands had percent net shifts of 12 percent, 10 percent, 9 percent, and 8 percent, respectively. This indicates that these markets grew at rates greater than the industry average. Germany had the second largest import market share of breakfast cereals in 1995, and the United Kingdom and the Netherlands were among the ten countries with the largest import market shares in the same year. Germany, the United Kingdom, and the Netherlands were also among the five countries with the largest absolute import quantity growth from

1992 to 1995. Guatemala and Colombia were among the five countries with the largest import growth rates from 1992 to 1995. The United States captured -20 percent of the variability in the average world import market growth for breakfast cereals. This was the lowest percent net shift for all countries in the breakfast cereal import market, which means that U.S. growth of breakfast cereal imports was less than the world average.



**Figure 8. Absolute Growth in Breakfast Cereals Import Quantity of Ten Highest Growth Countries, 1992-95.**

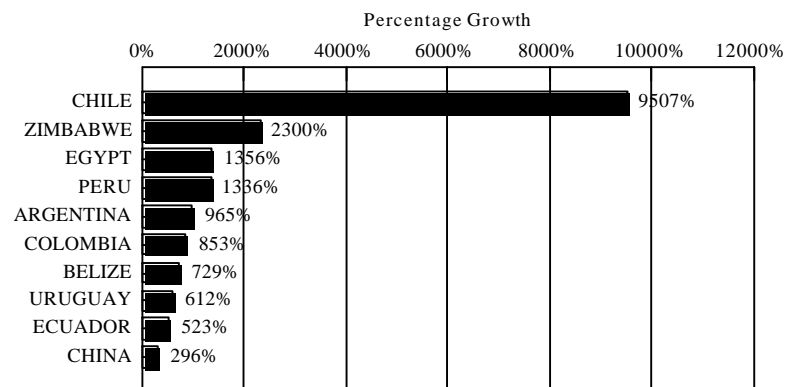


**Figure 9. Net Percentage Shift of Breakfast Cereal Import Quantities for Largest Positive and Negative Net Percentage Shift Countries, 1992-95.**

### 2.3.2. Macaroni Import Growth

The macaroni import market grew 22 percent from 1992 to 1995. Chile, Zimbabwe, Egypt, Peru, and Argentina were the highest growth import markets (Figure 10). Import market growth between 1992 and 1995 was 9,507 percent in Chile, 2,300 percent in Zimbabwe, 1,356 percent in Egypt, 1,336 percent in Peru, and 965 percent in Argentina. Chile's imports of macaroni had grown from 42 *mt* to 4,035 *mt*, Zimbabwe's from 4 *mt* to 96 *mt*, Egypt's from 43 *mt* to 626 *mt*, Peru's from 537 *mt* to 7,713 *mt*, and Argentina's from 1,398 *mt* to 14,892 *mt*. The United States' import market grew 52 percent, from 177,188 *mt* in 1992 to 269,654 *mt* in 1995. The macaroni import market in Canada increased 39 percent, from 63,625 *mt* in 1992 to 88,685 *mt* in 1995.

The five highest growth macaroni import markets had total imports in 1995 of 27,362 *mt*. This is only 2 percent of world macaroni imports in 1995. Argentina was the largest import market of the five highest growth rate import markets. Argentina was ranked 14th in import market size of the 65 countries which reported macaroni imports in 1995. Peru ranked 21st, Chile 30th, Egypt 53rd, and Zimbabwe 62nd. None of the 26 fastest growing import markets had import levels in 1995 greater than the mean.

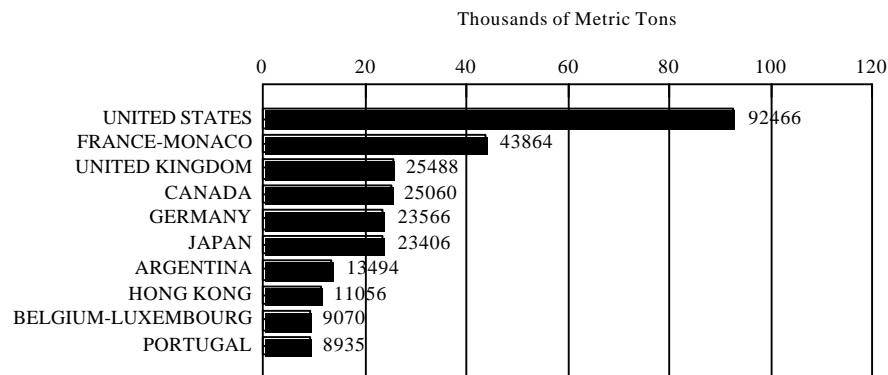


**Figure 10. Macaroni Import Market Quantity Growth for Ten Fastest Growth Countries, 1992-95.**

The five largest pasta import markets were the United States, Germany, France-Monaco, the United Kingdom, and Canada (Figure 11). Except for the United States, the other four markets grew less than the median import growth rate. Only Germany had an import growth rate lower than the mean for the macaroni industry. The import growth rate for the United States was 52 percent. The import growth rates for Germany,

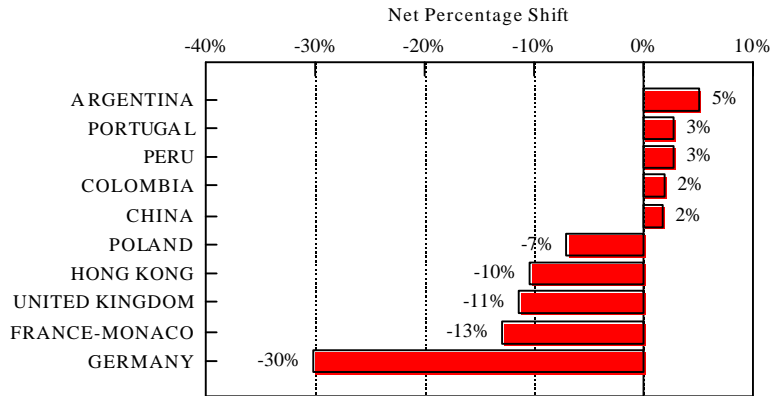
France-Monaco, the United Kingdom, and Canada were 12 percent, 30 percent, 24 percent, and 39 percent, respectively. Smaller import markets had higher rates of import market growth. Those countries with import quantities less than the mean averaged an import growth rate of 351 percent. Those countries with import quantities greater than the mean had an average import growth rate of 5 percent.

The highest absolute import growth countries were the United States, France-Monaco, the United Kingdom, Canada, and Germany (Figure 11). The United States' import market grew 92,466 *mt* from 1992 to 1995; France-Monaco, 43,864 *mt*; the United Kingdom, 43,864 *mt*; Canada, 25,060 *mt*; and Germany, 23,566 *mt*. None of these five countries had import growth rates among the top 25 national import growth rates. These five countries were the same five which had the largest macaroni import quantities in 1995.



**Figure 11. Absolute Growth in Macaroni Import Quantity of Ten Highest Growth Countries, 1992-95.**

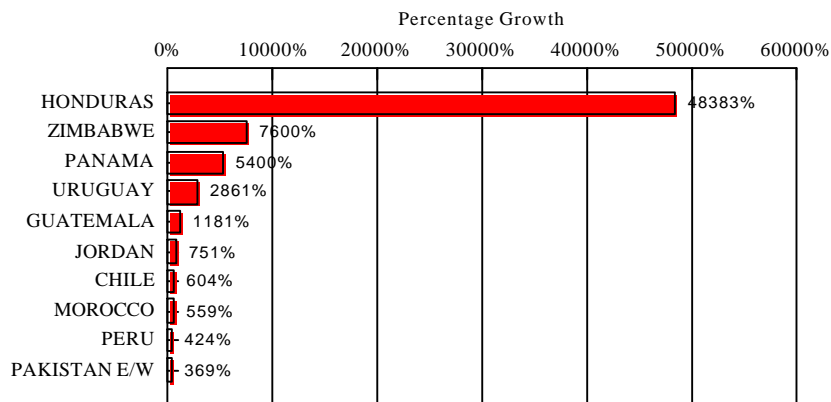
Shift share analysis showed that Argentina was the highest growth macaroni importing market (Figure 12). Argentina captured 5 percent of the variability in average world import market growth for macaroni. Portugal, Peru, Colombia, and China had percent net shifts of 3 percent, 3 percent, 2 percent, and 2 percent, respectively. These five countries had the highest percent net shifts among all macaroni importing markets in the world. None of these countries were among the ten countries with the largest world macaroni import market shares in 1995. The United States, with a percent net shift of .4 percent, was the only country of the largest ten importing countries that had a positive percent net shift. The remaining major importing countries had negative percent net shifts. This indicates that these markets grew at a rate less than the world growth average. Peru and Argentina were two of the five countries with the greatest macaroni import growth rates from 1992 to 1995.



**Figure 12. Percentage Net Shift of Macaroni Import Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95.**

### 2.3.3. Bread/Biscuit Import Growth

The world bread/biscuits import market grew 14 percent from 1992 to 1995. The highest growth import markets were Honduras, Zimbabwe, Panama, Uruguay, and Guatemala with 48,383 percent, 7,600 percent, 5,400 percent, 2,861 percent, and 1,181 percent growth rates, respectively (Figure 13). During the period from 1992 to 1995, Honduras' imports of bread/biscuits grew from 6 *mt* to 2,909 *mt*, Zimbabwe's from 1 *mt* to 77 *mt*, Panama's from 44 *mt* to 2,420 *mt*, Uruguay's from 206 *mt* to 6,099 *mt*, and Guatemala's from 246 *mt* to 3,151 *mt*. The United States' growth rate was 36 percent. U.S. bread/biscuit imports increased from 142,936 *mt* in 1992 to 194,453 *mt* in 1995. Canada's growth rate was 19 percent, growing from 84,681 *mt* in 1992 to 100,717 *mt* in 1995.



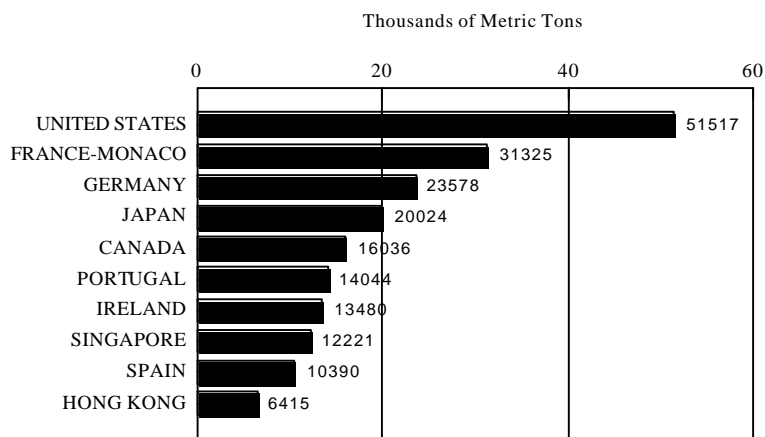
**Figure 13. Bread/Biscuit Import Market Quantity Growth for Ten Fastest Growth Countries, 1992-95.**



The five fastest growing import markets had total imports in 1995 of 14,656 *mt*, which was 1 percent of total world bread/biscuits imports for that year. Uruguay was the largest import market of the five highest growth import markets. It ranked 21st of the 63 countries which reported bread/biscuit imports in 1995. Guatemala was ranked 30th, Honduras 31st, Panama 33rd, and Zimbabwe 61st. There were no countries with imports greater than the world mean of bread/biscuit imports among the 16 highest growth importing countries.

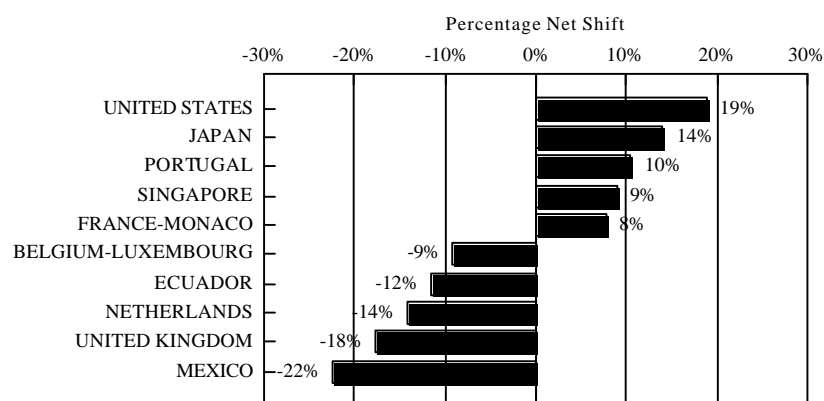
The five largest import markets were the United States, France-Monaco, Germany, Canada, and the United Kingdom. Only the United Kingdom, with an import growth rate of -1 percent, had an import growth rate less than the industry average. The growth rates for the United States, France-Monaco, Germany, and Canada were 36 percent, 29 percent, 16 percent, and 19 percent, respectively. Those countries with import quantities less than the mean world import quantity had average import growth rates larger than countries with import quantities greater than the mean world import quantity. The import growth rate for countries with import quantities less than the mean was 1,623 percent. Conversely, the growth rate for countries with import quantities greater than the mean was 28 percent.

The largest absolute import growth quantities between 1992 and 1995 occurred in the United States, France-Monaco, Germany, Japan, and Canada (Figure 14). The United States import quantity grew 51,517 *mt*; France-Monaco's 31,325 *mt*, Germany's 23,578 *mt*, Japan's 20,024 *mt*, and Canada's 16,036 *mt*. Except for Japan, these countries were among the top five quantity importers in 1995.



**Figure 14. Absolute Growth in Bread/Biscuit Import Quantity of Ten Highest Growth Countries, 1992-95.**

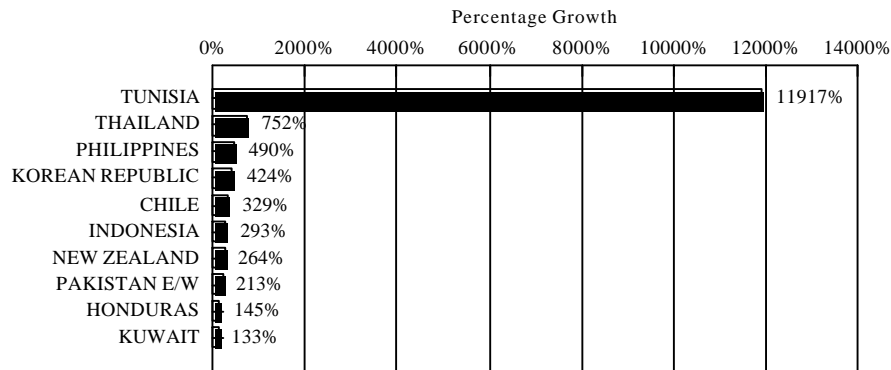
Shift share analysis showed that the United States was the highest import growth market (Figure 15). The United States captured 19 percent of the variability in average world import market growth for bread/biscuits. Japan, Portugal, Singapore, and France-Monaco had net shifts of 14 percent, 11 percent, 9 percent, and 8 percent, respectively. These five countries had the highest percent net shifts among all bread/biscuit importing markets in the world. The United States was also had the largest world import market share of bread/biscuits in 1995, and France had the third largest world import market share. The United States, France, and Japan also were among the five countries with the greatest absolute increases in bread/biscuits import levels from 1992 to 1995. None of these five countries were among the top five countries with the greatest rate of increase in bread/biscuit imports from 1992 to 1995.



**Figure 15. Percentage Net Shift of Bread/Biscuit Import Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95.**

#### 2.3.4. Pastry Import Growth

The pastry world import market grew 8 percent from 1992 to 1995 (Figure 16). Tunisia, Thailand, the Philippines, Korean Republic, and Chile were the fastest growing import markets. Tunisia's import growth rate was 11,917 percent, Thailand's 752 percent, the Philippines' 490 percent, Korean Republic's 424 percent, and Chile's 329 percent from 1992 to 1995. The import growth rate for the United States was 85 percent and for Canada 14 percent from 1992 to 1995.

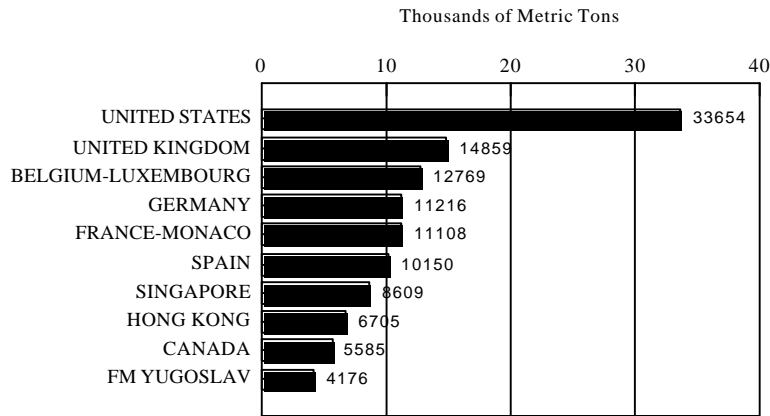


**Figure 16. Pastry Import Market Quantity Growth for Ten Fastest Growth Countries, 1992-95.**

The five fastest growing import markets between 1992 and 1995 had imports of 9,122 *mt* in 1995, which was 1 percent of total world imports in 1995. The Philippines, the Korean Republic, Chile, Thailand, and Tunisia ranked 22nd, 36th, 40th, 45th, and 47th, respectively, in import market size among other pastry importing countries in 1995.

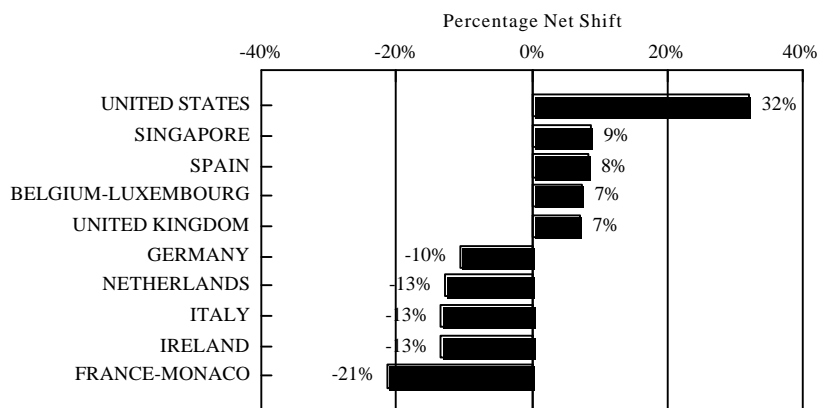
The five largest pastry import markets in 1995 were France-Monaco, Germany, the United States, Great Britain, and Belgium Luxembourg. Except for the United States, the other four markets had import growth rates below the median. None of the five countries had growth rates lower than the world average of 8 percent. The growth rates for the United States, Belgium-Luxembourg, the United Kingdom, Germany, and France-Monaco were 85 percent, 39 percent, 34 percent, 12 percent, and 8 percent, respectively, from 1992 to 1995. Smaller import markets had higher rates of import market growth. Those countries with import quantities less than the world average had an average import growth rate of 391 percent. Those countries with import quantities greater than the world average had an average import growth rate of 33 percent.

The United States, the United Kingdom, Belgium-Luxembourg, Germany, and France-Monaco had the largest absolute pastry import growth quantities between 1992 and 1995 (Figure 17). The United States' imports of pastries grew 33,654 *mt*, the United Kingdom's 14,859 *mt*, Belgium-Luxembourg's 12,769 *mt*, Germany's 11,216 *mt*, and France-Monaco's by 11,108 *mt*. These five countries also have the five highest import quantities in 1995.



**Figure 17. Absolute Growth in Pastry Import Quantity of Ten Highest Growth Countries, 1992-95.**

Shift share analysis showed that the United States was the highest growth importing market (Figure 18). The United States captured 32 percent of the variability in average world import market growth for pastries. Singapore, Spain, Belgium-Luxembourg, and the United Kingdom had percent net shifts of 9 percent, 8 percent, 7 percent, and 7 percent, respectively. These five countries had the highest percent net shifts among all pastry importing markets in the world. Belgium-Luxembourg, the United States, and the United Kingdom were also among the countries with the largest world import market shares of pastries in 1995. None of the five countries were among the countries with the highest growth rate in pastry imports from 1992 to 1995. France-Monaco, which had the largest import market share in 1995, had the lowest percentage net import shift of any country from 1992 to 1995.



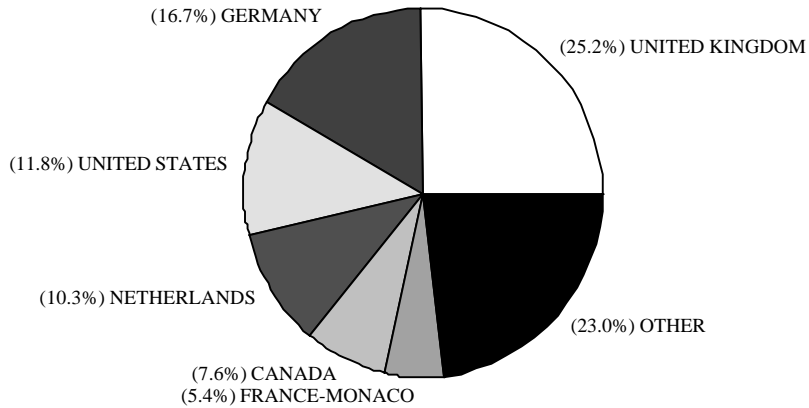
**Figure 18. Percentage Net Shift of Pastry Import Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95.**

### 3. EXPORT COUNTRY COMPARISONS

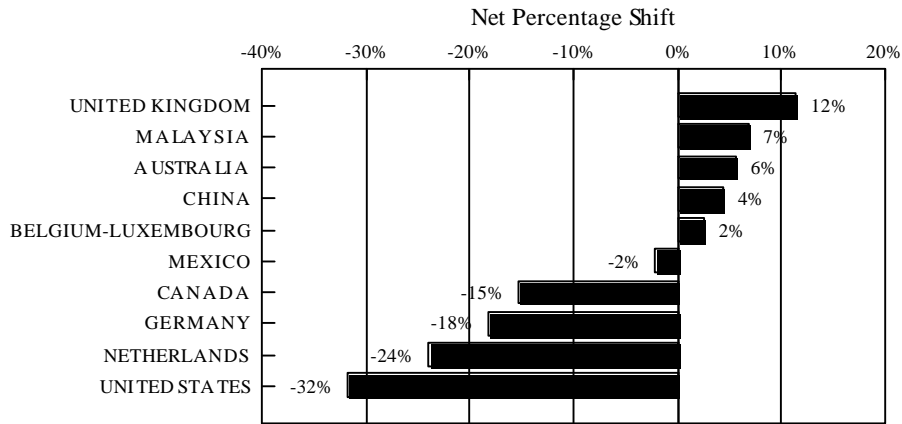
#### 3.1. Breakfast Cereal Export Market

World exports of breakfast cereal in 1995 were 389,308 *mt*. The United Kingdom, Germany, the United States, the Netherlands, Canada, and France-Monaco were the six largest national exporters of breakfast cereals in 1995. They exported a total of 299,720 *mt* in 1995. The total market share for these six countries was 77 percent. The United Kingdom was the largest exporter, exporting 98,099 *mt* of breakfast cereal in 1995. This was a 25 percent world export market share. Germany had the second largest export market share of 17 percent. The United States, the Netherlands, Canada, and France-Monaco had market shares of 12 percent, 10 percent, 8 percent, and 5 percent, respectively (Figure 19).

Using shift share analysis on the breakfast cereal exporting countries, the United Kingdom, Malaysia, Australia, China, and Belgium-Luxembourg were the highest growth exporting countries from 1992 to 1995. Figure 20 shows the export shift shares for these five countries. The United States had the lowest net percentage shift at -32 percent, a decrease of exports from 1992 to 1995. Figure 20 shows the percent net export shift for the five countries with the lowest net shift percentages.



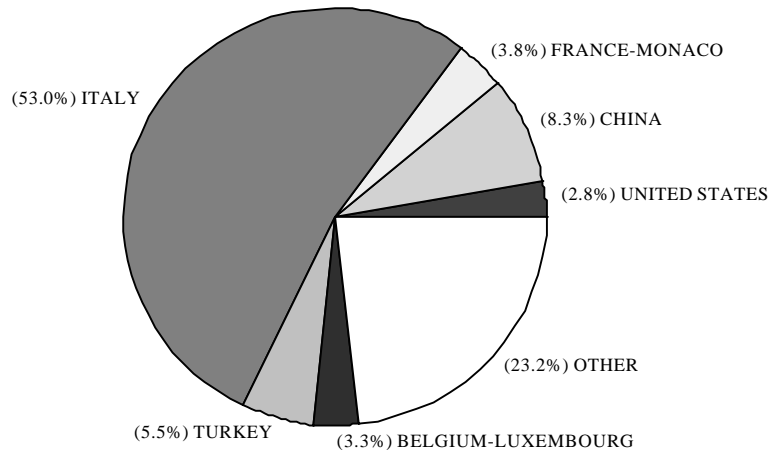
**Figure 19. Percentage of World Breakfast Cereal Export Quantity, 1995.**



**Figure 20. Percentage Net Shift of Breakfast Cereal Export Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95.**

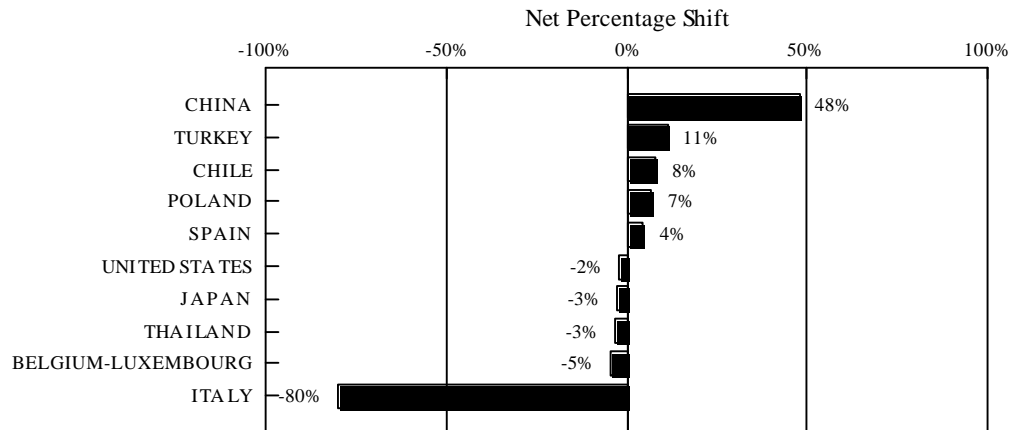
### 3.2. Macaroni Export Market

World exports of macaroni in 1995 were 2.0 *mmt*. Italy, China, the United Kingdom, France-Monaco, Belgium-Luxembourg, and the United States were the six largest national exporters of macaroni in 1995, accounting for 1.5 *mmt* of macaroni exports. Figure 21 shows the export market shares for these six macaroni exporting countries. The world export market share for these 6 countries was 77 percent. Italy was the largest exporter with a 53 percent market share, over half of the export market. The next largest exporter was China with an 8 percent export market share. Turkey had a 6 percent export market share, France-Monaco 4 percent, Belgium-Luxembourg's 3 percent, and the United States' 3 percent.



**Figure 21. Percentage of World Macaroni Export Quantity, 1995.**

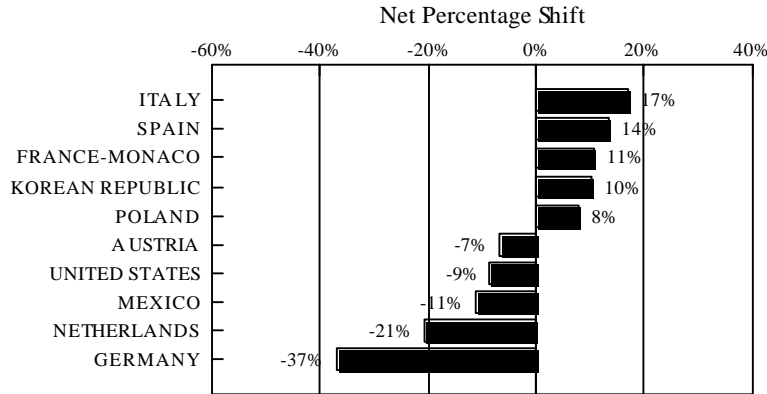
Using shift share analysis, China, Turkey, Chile, Poland, and Spain were the highest growth exporting countries from 1992 to 1995. Figure 22 shows the export shift shares for these five countries. The United States had the fifth lowest percentage net export shift at -2 percent. Italy, which has a world export share of 53 percent, had the lowest percentage net export shift at -79 percent. While both the United States and Italy had increases in macaroni exports from 1992 to 1995, the increase was less than the world average. Figure 22 shows the export shift shares for the five countries with the lowest percentage net export shifts.



**Figure 22. Percentage Net Shift of Macaroni Export Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95.**

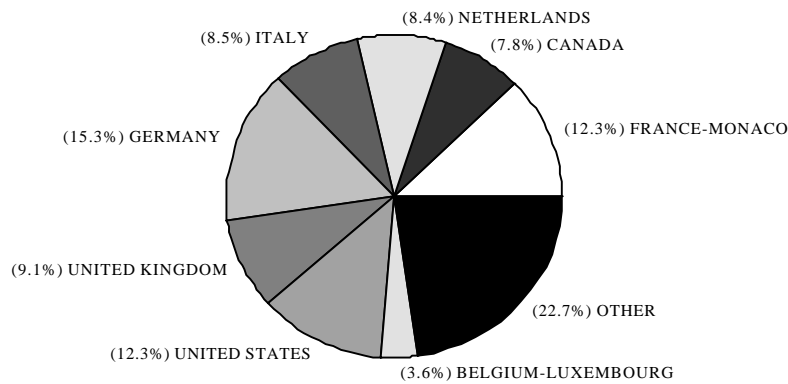
### 3.3. Bread/Biscuit Export Market

World bread/biscuit exports in 1995 were 1.4 *mmt*. Germany, the United States, France-Monaco, the United Kingdom, Italy, the Netherlands, Canada, and Belgium Luxembourg were the eight largest national exporters of bread/biscuit in 1995 with total exports of 1.0 *mmt*. The aggregate export market share for these eight countries was 77 percent. The largest exporter was Germany with a 15 percent market share. The United States, France-Monaco, the United Kingdom, Italy, the Netherlands, Canada, and Belgium-Luxembourg had export market shares of 12 percent, 12 percent, 9 percent, 9 percent, 9 percent, 8 percent, and 4 percent, respectively. Figure 23 shows the export market shares for these eight countries.



**Figure 23. Percentage of World Bread/Biscuit Export Quantity, 1995.**

Shift share analysis shows that Italy, Spain, France-Monaco, the Korean Republic, and Poland had the highest growth in exports from 1992 to 1995. Figure 24 shows the net export shift shares for these five countries. The United States had the fourth lowest percentage net export shift at -9 percent. The United States had an increase in exports from 1992 to 1995, but this increase was less than the world average. Germany, which had the largest world export share in 1995, had the lowest percentage net export shift of -37 percent. Germany's exports decreased from 1992 to 1995. Figure 24 shows the export shift shares for the five countries with the lowest percentage net export shifts.



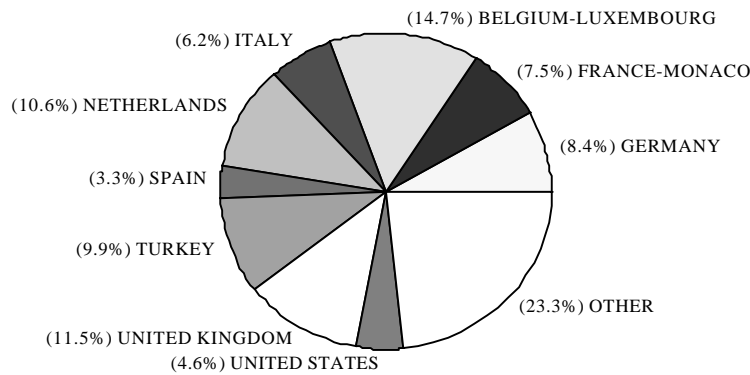
**Figure 24. Percentage Net Shift of Bread/Biscuit Export Quantities for Largest Positive and Negative Percentage Net Shift Countries, 1992-95.**



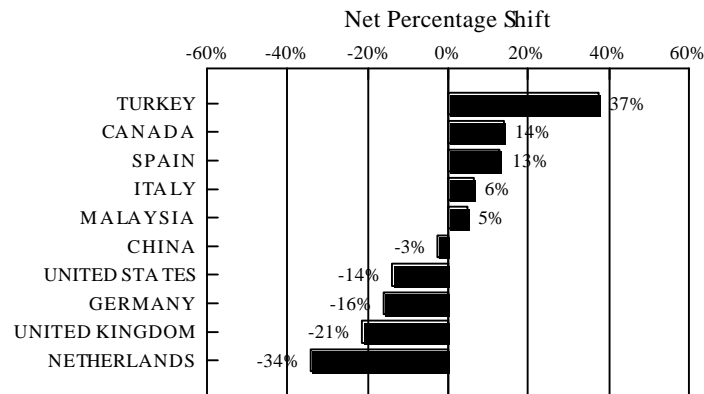
### 3.4. Pastry Export Market

World pastry exports in 1995 were 1.1 *mmt*. Belgium-Luxembourg, the United Kingdom, the Netherlands, Turkey, Germany, France-Monaco, Italy, the United States, and Spain were the nine largest national exporters of pastry in 1995 with total exports of 834,181 *mt*. The total export market share for these nine countries was 77 percent. The largest exporter was Belgium-Luxembourg with a 15 percent export market share. The export market shares for the United Kingdom, the Netherlands, Turkey, Germany, France-Monaco, Italy, the United States, and Spain were 12 percent, 11 percent, 10 percent, 8 percent, 8 percent, 6 percent, 5 percent, and 3 percent, respectively. Figure 25 shows the export market shares for these nine countries.

Shift share analysis showed that Turkey, Canada, Spain, Italy, and Malaysia were the highest growth exporting countries from 1992 to 1995. Figure 26 shows the net export shift shares for these five countries. The United States had the fourth lowest percentage net export shift at -14 percent. The Netherlands, the United Kingdom, and Germany, which were among the five countries with the highest world export shares in 1995, had the three lowest percentage net export shifts from 1992 to 1995. Figure 26 shows the net export shift shares for the five countries with the lowest percentage net export shifts.



**Figure 25. Percentage of World Pastry Export Quantity, 1995.**



**Figure 26. Net Percentage Shift of Pastry Export Quantities for Largest Positive and Negative Net Percentage Shift Countries, 1992-95.**

#### 4. MARKET SHARE ANALYSIS

Import market share analysis was done for 1989 through 1991.<sup>1</sup> Those countries exporting the largest quantities of each product from 1989 to 1991 were used as exporting countries in the import market analysis. Those countries which had market shares among the top 75 percent for each product group were named among the largest exporting countries, along with the United States. Table 1 shows the countries exporting the largest quantities from 1989 to 1991.

##### 4.1. Regional Import Market Share Analysis

Market shares of the five largest importing regions were calculated. Only the largest exporting countries from 1989 to 1991 to the world market are reported as exporters to the regional import markets. Imports from all other countries are categorized as imports from “other” countries. Market shares were calculated as a percent of total imports in the region. The market shares were calculated for 1989 to 1991 and are reported below.

In each of the value-added wheat product categories, the Western European region imported the largest quantity of products, and the developed North American region imported the second largest quantity. Other regions which were in the top five importing regions included developed Asia, developing East Asia, developing Arab countries, and Latin America.

---

<sup>1</sup>These years were chosen due to data missing in following years.

Western European imports were primarily sourced from other Western European countries. Canada and the United States were the largest exporters to developed North America, except for exports of macaroni products. Depending upon the product category, the other regions' imports were primarily sourced from the United States, the United Kingdom, China, or Italy.

**Table 1. World Export Market Shares for Leading Exporting Countries, 1989 - 1991.**

Breakfast Cereal		Macaroni		Bread/biscuits		Pastries	
Industry Leaders	Share	Industry Leaders	Share	Industry Leaders	Share	Industry Leaders	Share
United Kingdom	18	Italy	61	Germany	25	Suriname	21
Netherlands	18	China	6	Netherlands	11	Netherlands	13
Germany	17	France - Monaco	5	France - Monaco	9	Belgium - Luxembourg	12
United States	17	Belgium - Luxembourg	4	Canada	9	Germany	10
Canada	6	United States	1	United Kingdom	8	United Kingdom	10
<b>Cumulative Share</b>	<b>76</b>	<b>Cumulative Share</b>	<b>77</b>	United States	7	France - Monaco	6
				Italy	7	Italy	4
				<b>Cumulative Share</b>	<b>76</b>	United States	2
						<b>Cumulative Share</b>	<b>78</b>

#### 4.1.1. Regional Areas

Ten importing regions were identified, based upon the regional divisions in the UN Comtrade data. Market shares are reported for the five largest importing regions in each product category. Those regions and their member countries for which market shares are reported are shown in Table 2.

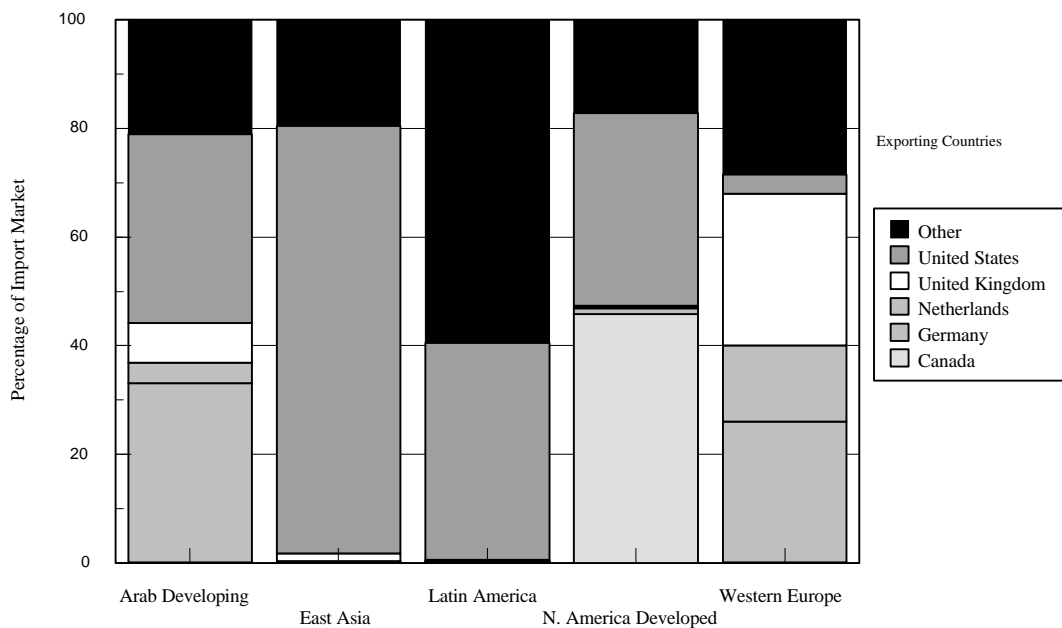
#### 4.1.2. Regional Import Market Shares for Breakfast Cereals

Developing Arab countries, developing East Asia, Latin America, developed North America, and Western Europe imported the greatest quantity of breakfast cereals from 1989 to 1991. Those countries exporting the highest quantity of breakfast cereals to the world from 1989 to 1991 were Canada, Germany, the Netherlands, the United Kingdom, and the United States. Imports of breakfast cereal to developing Arab countries totaled 21,415 *mt* from 1989 to 1991. The five highest quantity cereal exporting countries had an 82 percent share of the import market. The United States had the largest import market share of 44 percent. Germany had a 28 percent share of the import market, and the United Kingdom had a 6 percent share of the import market. Figure 27 shows the market shares for the five highest export level countries and other countries.

**Table 2. The Largest Importing Regions and Member Countries.**

Region/Country	Region/Country	Region/Country
<b>Latin America</b>	<b>Western Europe</b>	<b>East Asia</b>
Argentina	Austria	Afghanistan
Bolivia	Belgium-Luxembourg	Bangladesh
Brazil	Denmark	Bhutan
Chile	Faeroe Island	Brunei Darms
Colombia	Finland	Cambodia
Costa Rica	Former Yugoslavia	China
Ecuador	France-Monaco	East Timor
El Salvador	Germany	Hong Kong
Guatemala	Gibraltar	India
Honduras	Greece	Indonesia
Mexico	Iceland	Korean D P RP
Nicaragua	Ireland	Korean Republic
Paraguay	Italy	Lao P.Dem.R
Peru	Malta	Macau
Uruguay	Netherlands	Malaysia
Venezuela	Norway SB JM	Maldives
<b>Arab Developing</b>	Portugal	Mongolia
Bahrain	Spain	Myanmar
Cyprus	Sweden	Nepal
Iran	Switzerland-Liechtenstein	Pakistan
Iraq	United Kingdom	Philippines
Jordan	<b>North America Developed</b>	Singapore
Kuwait	Canada	Sri Lanka
Lebanon	United States	Thailand
Oman	Peurto Rico	Viet Nam
Qatar	U.S. Virgin Islands	
Saudi Arabia	<b>Developed Asia</b>	
Syrian AR	Israel	
Turkey	Japan	
United Arab Emirates		
Yemen		

The developing East Asian countries had 84,098 *mt* of breakfast cereal imports from 1989 to 1991. The five highest quantity cereal exporting countries had an aggregate 81 percent share of the import market. The United States had a 79 percent share and the United Kingdom a 2 percent share of this region's import market. The three remaining exporting countries had a cumulative market share of less than 1 percent. Figure 27 shows the market shares for the five greatest exporting countries and other countries.



**Figure 27. Percent of Regional Breakfast Cereal Imports, by Largest Importing Regions and Exporting Countries, 1989-91.**

Latin American countries imported 27,776 *mt* of breakfast cereal from 1989 to 1991. The five highest quantity breakfast cereal exporting countries had a 41 percent share of the import market. The United States' share of this import market was 40 percent. The other four exporting countries had a total market share of less than 1 percent.

Developed North American countries imported 112,916 *mt* of breakfast cereal from 1989 to 1991. The five highest quantity cereal exporting countries had a total 83 percent share of the import market. The Canadian share was 46 percent, and the United States had a 36 percent share of the developed North American region import market. Germany had a 1 percent share of the developed North American region import market. The Netherlands and the United Kingdom had a total share of the import market less than 1 percent.

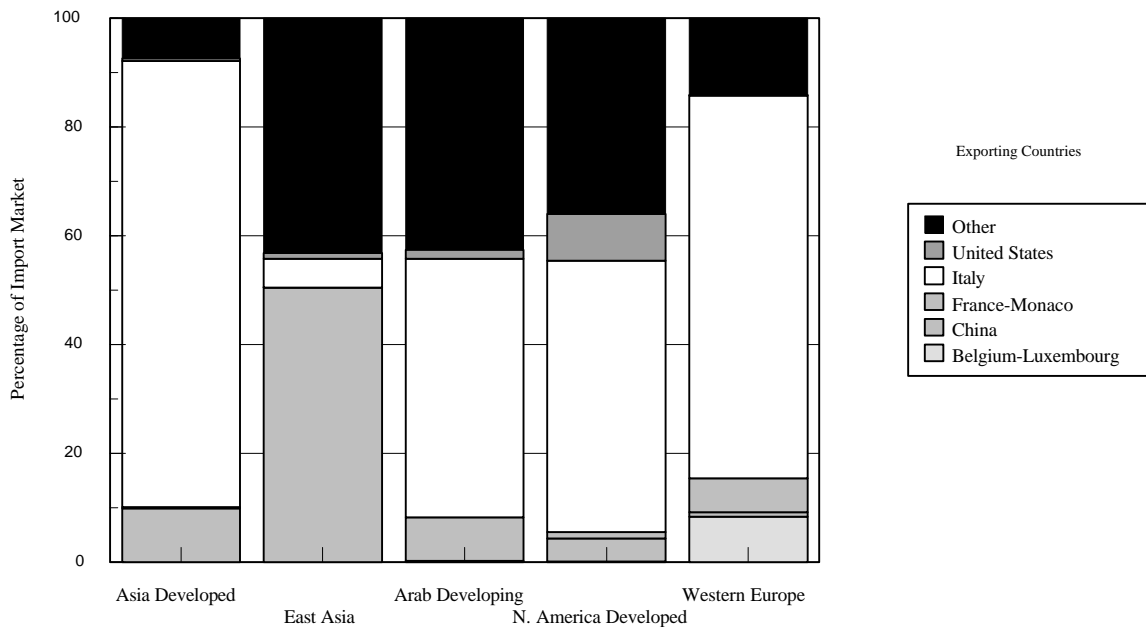
Western Europe was the largest importing region, importing 461,381 *mt* of breakfast cereal from 1989 to 1991. The United Kingdom had the largest share of the regional import market at 28 percent, Germany 26 percent. The Netherlands 14 percent, and the United States 3 percent. Canada's share of the import market was .2 percent.

#### 4.1.3. Regional Import Market Shares for Macaroni

The regions importing the greatest quantities of macaroni from 1989 to 1991 were developed Asia, developing East Asia, developing Arab countries, developed North America, and Western Europe. Belgium-Luxembourg, China, France-Monaco, Italy, and the United States were the largest exporters of macaroni from 1989 to 1991.

The largest importing region from 1989 to 1991 was Western Europe. The countries of Western Europe imported 1.6 *mmt* of macaroni from 1989 to 1991. The five countries exporting the most macaroni had an 86 percent share of the import market in Western Europe. Italy had the largest share of the import market at 70 percent. Belgium-Luxembourg had an 8 percent share, and France-Monaco had a 6 percent share of the import market. The United States and China had shares of the import market less than 1 percent. Figure 28 shows the import market shares for the five largest macaroni importing countries.

Developed North American countries imported 559,071 *mt* of macaroni from 1989 to 1991. The five countries exporting the most macaroni had a 64 percent share of the import market in developed North America. Italy had a 50 percent share of the import market, the United States 9 percent, and China 4 percent. France and Belgium-Luxembourg had shares of the import market of less than 2 percent.



**Figure 28. Percent of Regional Macaroni Imports, by Largest Importing Regions and Exporting Countries, 1989-91.**

Developing East Asian countries imported 306,740 *mt* of macaroni between 1989 and 1991. China had a 50 percent market share, and Italy had a 5 percent import market share. The three other exporting countries had shares of the import market of less than 1 percent.

Developed Asian countries imported 156,909 *mt* of macaroni from 1989 to 1991. Italy was the largest exporter to this region with an 82 percent share of the import market. China had a 10 percent share of the import market, but the three other exporting countries had less than a 1 percent share.

Developing Arab countries imported 90,255 *mt* of macaroni from 1989 to 1991. Italy had a 48 percent market share of the import market, France-Monaco 8 percent, and the United States 2 percent. Belgium-Luxembourg and China each had shares of less than 1 percent.

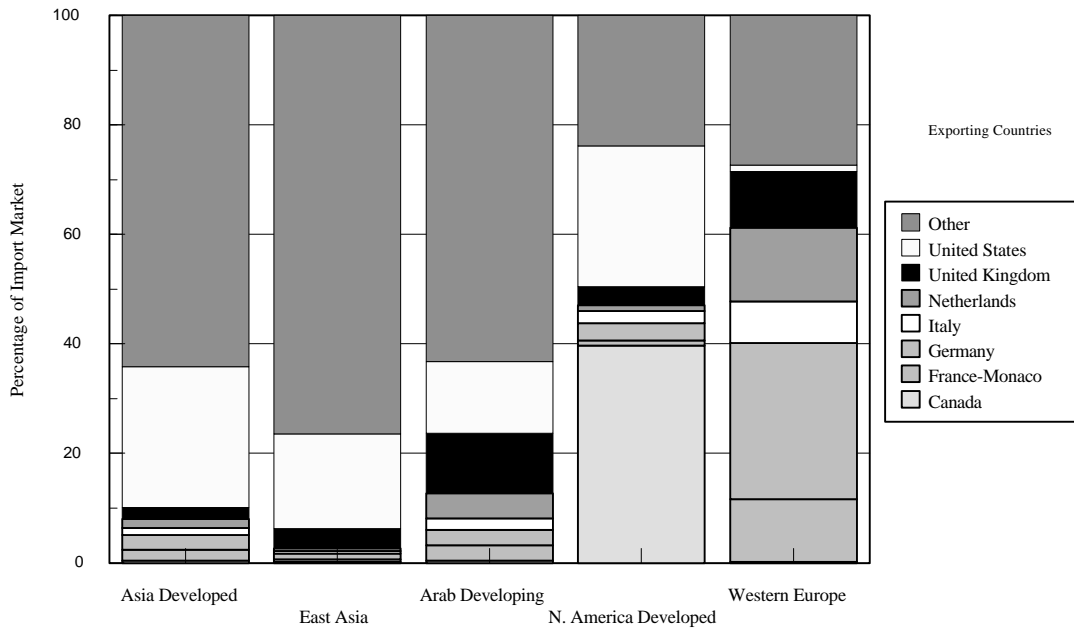
#### 4.1.4. Regional Import Market Shares for Bread/Biscuits

The largest importing regions of bread/biscuits from 1989 to 1991 were developed Asia, developing East Asia, developing Arab countries, developed North America, and Western Europe. The exporters of bread/biscuits to the world with the largest export market shares were Canada, France-Monaco, Germany, Italy, the Netherlands, the United Kingdom, and the United States.

Western European countries imported the most bread/biscuit products from 1989 to 1991, importing 2 *mmt*. Germany's market share of the Western Europe import market was 29 percent, the Netherlands 14 percent, France's 12 percent, the United Kingdom's 10 percent, and Italy's 8 percent. The United States and Canada had market shares less than 2 percent. Figure 29 shows the market share for the seven bread/biscuit exporting countries with the largest export market shares.

Developed North American countries imported 582,794 *mt* of bread/biscuit between 1989 and 1991. Canada's share of the import market was 40 percent, the United States' 26 percent, the United Kingdom's 3 percent, Germany's 3 percent, and Italy's 2 percent. France-Monaco's and the Netherlands' market shares were less than 2 percent. Figure 33 shows the market shares for the seven largest bread/biscuit exporting countries.

Developed Asian countries imported 44,502 *mt* of bread/biscuits from 1989 to 1991. The United States had the largest market share in this region's imports, with a 26 percent share. Germany, France-Monaco, Germany, Italy, the Netherlands, and the United Kingdom had market shares ranging from 1 percent to 3 percent.



**Figure 29. Percent of Regional Bread/Biscuit Imports, by Largest Importing Regions and Exporting Countries, 1989-91.**

Developing East Asian countries imported 43,683 *mt* of bread/biscuit from 1989 to 1991. The United States' share of the import market was 17 percent, the United Kingdom's 4 percent, and Germany's 1 percent. The remaining major exporting countries had market shares less than 1 percent.

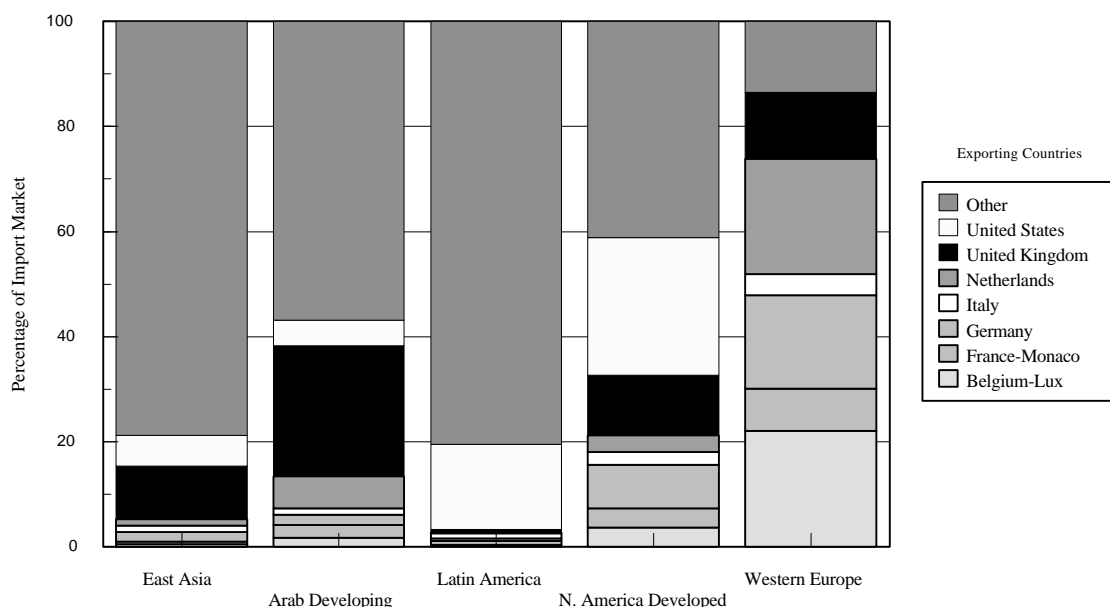
Developing Arab countries imported 24,456 *mt* of bread/biscuits from 1989 to 1991. The United States' share of the import market was the largest at 13 percent. The United Kingdom's share was 11 percent, the Netherlands' 5 percent, Italy's 2 percent, Germany's 3 percent, and France's 3 percent.

#### 4.1.5. Regional Import Market Shares for Pastries

The largest importing regions of pastries from 1989 to 1991 were developing East Asia, developing Arab countries, Latin America, developed North America, and Western Europe. Belgium-Luxembourg, France-Monaco, Germany, Italy, the Netherlands, the United Kingdom, and the United States had the largest export market shares for pastries from 1989 to 1991.



Western European countries imported 1.3 *mmt* of pastries from 1989 to 1991. Belgium-Luxembourg had the largest share of imports at 22 percent. The exporting countries of Europe had an 87 percent share of the Western European import market for pastries. The United States' share was less than .1 percent. Figure 30 shows the market shares of each importing region for the seven largest pastry exporting countries.



**Figure 30. Percent of Regional Pastry Imports, by Largest Importing Regions and Exporting Countries, 1989-91.**

The developed North American region imported 180,709 *mt* of pastries from 1989 to 1991. The United States had the largest share of the import market with a 26 percent share, the United Kingdom 11 percent, and Germany 8 percent. The remaining countries had market shares of less than 4 percent.

The developing East Asian region imported 142,527 *mt* of pastries from 1989 to 1991. The major world exporting countries of pastries had a total market share of only 21 percent. The United Kingdom had the largest share of the import market at 10 percent, followed by the United States with a 6 percent share. The remaining countries had market shares of less than 2 percent.

The developing Arab region imported 107,189 *mt* of pastries from 1989 to 1991. The United Kingdom had the largest share of this importing market with a 25 percent share, the Netherlands 6 percent, and the United States 5 percent. Belgium-Luxembourg, France-Monaco, Germany, and Italy had market shares of less than 3 percent.

The Latin American region imported 60,826 *mt* of pastries from 1989 to 1991. The major world exporting countries of pastries had only a 20 percent share of this import market. Exports from the United States had a 16 percent share of the import market, but the remaining major exporting countries had market shares of less than 1 percent.

## **4.2. Country Import Market Share Analysis**

Market shares in the five highest quantity importing countries and the five importing countries with the largest percentage net import shift were calculated. The highest quantity importing countries were determined from 1989 to 1991 data. Those countries with the largest percentage net import shift from 1992 to 1995 were analyzed as import markets. Only the largest exporting countries from 1989 to 1991 to the world market are reported as import sources for the national import markets. Imports from all other countries are categorized as imports from “other” countries. Market shares were calculated as a percent of total imports in the importing countries. The market shares were calculated for 1989 to 1991.

Except for the breakfast cereal products and macaroni products categories, Western European countries accounted for four of the top five importing countries. The United States was the other country among the top five importing countries for each product category. India was one of the top five importing countries in the breakfast cereal products category, and Hong Kong was one of the top five importing countries in the macaroni category. Imports to each of the Western European importing countries were consistently dominated by exports from other Western European countries. U.S. imports were comprised primarily of Canadian exports in the breakfast cereal and bread/biscuit products categories.

### **4.2.1. Country Import Market Shares for Breakfast Cereals**

The countries with the highest quantity of breakfast cereal imports from 1989 to 1991 were France-Monaco, Germany, Ireland, the United States, and India. France-Monaco imported 114,422 *mt*, the United States 72,326 *mt*, Germany 65,415 *mt*, India 60,091 *mt*, and Ireland 51,916 *mt* of breakfast cereals. These five countries had an aggregate world import market share of 50 percent. The countries with the largest world export market shares were Canada, the United States, Germany, the Netherlands, and the United Kingdom.

Imports to France-Monaco came primarily from the three Western European exporting countries. Germany, the Netherlands, and the United Kingdom had a 73 percent share of the import market in France-Monaco. The United States had a 3 percent share of the import market, and no imports to France-Monaco from Canada were reported. Figure 31 shows the shares of France-Monaco’s import market for the major exporting countries.

Imports to Germany came chiefly from the other two Western European exporting

countries. The Netherlands and the United Kingdom had a combined 76 percent share of the import market in Germany. The United States and Canada's share of the German import market was less than 1 percent. Figure 31 shows the shares of Germany's import market for the major exporting countries.

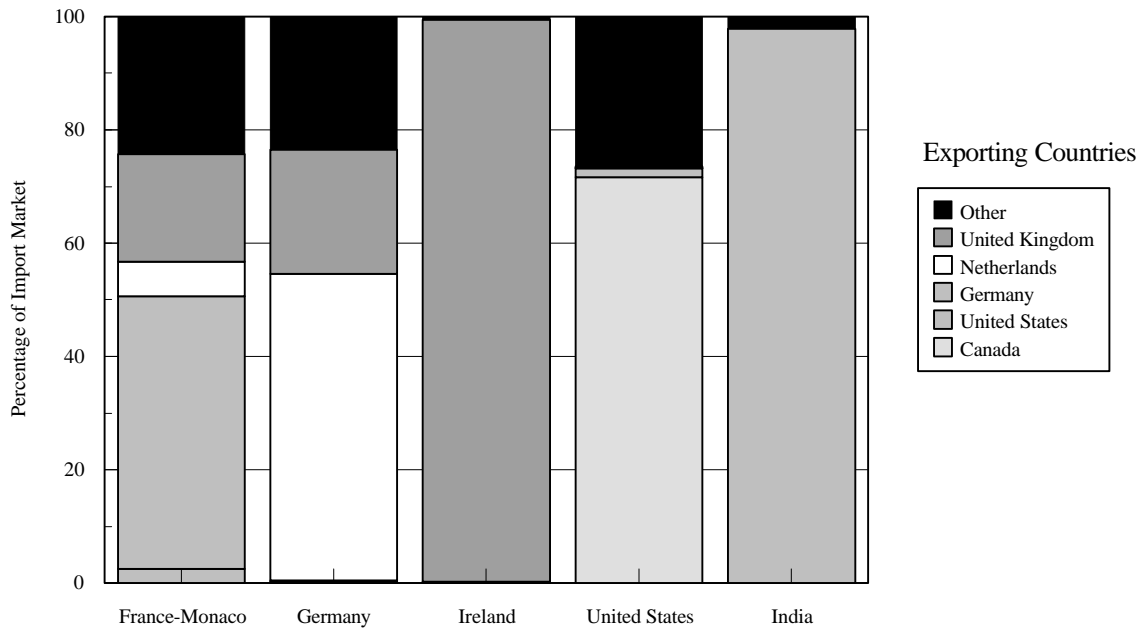
Ireland's imports of breakfast cereals were almost completely imported from in the United Kingdom. The United Kingdom had a 99 percent share of the Irish import market. The remaining countries had a combined market share of less than .2 percent. Figure 31 shows the shares of Ireland's import market for the major exporting countries.

A majority of the United States' imports of breakfast cereals came from Canada. Canada had a 72 percent share of the United States' import market. Germany had a 2 percent share, but the other exporting countries had market shares of less than 1 percent. Figure 31 shows the shares of the United States' import market for the major exporting countries.

Imports to India of breakfast cereals were primarily from the United States. The United States had a 98 percent share of the Indian import market for breakfast cereals. None of the other major exporting countries were reported to have exported breakfast cereals to India. Figure 31 shows the share of Ireland's import market for the major exporting countries.

#### 4.2.2. Country Import Market Shares for Macaroni

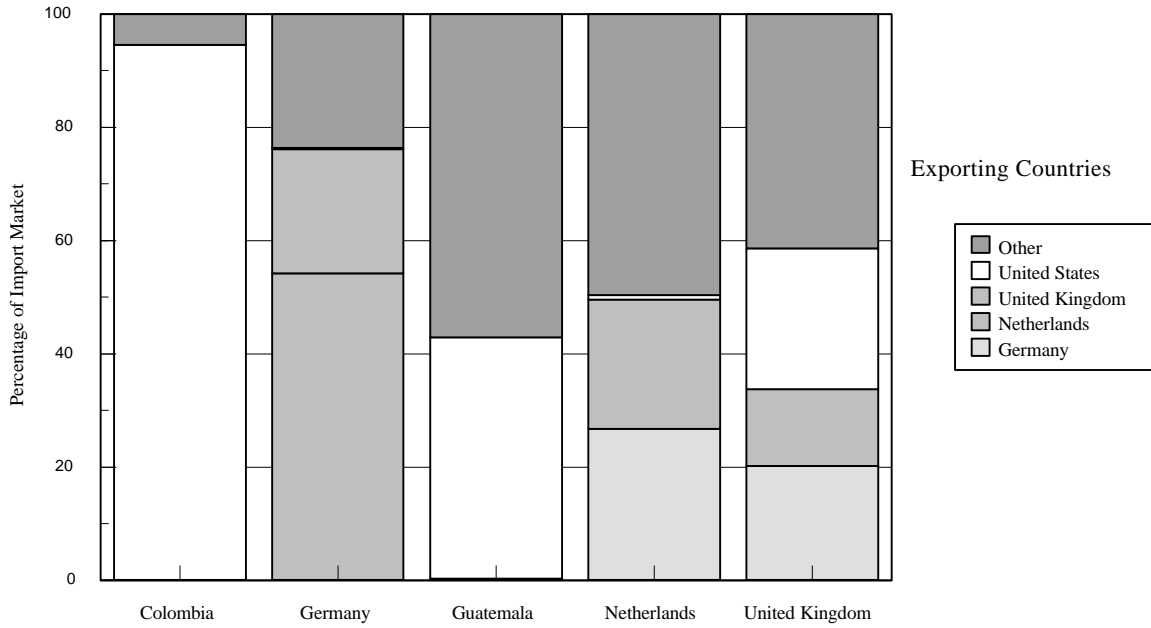
The countries with the greatest quantities of imports of macaroni from 1989 to 1991 were France-Monaco, the United States, Germany, Hong Kong, and the United Kingdom. The United States imported 439,899 *mt* of macaroni, Germany 435,885 *mt*, France-Monaco 392,656 *mt*, the United Kingdom 237,540 *mt*, and Hong Kong 178,409 *mt*. The combined world import market share for these five countries was 61 percent. The countries with the largest world export market shares were the United States, China, Belgium-Luxembourg, France-Monaco, and Italy.



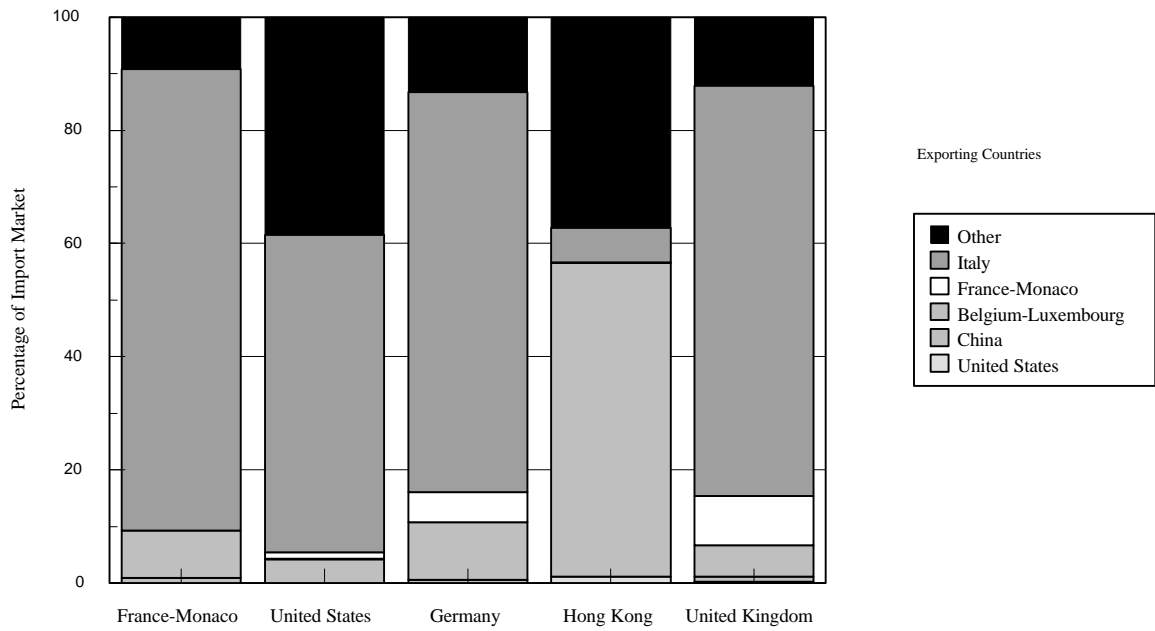
**Figure 31. Percent of National Breakfast Cereal Imports, by Largest Importing Countries and Exporting Countries, 1989-91.**

The countries with the highest percent net import shift for breakfast cereals were Colombia, Germany, Guatemala, the Netherlands, and the United Kingdom. Figure 32 shows each importing countries' imports distributed among the largest exporters from 1989 to 1991. The United States had the greatest share of the import markets in Colombia and Guatemala, at 95 percent and 43 percent, respectively. The Western European import markets of Germany and the Netherlands were dominated by exports from other Western European countries. The United States had less than a 1 percent market share in both import markets. In contrast with the other Western European import markets, the United States had the largest market share of the United Kingdom's breakfast cereal import market. In this import market, the United States had a 25 percent market share.

Figure 33 shows shares of the United States' macaroni import market for the major exporting countries. The primary import source for macaroni in the United States was Italy. Italy had a 56 percent share of the import market in the United States. China had a 4 percent share, but France-Monaco and Belgium-Luxembourg had market shares of 1 percent or less.



**Figure 32. Percent of National Breakfast Cereal Imports, by Largest Percentage Net Shift Importing Countries and Largest Exporting Countries, 1989-91.**



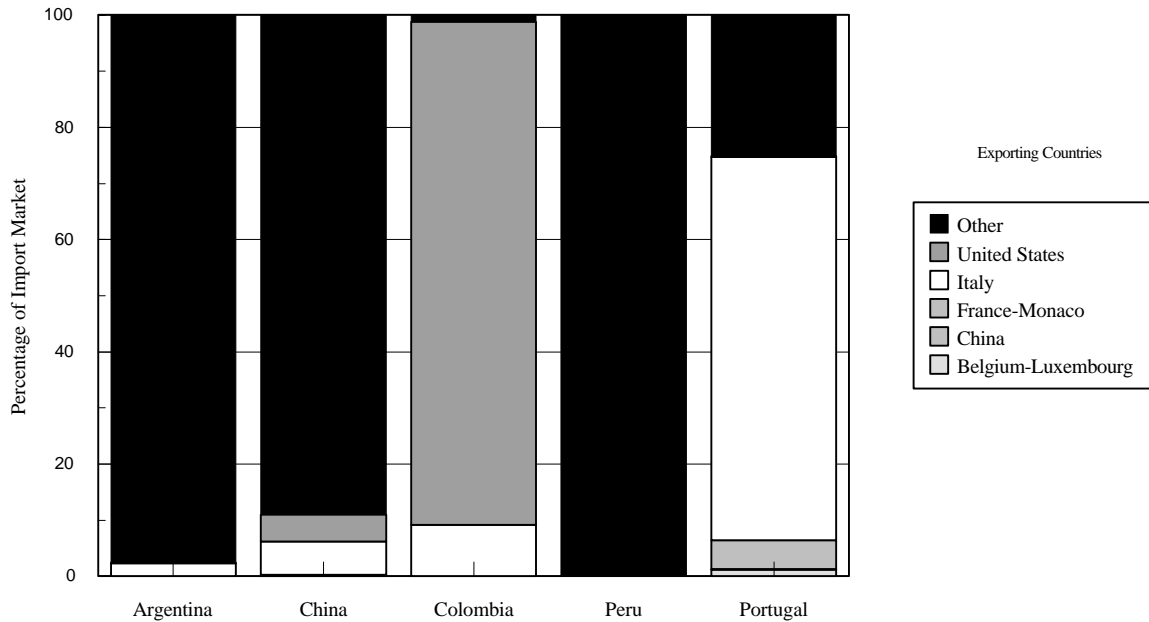
**Figure 33. Percent of National Macaroni Imports, by Largest Importing Countries and Exporting Countries, 1989-91.**

Germany's chief import source for macaroni products was Italy, with a 71 percent share. Belgium-Luxembourg had a 10 percent share and France-Monaco had a 5 percent share, but the United States and China had market shares of less than 1 percent in the German import market. Figure 33 shows shares of the German import market for the major exporting countries.

France-Monaco's largest import source for macaroni was also Italy, with an 82 percent share of the macaroni import market. Belgium-Luxembourg had an 9 percent market share, but the remaining countries had market shares of less than 1 percent. Figure 33 shows shares of France-Monaco's import market for the major exporting countries. The United Kingdom's largest import source for macaroni was Italy, with a 73 percent share. France-Monaco had an 9 percent share and Belgium-Luxembourg a 6 percent share of the import market. The United States and China had market shares of less than 1 percent. Figure 33 shows shares of the United Kingdom's import market for the major exporting countries.

Hong Kong was the only importing country analyzed that did not receive a majority of its macaroni imports from Italy. China was the primary source of imported macaroni in Hong Kong. China had a 55 percent share of the Hong Kong macaroni import market, Italy 6 percent, and the United States 1 percent. Belgium-Luxembourg and France had less than .1 percent shares of the Hong Kong macaroni import market. Figure 33 shows the share of the United Kingdom's import market for the major exporting countries.

The countries with the highest percentage net import shift were Argentina, China, Colombia, Portugal, and Peru. Figure 34 shows the shares of each country's macaroni import market for each of the major exporting countries. None of the major exporting countries were reported to have exported to Peru, so data for Peru are not included in Figure 38. Italy had the largest market share in Argentina, China, and Portugal, with a 36 percent, 6 percent, and 68 percent share, respectively, of each import market. The United States had a 5 percent share of the Chinese import market and a 2 percent share of Argentina's import market. The United States was the exporter with the greatest share of the Colombian market. The United States had a 90 percent share of the Colombian import market.

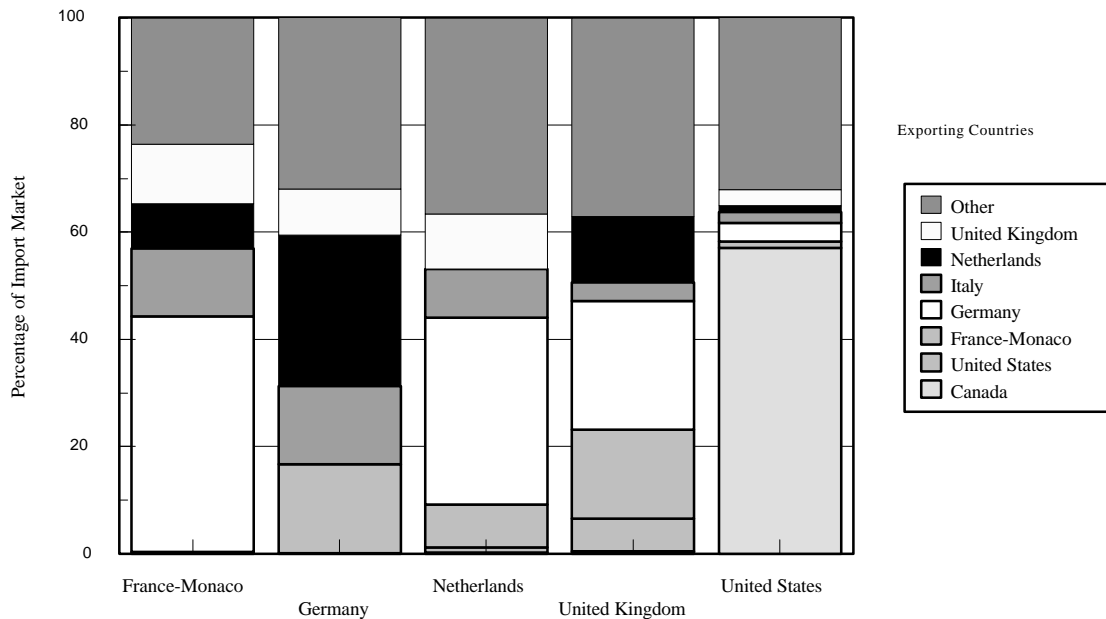


**Figure 34. Percent of National Macaroni Imports, by Largest Percentage Net Shift Importing Country and Largest Exporting Countries, 1989-91.**

#### 4.2.3. Country Import Market Shares for Bread/Biscuits

The countries with the greatest quantity of bread/biscuit imports from 1989 to 1991 were the United States, Germany, France-Monaco, the United Kingdom, and the Netherlands. The United States imported 404,659 *mt* of bread/biscuits, Germany 328,789 *mt*, France-Monaco 288,979 *mt*, the United Kingdom 201,822 *mt*, and the Netherlands 186,860 *mt* from 1989 to 1991. These five countries had a 58 percent import market share of total world imports of bread/biscuits. The countries with the largest world export market shares were Canada, the United States, France-Monaco, Germany, Italy, the Netherlands, and the United Kingdom.

Imports to the United States came primarily from Canada. Canada had a 57 percent share of the United States' bread/biscuit import market. The Western European countries had market shares ranging from 1 percent to 4 percent of the United States' import market. Figure 35 shows market shares of the United States' import market for the major exporting countries.



**Figure 35. Percent of National Bread/Biscuit Imports, by Largest Importing Countries and Exporting Countries, 1989-91.**

German imports of bread/biscuits came chiefly from other Western European countries. Imports from France-Monaco, Italy, the Netherlands, and the United Kingdom were 68 percent of German imports of bread/biscuits from 1989 to 1991. The Netherlands had the greatest market share of German imports with a market share of 28 percent. The United States and Canada had less than 1 percent shares of the German import market. Figure 35 shows market shares of the German import market for the major exporting countries.

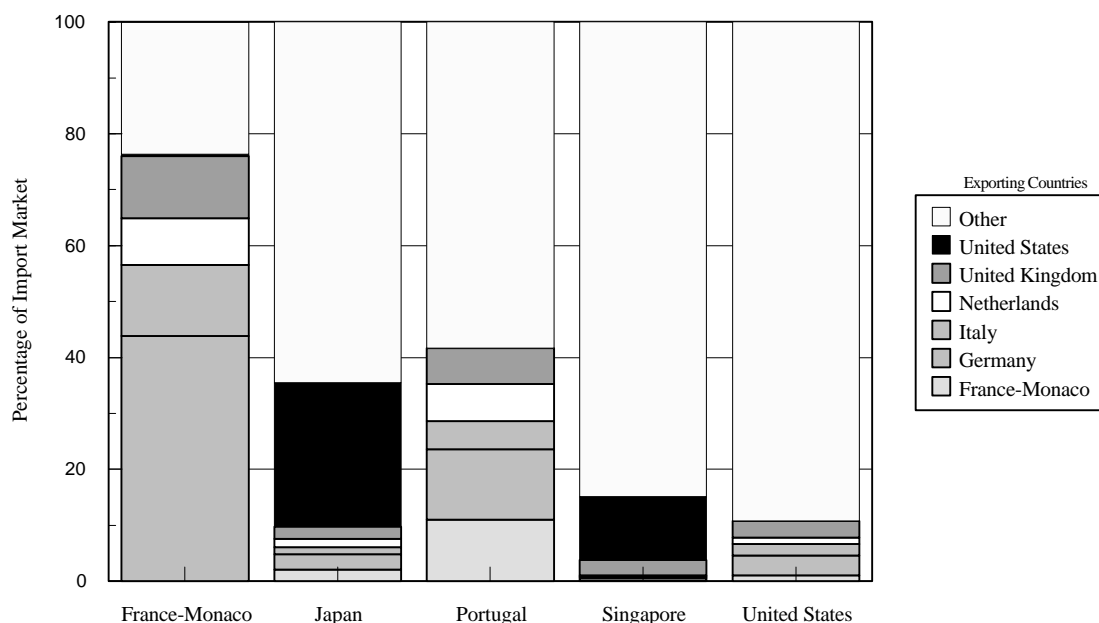
France-Monaco also imported most of its bread/biscuit imports from other Western European countries. Imports from Germany, Italy, the Netherlands, and the United Kingdom had a 76 percent market share of France-Monaco's import market for bread/biscuits. Germany had the largest share of the import market with a market share of 44 percent. The United States and Canada had less than 1 percent market shares in France-Monaco's import market. Figure 35 shows the major exporting countries' market shares of France-Monaco's import market.

The United Kingdom imported 56 percent of its bread/biscuit imports from the other Western European countries. Germany had the largest share of the import market, with a 24 percent share. The United States had a 6 percent share of the United Kingdom's import market, but Canada's share was less than 1 percent. Figure 35 shows market shares of the United Kingdom's import market for the major exporting countries.



The Netherlands' imports of bread/biscuits came primarily from the other Western European countries. France-Monaco, Germany, Italy, and the United Kingdom had a combined 62 percent share of the Netherlands' import market. Germany had the largest share of the import market with a 35 percent share. The United States and Canada had less than 1 percent shares of the import market for bread/biscuits in the Netherlands. Figure 35 shows the shares of the Netherlands' import market for the major exporting countries.

The countries with the highest percentage net import shift were France, Japan, Portugal, Singapore, and the United States. Figure 36 shows the major exporting countries' shares of these import markets. France and Portugal, the Western European countries, primarily imported from the other Western European countries. Over 76 percent of France's imports of bread/biscuits were from Germany, Italy, the Netherlands, and the United Kingdom. Portugal imported over 41 percent of its total bread/biscuit imports from these Western European exporters. The United States had less than a 1 percent share of the French and Portuguese import markets. In Japan and Singapore, the United States had the largest market shares of the import markets. The United States had a 26 percent share of the Japan's import market and 11 percent of Singapore's import market. A majority of Japan and Singapore's imports did not come from the major exporting countries.

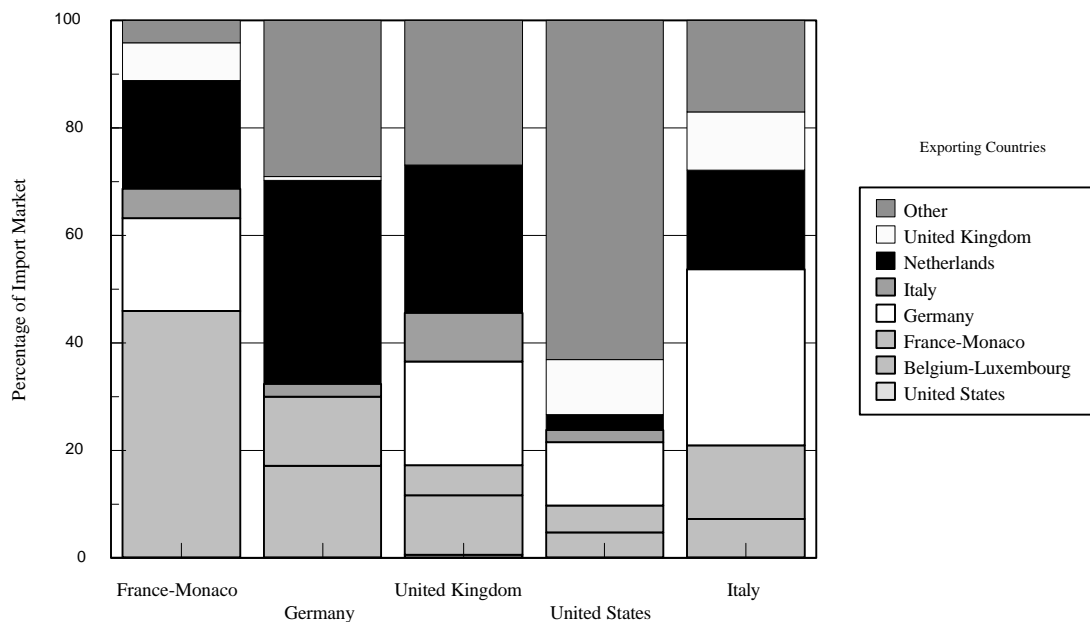


**Figure 36. Percent of National Bread/Biscuit Imports, by Largest Percentage Net Shift Importing Countries and Largest Exporting Countries, 1989-91.**

#### 4.2.4. Country Import Market Shares for Pastries

The countries with the greatest quantity of pastry imports from 1989 to 1991 were France-Monaco, Germany, the United Kingdom, the United States, and Italy. France-Monaco imported 388,198 *mt* of pastries, Germany 228,705 *mt*, the United Kingdom 101,654 *mt*, the United States 94,214 *mt*, and Italy 90,876 *mt* from 1989 to 1991. These five countries had a combined 49 percent share of world imports of pastries. The countries with the greatest world export market shares were the United States, Belgium-Luxembourg, France-Monaco, Germany, the Netherlands, the United Kingdom, and Italy.

France-Monaco imported 96 percent of its total imports of pastries from the major Western European exporting countries. Belgium-Luxembourg had the largest share of France-Monaco's imports with a 46 percent market share. The United States' share of the import market was .03 percent. Figure 37 shows market shares of France-Monaco's pastry import market for the major exporting countries.



**Figure 37. Percent of National Pastry Imports, by Largest Importing Countries and Exporting Countries, 1989-91.**

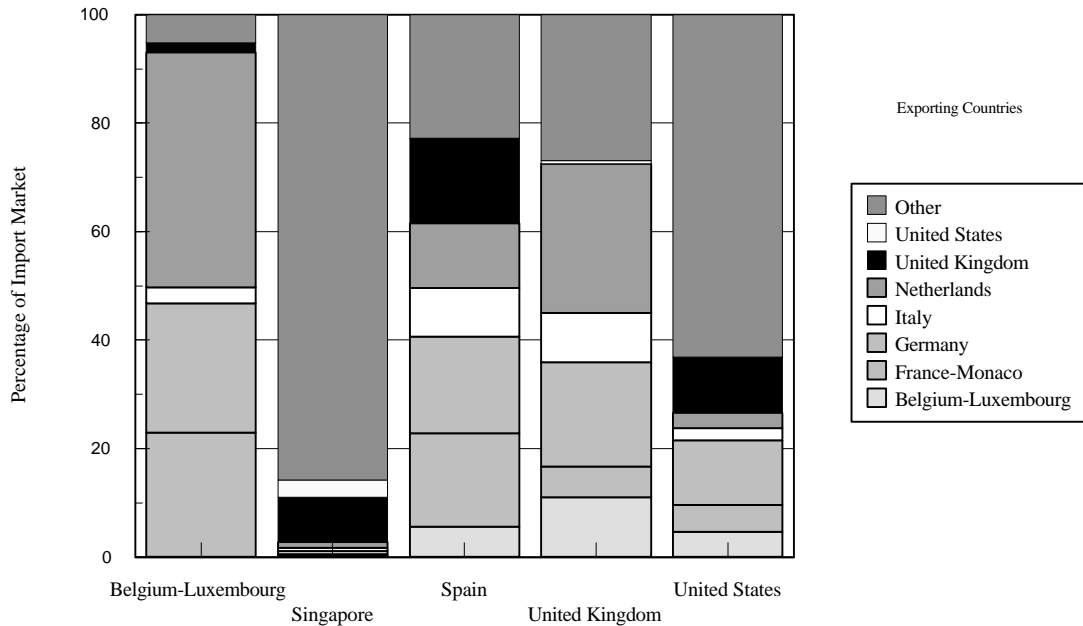
Germany imported 71 percent of its total imports of pastries from the major Western European exporting countries. The Netherlands had the largest share of German imports with a 38 percent market share. The United Kingdom had only a .7 percent share of the German import market, and the United States had a .03 percent share.

The United Kingdom imported 73 percent of its total pastry imports from the major Western European exporting countries. The Netherlands had the largest share of the United Kingdom's pastry imports with a 28 percent market share. The United States' share of the import market was .5 percent.

The other major exporting countries, which are all in Western Europe, had only a 37 percent share of the United States' import market for pastries. Germany had the largest share of the U.S. import market with an 12 percent share, and the United Kingdom had a 10 percent share. The remaining major exporting countries had market shares ranging from 2 percent to 5 percent of the U.S. import market.

Italy imported 83 percent of its pastries from the major Western European exporters. Germany had the largest share of the Italian pastry import market with an import share of 33 percent. The United States had a .02 percent share of the Italian import market.

The countries with the greatest net percentage import shift were Belgium, Singapore, Spain, the United Kingdom, and the United States. Figure 38 shows the shares of these countries' import markets for the major exporting countries. In the three Western European import markets, the United States had less than a .5 percent share. In Singapore, the United States had a 3 percent share. In Belgium's pastry import market, 95 percent of the imports were from the major Western European exporting countries. Spain had 77 percent of its pastry imports from the major Western European exporting countries, and 73 percent of the United Kingdom's pastry imports were from the major Western European exporting countries. In the United States, 37 percent of pastry imports came from the major Western European exporting countries.



**Figure 38. Percent of National Pastry Imports, by Largest Percentage Net Shift Importing Countries and Largest Exporting Countries, 1989-91.**

## 5. CONCLUSION

This study of trade in value-added wheat products was done because of the recent rapid growth of the global market for value-added wheat products (Ruppel, Handy, and Henderson, 1996). The growth in this market encourages new firms, including U.S. firms, to enter the market. U.S. producers of these products need to determine which countries to export to, which products to export, and knowledge of primary competitors in each product market (Root, 1987). One means of determining which markets to enter is comparing market size; another means is comparing market growth rates. There are problems with using each measurement independently. A large market may be growing very slowly relative to other markets, or it may be shrinking. A rapidly growing market may be too small to export to. The percentage net shift is one way to use both market measures to determine which markets to enter. Knowledge of primary competitors is helpful to determining effective marketing strategies in particular markets (Root, 1987).

Results from this study showed that in each product category, the largest importing countries were typically among the slowest growing import markets. The primary competitors of the United States for world market share in each product category were Western European countries. In each product category, average global growth in exports

has been increasing at a faster rate than U.S. exports. Some specific results were as follows:

- The largest regional import market for each product category was the Western European region, and the largest national import markets for each product were Germany, France-Monaco, and the United States.
- In contrast with the United States having a positive percent net import shift in three of the four product groups, the United States had negative percent net export shifts for every product. This means that for most of the product markets the United States import market is growing faster than the world average. However, U.S. exports in each of the four value-added wheat product categories is growing at a rate slower than the world average.
- Despite the United States typically having less than a 3 percent share of import markets in Western Europe, the United States did have the largest share of the United Kingdom's breakfast cereal import market.
- Italy's exports of macaroni dominated every macaroni importing region, except developing East Asia.

The United States, despite indications of slower export growth than the world average, is still one of the largest exporters and has positive export growth in each value-added wheat product category for the years analyzed. The growing global market for these products provides an opportunity for U.S. products to capture a larger market share.

The rapid growth in world imports for each category of value-added wheat products provides producers with a larger market for their exports. This study showed that U.S. producers are not capturing a larger market share of the global market. Instead, U.S. exports are growing at a slower rate than the world growth in exports. Any policies intended to increase U.S. exports of value-added wheat products needs to re-evaluated. Public support of programs to promote value-added wheat products can help U.S. producers to capture a larger share of this growing market.

Implications of this study for the private firm involve market selection and identification of major competitor exporters. By focusing on major competitors in each product category, companies can study their effective marketing processes. This study shows which are the larger import markets, the highest growth import markets, and those import markets with the highest percent net shift. This information can be used to calculate risks for each market according to the firm's own weights for market size and growth. Further study of less aggregate product categories and information on other market characteristics is needed for more complete risk assessments.

## REFERENCES

- Green, Robert T., and Arthur W. Allaway. "Identification of Export Opportunities: A Shift-share Approach." *Journal of Marketing*, Vol. 48, pp. 83-88, Winter 1985.
- Huff, David L., and Lawrence A. Sherr. "Measure for Determining Differential Growth Rates of Markets." *Journal of Marketing Research*, Vol. IV, pp. 391-39, November 1967.
- Root, Franklin R. *Entry Strategies for International Markets*. D.C. Heath and Company, Lexington, Massachusetts, 1987.
- Ruppel, F., C. Handy, and D. Henderson. "The U.S. Food Sector." In *Globalization of the Processed Foods Market*, Economic Research Service, U.S. Department of Agriculture. Washington, DC. Agricultural Economics Report Number 742, 1996.
- United Nations. *Comtrade Data*, 1996.