

TEXTILE AND APPAREL IMPOPTS
FROM THE PEOPLE'S REPUBLIC OF CHINA:
AN EXAMINATION OF MARKET SHARE AND PRICE ELASTICITY

by

Susan Beers Hester

Dissertation submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Clothing and Textiles

APPROVED:

L. M. Gurel, Chairman

S. J. Ritchey

D. E. Hinkle

B. E. Densmore

J. E. Bowker

M. J. Norton

R. G. Gilbertson

May, 1983

Blacksburg, Virginia

8/10/82
nke

TEXTILE AND APPAREL IMPORTS
FROM THE PEOPLE'S REPUBLIC OF CHINA:
AN EXAMINATION OF MARKET SHARE AND PRICE ELASTICITY
by
Susan B. Hester

(ABSTRACT)

The international trade of textiles and apparel between the United States and the People's Republic of China was the focus of this research. It had three objectives. The first objective was to investigate the textile and apparel industrial sectors in the PRC, and to describe the PRC's pattern of importation and exportation of textile and apparel products worldwide. The second objective was to investigate the role of price in relation to import market share. The market share of consumption rather than market share of imports was examined in the final objective.

Data for these analyses were obtained from the Textile Information Management System data base (TIMS), the Department of Labor statistical data base (LABSTAT), United Nations international trade series, and the State Statistical Bureau of the PRC. SAS procedures were used for analyses (SYSREG and TSCSREG), and to graphically depict the changes in market shares. Overlay graphs showed the

percentage of consumption supplied to the U.S. market by the domestic industry, the PRC, and other importing countries.

The results of the linear regression analyses suggest that for the 21 active categories studied, the combination of relative price, market share lagged one quarter, and market share lagged two quarters is a significant predictor of the current period's market share; but relative price alone is an unreliable predictor. From 1976 to 1981 the other importing countries increased their market share in these selected categories by five or more percentage points in twice as many categories as did the PRC, and in three times as many as U.S. producers. Increases and decreases in consumption balanced each other out, but domestic production showed twice as many decreases as increases in these categories. Overall, U.S. producers were more competitive in man-made fiber and wool apparel than in comparable cotton categories. They were also more competitive in the female apparel market than in the male apparel market.

The implications of this research relate to policy formulation of textile agreements between the United States and the People's Republic of China, and to possible production decisions by U.S. manufacturers.

ACKNOWLEDGEMENTS

The support and encouragement of many people made earning this degree possible for me. I am especially grateful to my major professor, Dr. Lois Gurel, who has been with me from the beginning; sharing the best and making the worst better. She has been my advocate, my teacher, my landlord, and especially my friend. Thanks are also extended to the other members of my committee: to Dean S. J. Ritchey, whose leadership encouraged me to give the program a try; to Dr. Barbara Densmore, whose efforts to develop the Ph.D program made it possible for me to study at this university; and to Dr. Jeanette Bowker, whose words of support at my master's defense influenced my decision to go on. I am grateful to Dr. Marjorie Norton, who stimulated my interest in this topic; to Dr. Dennis Hinkle, who gave me hard times which were among the best I've ever had; and to Roger Gilbertson, who was the critical link between the university and my working world. His programming skills and willingness to contribute made this project possible.

Many people in the International Trade Administration contributed to this effort. I am grateful to Deputy Assistant Secretary Paul O'Day for the opportunity to work in ITA. I appreciate the help of all my former colleagues in the Office of Textiles and Apparel, especially Carl

Ruths, Ross Arnold, Laurie McKenna, Jim Bennett, Claudia Wolfe, Judy McConahy, Shirley Hargrove, Michelle Goodman, and Dennis Rudy (of USITC) who cheerfully found time to answer my questions and help me locate data.

Special thanks go to my unofficial committee members, Dr. Kitty Dickerson, Dr. Nick Tideman, and David Barton, whose interest enriched my graduate experience. I especially appreciate David's role as Washington economist and statistician; his practical analogies and patient explanations of econometric theory always kept me coming back for more.

Finally I give my loving thanks to my friends and family who stood with me throughout this effort. Without the assurance of their support for my parenting role, I would never have begun my doctoral work. I am grateful to Katie's grandmother and Great Aunt Shirley who spent summers on the swimming lesson circuit so I could study in Blacksburg; and to Granny Brown, who summered in Alexandria and wintered in Waynesboro at her half-way house motel.

The last two people gave up the most so that I could reach my goals. My husband, Mike, and my daughter, Katie, endured separations, juggled schedules, and experienced a precipitous drop in the level of expected domestic service. For their understanding and ever present support I am truly grateful.

TABLE OF CONTENTS

	Page
ABSTRACT	ii
ACKNOWLEDGEMENTS.	iv
LIST OF TABLES.	viii
LIST OF FIGURES	xi
Chapter	
I. INTRODUCTION AND BACKGROUND OF THE PROBLEM	1
International Trade Theory.	12
International Trade in Textiles and Apparel	19
II. STATEMENT OF THE RESEARCH PROBLEM.	30
The Product Life Cycle Theory	31
Objectives.	37
Assumptions	40
Limitations	41
III. OBJECTIVE ONE.	42
China's Textile and Apparel Industries.	43
China's Pattern of Textile and Apparel Trade Worldwide	60
Textile Trade Between the United States and the People's Republic of China	72
IV. OBJECTIVE TWO.	87
Methodology	88
Discussion.	93
Summary	103
V. OBJECTIVE THREE.	106
Methodology	106
Discussion.	109
Summary	165

VI.	SUMMARY AND CONCLUSIONS.	174
VII.	RECOMMENDATIONS FOR FURTHER RESEARCH . . .	198
	REFERENCES.	201
	APPENDICES.	207
	Appendix A: Glossary of Textile and Apparel Trade Terms.	208
	Appendix B: Major Textile Trade Agreements . .	214
	Appendix C: MFA Signatories.	216
	Appendix D: MFA Signatories With Which the U.S. Has Bilateral Agreements. . .	218
	VITA.	220

LIST OF TABLES

Table	Page
1. Textile and Apparel Exports from China to Selected Countries, 1976 1978 1980	65
2. Textile and Apparel Import Classification . .	90
3. Elasticity (Log) Analysis for 21 Selected Categories	95
4. Elasticity (Log) Analysis 21 Selected Categories PRC---PRC Competitors	98
5. Regression (Linear) Analysis for 11 Selected Categories	99
6. Regression (Linear) Analysis for 10 Selected Categories	100
7. Comparison of SIC Codes (Domestic Output) Export Codes, and Import Codes	108
8. U.S. Market Share Comparison 1976-1981 Category 315: Cotton Printcloth	110
9. U.S. Market Share Comparison 1976-1981 Category 320: Cotton Fabrics.	113
10. U.S. Market Share Comparison 1976-1981 Category 333: Men's & Boys' Cotton Suit Coats	116
11. U.S. Market Share Comparison 1976-1981 Category 334: Mens' & Boys' Cotton Coats. . .	120
12. U.S. Market Share Comparison 1976-1981 Category 335: Women's & Girls' Cotton Coats .	123
13. U.S. Market Share Comparison 1976-1981 Category 337: Cotton Playsuits.	125
14. U.S. Market Share Comparison 1976-1981 Category 338: Men's & Boys' Cotton Knit Shirts.	128
15. U.S. Market Share Comparison 1976-1981 Category 339: Women's & Girls' Cotton Knit Shirts.	130

16.	U.S. Market Share Comparison 1976-1981 Category 340: Men's & Boys' Cotton Woven Shirts.	133
17.	U.S. Market Share Comparison 1976-1981 Category 341: Women's & Girls' Cotton Woven Shirts.	136
18.	U.S. Market Share Comparison 1976-1981 Category 345: Cotton Sweaters	138
19.	U.S. Market Share Comparison 1976-1981 Category 347: Men's & Boys' Cotton Trousers .	141
20.	U.S. Market Share Comparison 1976-1981 Category 348: Women's & Girls' Cotton Pants .	144
21.	U.S. Market Share Comparison 1976-1981 Category 445: Men's & Boys' Wool Sweaters . .	146
22.	U.S. Market Share Comparison 1976-1981 Category 446: Women's & Girls' Wool Sweaters.	149
23.	U.S. Market Share Comparison 1976-1981 Category 635: Women's & Girls' Man-made Coats	151
24.	U.S. Market Share Comparison 1976-1981 Category 640: Men's & Boys' Man-made Woven Shirts. . , ...	154
25.	U.S. Market Share Comparison 1976-1981 Category 641: Women's & Girls' Man-made Woven Shirts.	156
26.	U.S. Market Share Comparison 1976-1981 Category 645: Men's & Boys' Man-made Sweaters	159
27.	U.S. Market Share Comparison 1976-1981 Category 646: Women's & Girls' Man-made Sweaters.	162
28.	U.S. Market Share Comparison 1976-1981 Category 648: Women's & Girls' Man-made Pants	164
29.	Summary of Changes from 1976-1981 in Market Share, Consumption, and Production	167

30.	Summary of Changes from 1976-1981 in Market Share, Consumption, and Production Aggregated by Fiber Content.	163
31.	Change in Market Share, Consumption, and Production for 21 Selected Categories 1976-1981.	169

LIST OF FIGURES

Figure	Page
1. U.S. Total Trade with China in Millions of \$, 1973-1982.	3
2. U.S. Trade with China in Millions of \$, 1973-1982, U.S. Exports to China, U.S. Imports from China	4
3. Imports into the United States in Millions of \$, 1976-1982, Textiles and Apparel from the PRC.	6
4. Imports into the United States in Millions of \$, 1976-1982, Textiles and Apparel from the World.	7
5. Imports into the United States in Millions of \$, 1976-1982, Apparel from the PRC.	9
6. Imports into the United States in Millions of \$, 1976-1982, Apparel from the World.	10
7. A Schematic Presentation of the U.S. Trade Position in the Product Life Cycle	18
8. Textile Product Imports into the PRC for 1979, Millions of Dollars.	67
9. PRC Textile and Apparel Exports to Developed Countries (excluding the U.S.) 1979.	71
10. Textile and Apparel Exports from the United States to the People's Republic of China in Thousands of Dollars F.A.S. Value	73
11. U.S. Imports from the PRC in Thousand Square Yard Equivalents, Cotton Textiles (T) and Apparel (A), 1975-1982	78
12. U.S. Imports from the PRC in Square Yard Equivalents 1975-1982, Wool Textiles (T) and Apparel (A).	81
13. U.S. Imports from the PRC in Thousand Square Yard Equivalents, Man-made Textiles (T) and Apparel (A), 1975-1982	83

14.	U.S. Imports from the PRC in Thousand Square Yard Equivalents, Aggregate Textiles (T) and Apparel (A), 1975-1992	86
15.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 315: Cotton Printcloth	111
16.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 320: Cotton Fabrics.	114
17.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 333: Men's & Boys' Cotton Suit Coats	117
18.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 334: Mens' & Boys' Cotton Coats.	119
19.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 335: Women's & Girls' Cotton Coats	122
20.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 337: Cotton Playsuits.	124
21.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 338: Men's & Boys' Cotton Knit Shirts.	127
22.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 339: Women's & Girls' Cotton Knit Shirts.	129
23.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 340: Men's & Boys' Cotton Woven Shirts.	132

24.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 341: Women's & Girls' Cotton Woven Shirts.	135
25.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 345: Cotton Sweaters	137
26.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 347: Men's & Boys' Cotton Trousers .	140
27.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 348: Women's & Girls' Cotton Pants .	143
28.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 445: Men's & Boys' Wool Sweaters . .	145
29.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 446: Women's & Girls' Wool Sweaters.	148
30.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 635: Women's & Girls' Man-made Coats	150
31.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 640: Men's & Boys' Man-made Woven Shirts.	153
32.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 641: Women's & Girls' Man-made Woven Shirts.	155

33.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 645: Men's & Boys' Man-made Sweaters	158
34.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 646: Women's & Girls' Man-made Sweaters.	161
35.	Plot of Percentage Consumption Supplied to the United States Market by the Domestic Industry, the PRC, and Other Countries Category 648: Women's & Girls' Man-made Pants	163

Chapter I

INTRODUCTION AND BACKGROUND OF THE PROBLEM

The United States and the People's Republic of China resumed trade in 1972 after a lapse of over twenty years. China's commerce with the United States has reflected political attitudes since President Nixon's visit opened trade in that year. The linkage of economics and politics is expected to continue despite the "normalization" of relations in 1979. Since 1972 U.S.-Sino trade has shown wide fluctuation, totaling \$935 million in 1974; \$336 million in 1976; and \$1.1 billion in 1978. This erratic trade pattern reflects complex economic pressures and the changing circumstances of world trade, as well as attitudes toward the United States in particular and foreign trade in general (MacDougall, 1980).

Trade between the U.S. and the PRC increased substantially after the U.S. officially recognized China on January 1, 1979. Bilateral* (The first occurrence of a word defined in the glossary, Appendix A, is marked with an asterisk.) agreements were signed in September 1980, concerning maritime affairs, civil aviation links, textile trade, consular matters, and trade exhibits (Doing Business With, 1980).

The PRC was granted Most Favored Nation (MFN)* status in 1980 and became eligible for Eximbank loans as well as Overseas Private Investment Corporation (OPIC) coverage ("China Readjustment Policies", 1981). The MFN status gives China a considerable advantage in trade with the United States; tariffs averaging 24 percent before the MFN status was granted were reduced to an average of eight percent in 1980 (MacDougall, 1980).

The official recognition of China, the signing of the bilateral agreements, and the granting the MFN status are all reflected in the trade totals for the past four years. US-PRC trade totaled \$2.3 billion in 1979, \$4.9 billion in 1980, \$5.4 billion in 1981, and \$5.2 billion in 1982 (Department of Commerce, 1983; 29th Quarterly Report, 1982). (See Figure 1 for total trade. Export and imports trends are plotted in Figure 2.) China is the leading Non-Market Economy* (NME) trading partner of the United States. China received 46 percent of all U.S. exports to NME countries and provided the U.S. with 54 percent of all imports received from NME countries during 1981 (31st Quarterly Report, 1982). The PRC imports essentials from the United States: food products, industrial raw materials, and equipment. Textile raw materials are important U.S. exports to China. Three items: wheat, non-continuous polyester fibers, and

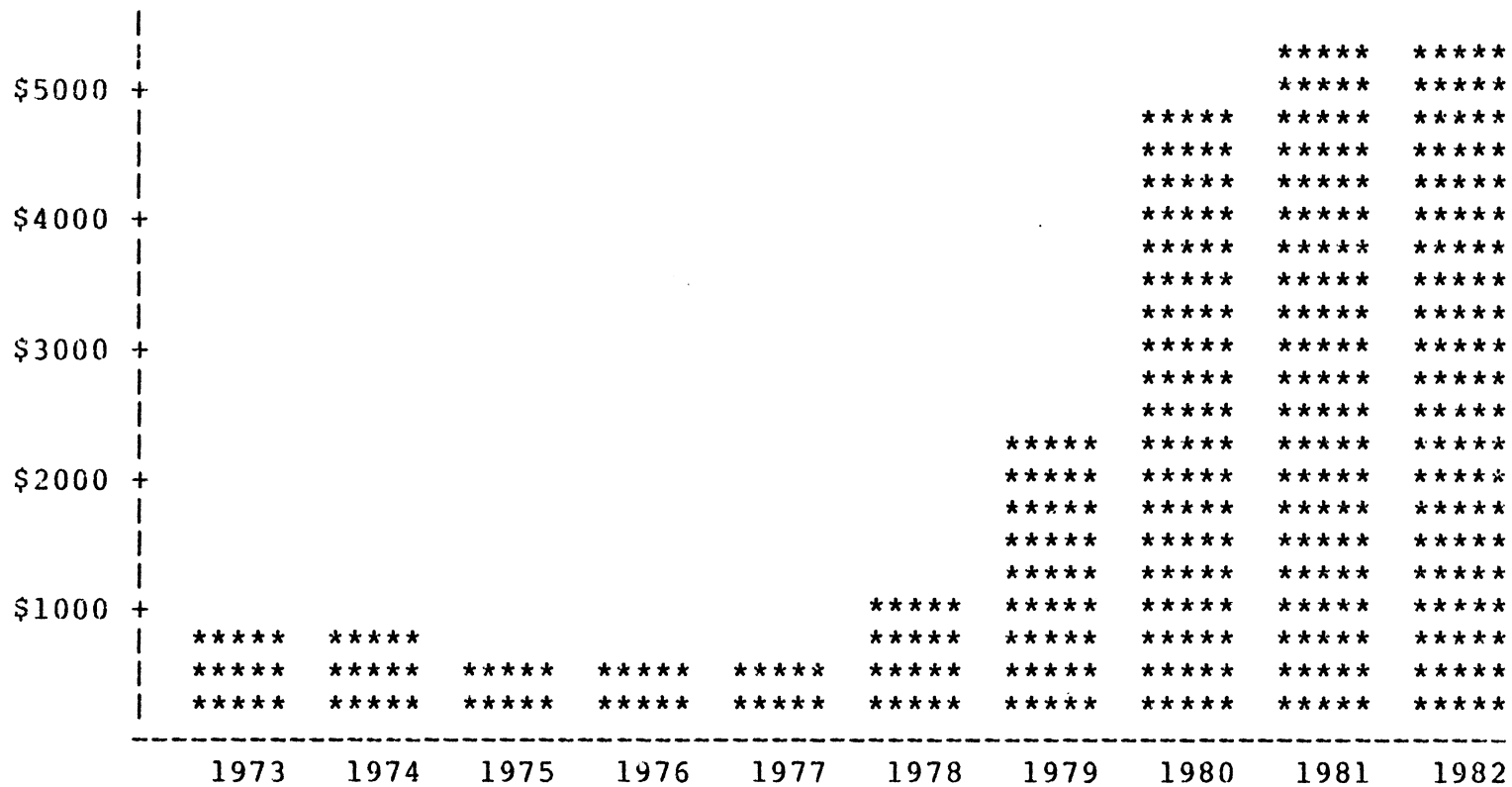


Figure 1. U.S. Total Trade with China in Millions of \$, 1973-1982

Source: Official Statistics U.S. Department of Commerce

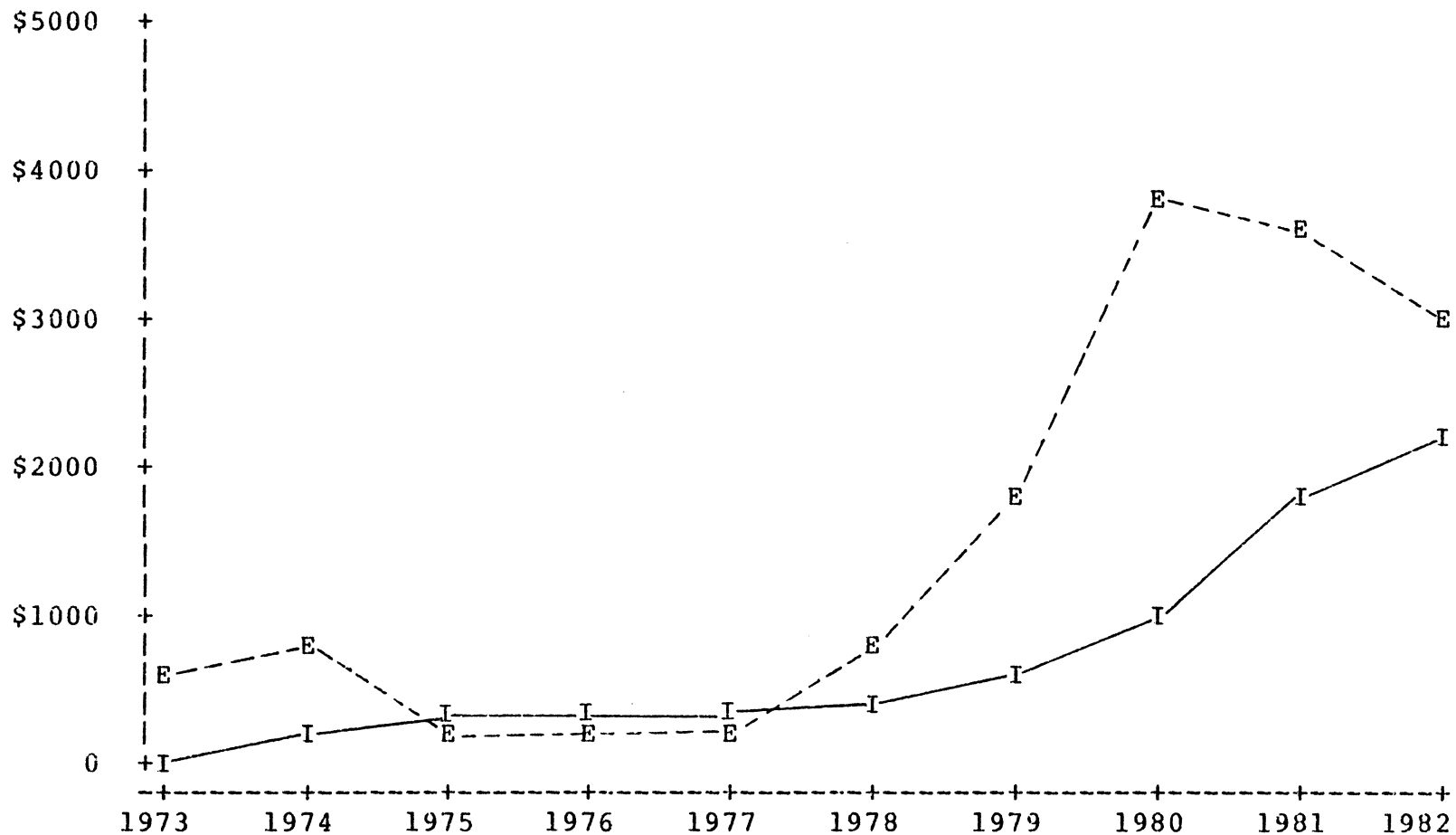


Figure 2. U.S. Trade with China in Millions of \$, 1973-1982
(E) U.S. Exports to China
(I) U.S. Imports from China

Source: Official Statistics U.S. Department of Commerce

textured polyester yarns accounted for 64 percent of all U.S. exports to China during the third quarter of 1981 (28th Quarterly Report, 1981).

China's textile and apparel imports to the U.S. are both significant in size and fast growing. In fact, since trade in these commodities began in 1972, China has risen from an unranked position to fourth in terms of volume of goods imported into the U.S. Recent informal predictions from the Office of Textiles and Apparel in the Department of Commerce indicate that China may overtake the big three, Hong Kong, Taiwan, and Korea, and move into first place as early as 1983.

The first few years, from 1972 to 1976, showed an erratic pattern of trade in textiles and apparel paralleling the general trade pattern between the two countries, but since 1976 the trends have been consistent. In 1976 textile and apparel imports from the PRC totaled \$49 million. After a slight decline in 1977 to \$42 million, the trend turned sharply upward to an astonishing total of \$894 million in 1982 (see Figure 3). Textiles and apparel imported into the U.S. from all countries also increased during this period but at a much slower rate. The world total in 1976 was \$4.2 billion; in 1982 it had increased to \$9.4 billion (see Figure 4).

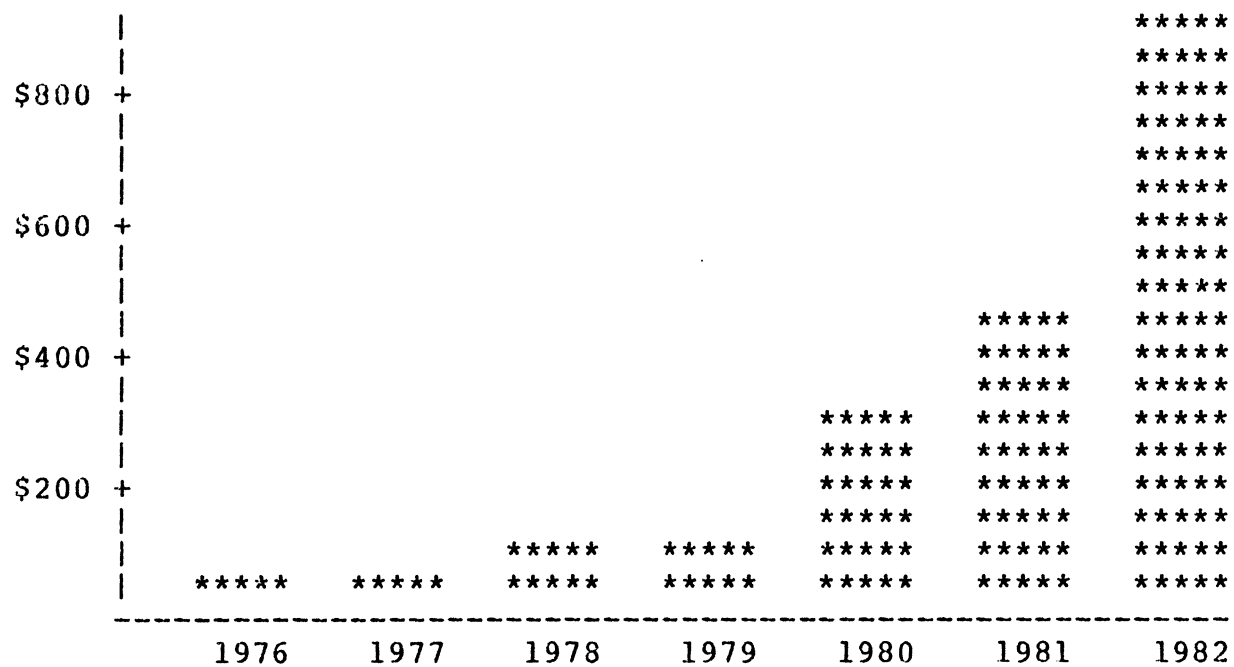


Figure 3. Imports into the United States in Millions of \$,
1976-1982, Textiles and Apparel from the PRC

Source: Official Statistics U.S. Department of Commerce

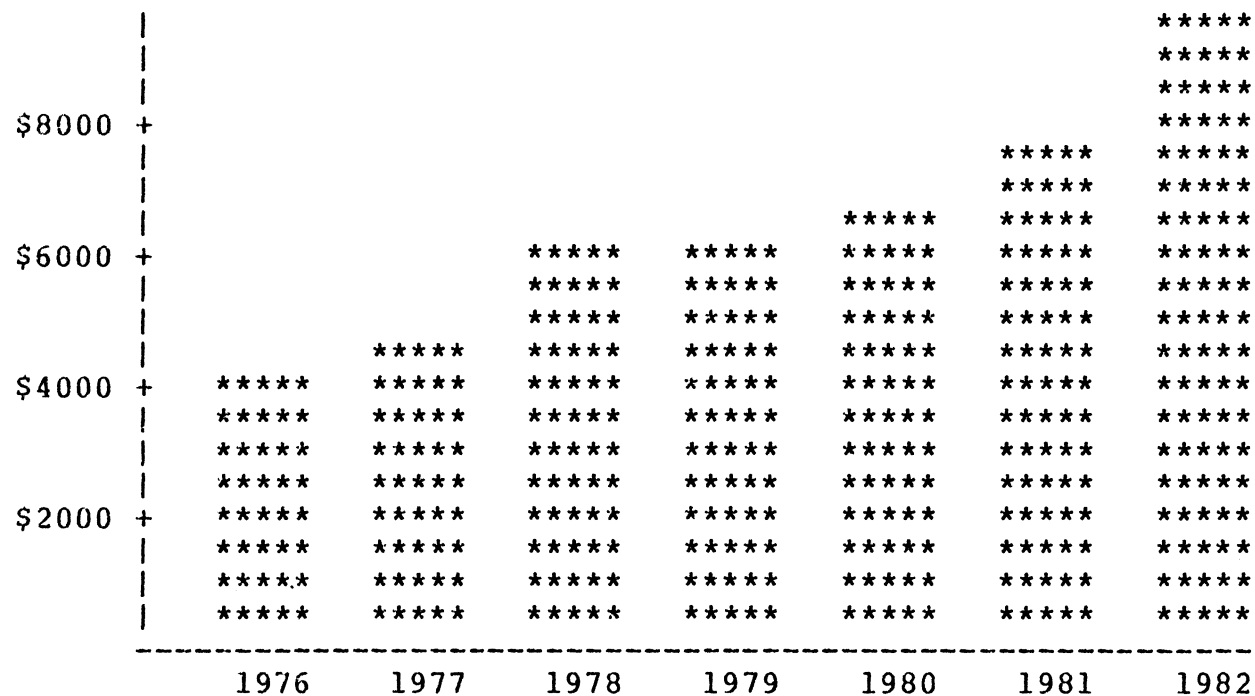


Figure 4. Imports into the United States in Millions of \$,
1976-1982, Textiles and Apparel from the World

Source: Official Statistics U.S. Department of Commerce

Looking at the apparel subsector in isolation is critical in the case of US-PRC trade; these imports of apparel (cotton, wool, and man-made fibers) increased from \$16 million in 1976 to \$590 million in 1982 (3688%) (see Figure 5). This increase is in contrast to a total world increase from \$3.2 billion in 1976 to \$7.1 billion in 1982 (222%) (see Figure 6) (Department of Commerce, 1983; "U.S. Trade with," 1982).

By 1978 US-PRC textile trade had increased so much that negotiations were begun for a bilateral agreement to cover textiles and apparel. The first bilateral trade agreement between the United States and the People's Republic of China was finally signed in December 1980. This bilateral expired in December 1982, and attempts to negotiate a new bilateral during the last half of 1982 were unsuccessful. On January 15, 1983, the United States imposed unilateral quotas* on selected textile and apparel imports from the PRC. These will remain in effect until a new bilateral is negotiated.

Government representatives negotiating with the PRC need as much information as possible to guide them in setting growth levels and flexibility* in critical categories;* however, obtaining this information is a complex task. Two difficulties are immediately evident. Information about the plans and potential of the apparel and textile industries in the PRC is limited. In a planned

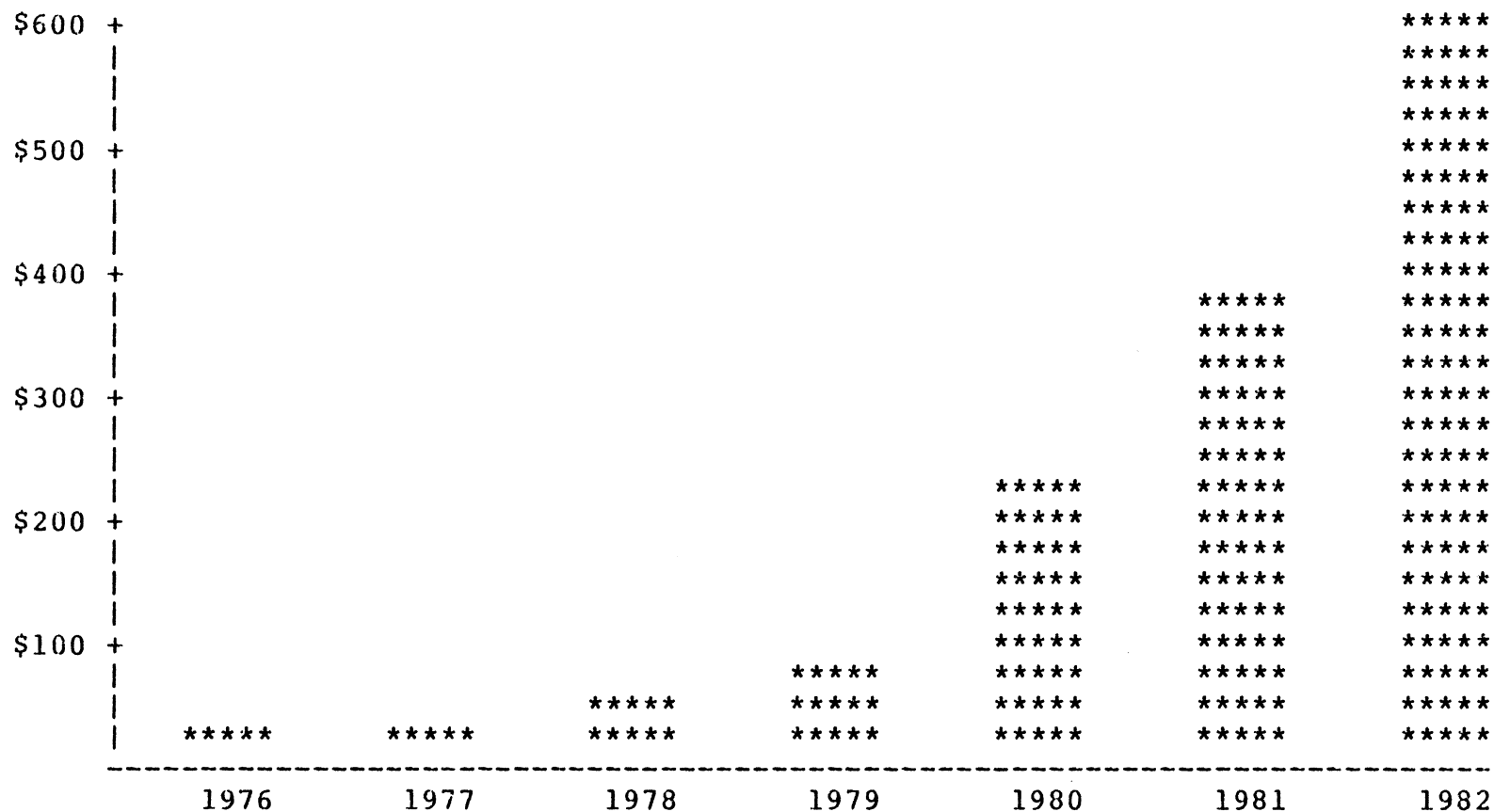


Figure 5. Imports into the United States in Millions of \$, 1976-1982
Apparel from the PRC

Source: Official Statistics U.S. Department of Commerce

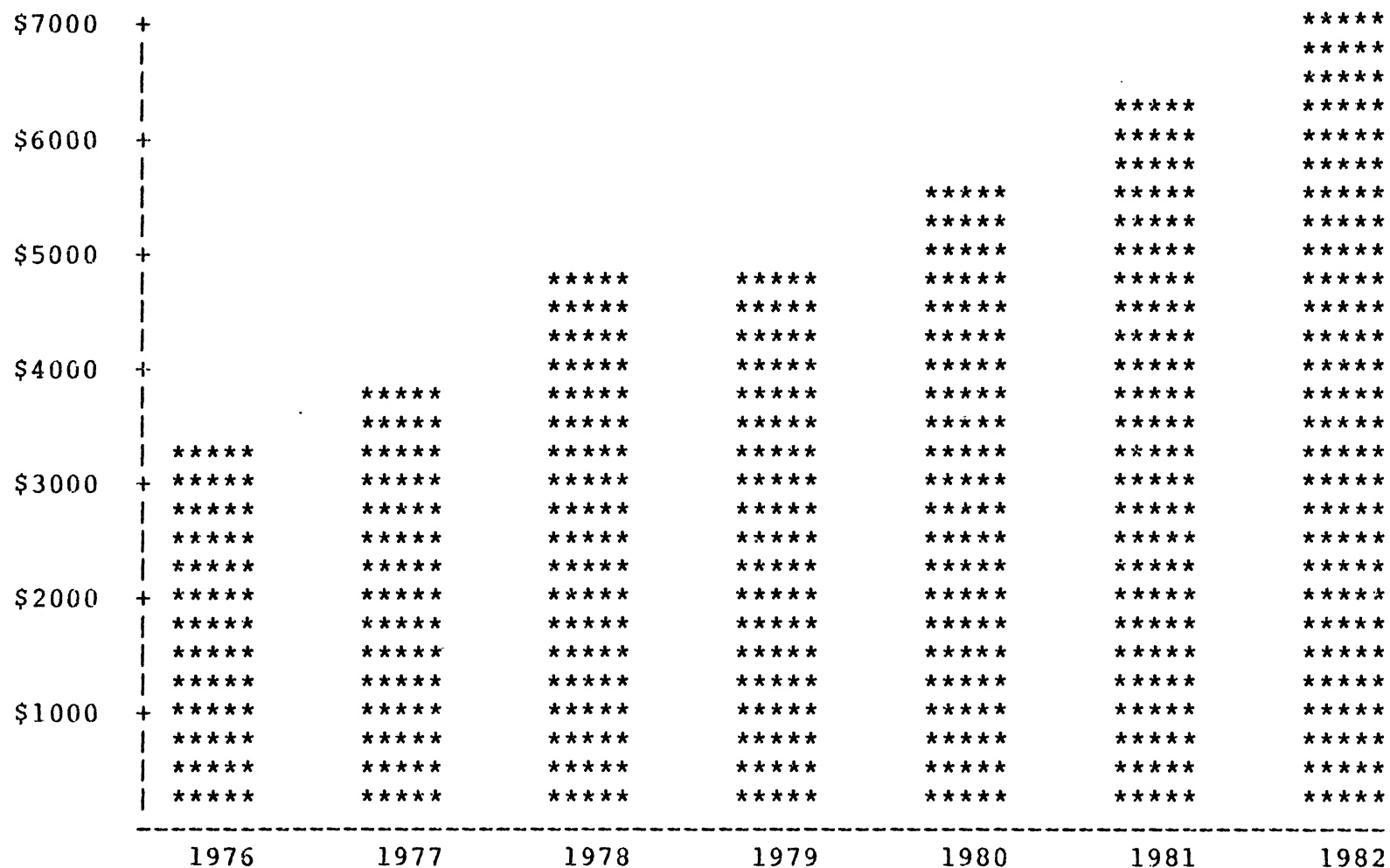


Figure 6. Imports into the United States in Millions of \$, 1976-1982
Apparel from the World

Source: Official Statistics U.S. Department of Commerce

economy like that of the PRC, the government has wide discretion and can invest capital and factors of production at will or whim. Probable responses can only be estimated. Information about domestic production in the U.S. is also difficult to obtain. The U.S. apparel industry is an intensely competitive one; consequently some information is withheld by manufacturers or difficult to validate.

A further complication in the negotiation of a bilateral agreement is the fact that U.S. policies change as often as administrations and sometimes more frequently. Imports are continuously monitored, and consultations on surges* can be requested at any time. Embargoes* can be unilaterally imposed through the U.S. Customs Service. The Department of Commerce and the Census Bureau have the tools in place to limit trade as policy requires. Decisions made on import limits are at least as much a reflection of political concerns as they are of economic ones.

The dramatic increase in textile and apparel production in the PRC and their desire to export to the U.S. have implications far beyond the economic ones; social and political issues are also involved. The PRC has a population of over one billion people willing to work for 16 cents an hour. The U.S. has 2.6 million people employed in the textile and apparel industries at an average hourly wage of \$5.35, whose jobs are potentially threatened by increased

imports (Bureau of Industrial, 1983). In light of the present complex political and economic circumstances, textile and apparel trade with China will be a challenge for at least the remainder of this century.

International Trade Theory

The United States is the key country in world trade. It is the world's leading importing and exporting nation. Its gross national product is 40 percent of the total gross national products of all industrialized countries. International economic policies made in the United States impact all other nations. In contrast, the American economy is impacted to a much lesser degree by the foreign trade actions of other governments. Imports of goods and services to the United States amount to only 10 percent of the nation's GNP. The size of the United States and its diversity of natural, human, and capital resources enable the nation to meet most of its needs and wants without the products of other countries (Kreinin, 1979).

Even though the relative quantity of goods and services imported by the U.S. is small, their availability is critical. Some imported goods cannot be produced domestically but are required for specific production processes. Imported fuel is essential for the productivity and living standard of the nation. As Kreinin explains:

Foreign trade increases economic welfare . . . widens consumer choice through diversification of available products, and expands producers' horizons in marketing their products and investing their capital. Opening the economy to . . . foreign trade competition also adds to its viability by spurring technological progress . . . and foreign imports can also be used to curtail inflationary pressures at home Finally, American imports constitute an important source of dollar earnings for many underdeveloped countries, whose stability is vital to the United States. (1979, p. 4)

In simplest terms, countries trade to obtain the benefits of specialization. Since nations differ in the quantity and quality of their resources, they cannot produce all things equally efficiently. Participating in international trade enables a country to raise its real income by increasing the efficiency of its resource utilization (Krein, 1979).

An original theory explaining which products nations should trade was stated by an English economist, David Ricardo, in the nineteenth century. His principle of comparative advantage followed from the scarcity of resources and the differing resource allocation among nations. Countries will specialize in the production of those things in which they have relative efficiency. Trade among nations which specialize according to their comparative advantages results in benefits for all (Miller, 1973).

Classical and neoclassical theories of international trade such as comparative advantage have provided economists

with a rigorous set of assumptions to enable them to answer a wide variety of questions: what kinds of goods will a nation export and import? what might be the gains from a policy of free trade versus a policy of restrictions on trade? These theories have been used many times as tools of analysis for recommendations on government policy. However, the inability of these traditional theories to describe actual trade patterns has led some economists to exercise caution in using the models for policy recommendations for business or government (Wells, 1972).

The reticence is well stated by Harrod:

It does appear that, in the present phase of static theory, its exponents can no longer derive from it confident recommendations for helping humanity. The first fresh flush of zeal has departed. (1963, p. 1)

The questioning attitude toward traditional theory may date back to 1953. In that year Leontief published a study of U.S. trade in which he demonstrated that U.S. export industries were more labor-intensive than the industries which would replace American imports. His findings contradict the factor proportions theory (often called the Heckscher-Ohlin theory) which states that a country will produce and export those products which utilize its abundant factors; it will conversely import goods which require relatively more of its scarce factors of production. The United States was considered to be well endowed with capital

and poorly endowed with labor, relative to other countries. It should, according to a two-factor version of the factor proportion theory, export goods whose production processes were more capital-intensive and import those whose production processes were more labor-intensive (Wells, 1972).

At least partly in response to Leontief's findings, economists began attempting to modify classical trade theory. Natural resources were added to capital and labor as factors of production. The capital used in the manufacture of a product was recalculated by taking into account the capital embodied in skilled labor (Diab, 1956; Naya, 1967).

None of the attempts to modify the classic theories were completely successful. Trade in manufactured goods could not be adequately explained by minor changes. The major changes destroyed the comfortable universality and the closed logic of the traditional theory and led to the establishment of essentially new theories of trade (Wells, 1972).

One such new theory was that of the product life cycle model of international trade. Some of the assumptions of the product life cycle model go back to the minor changes in the classical assumptions made by economists in response to Leontief's findings. However, the total "model," probably

first described by Vernon in 1966, required major changes. The theory's origins as described by Wells explain its applicability to current problems:

Most of the pioneering work was done at business schools, by people whose allegiance was to practical problem solving rather than to an academic discipline Businessmen had generally ignored the traditional wisdom of trade theory, since they found it of little help in solving the problems they found. Researchers in business schools were interested in developing more useful tools for policy formulation--for the firm and for governments. Although the resultant "product life cycle model" was inelegant, compared to traditional theory, it did turn out to be helpful in explaining certain trade flows in manufactured goods. And this was sufficient for the purposes of business research. (1972, p. 5)

In the product life cycle model a product passes through three stages: introduction, growth, and maturity. During these three stages, the price demand elasticity changes from inelastic to elastic as the product shifts from a novelty status to a standardized one with numerous and virtually identical competitors. With the changing elasticity, price becomes the most significant marketing factor, and the need for lowering prices forces an increased emphasis on lowering costs. As the product approaches maturity, the firm faces several strategic options: lower costs, modify the existing product design, or introduce a new product (Arpan & Folks & Shimp, 1981).

In an international context, the implications of the product life cycle theory are the same, but the strategic options become more complex. In order to expand total

sales, the product in its introductory or growth stage is a good candidate for export. Therefore exporting becomes a viable option, particularly as domestic market growth begins to slow. Midway through the growth stage, as the export-foreign markets reach a certain size, the foreign market becomes large enough to sustain local production facilities, and foreign production begins to displace imports. As the product enters the mature stage and becomes standardized, the intense price competition dictates the relocation of production facilities to even lower cost countries. The comparative advantage in production shifts to countries with lower labor costs because equipment, materials, management, capital, and technology are fairly mobile internationally. In this final stage, lower labor costs become the most critical differentiating factor in production, and ultimately, through lower price, marketing. During this final stage, the innovative countries which originated production and export in the first stage end up being net importers of the product with declining domestic production of that product (Arpan et al., 1981).

This cycle is presented graphically in Figure 7. The graph shows the impact on the foreign trade of the U.S. for a product going through the life cycle. Introduction and production begin in the United States during the first

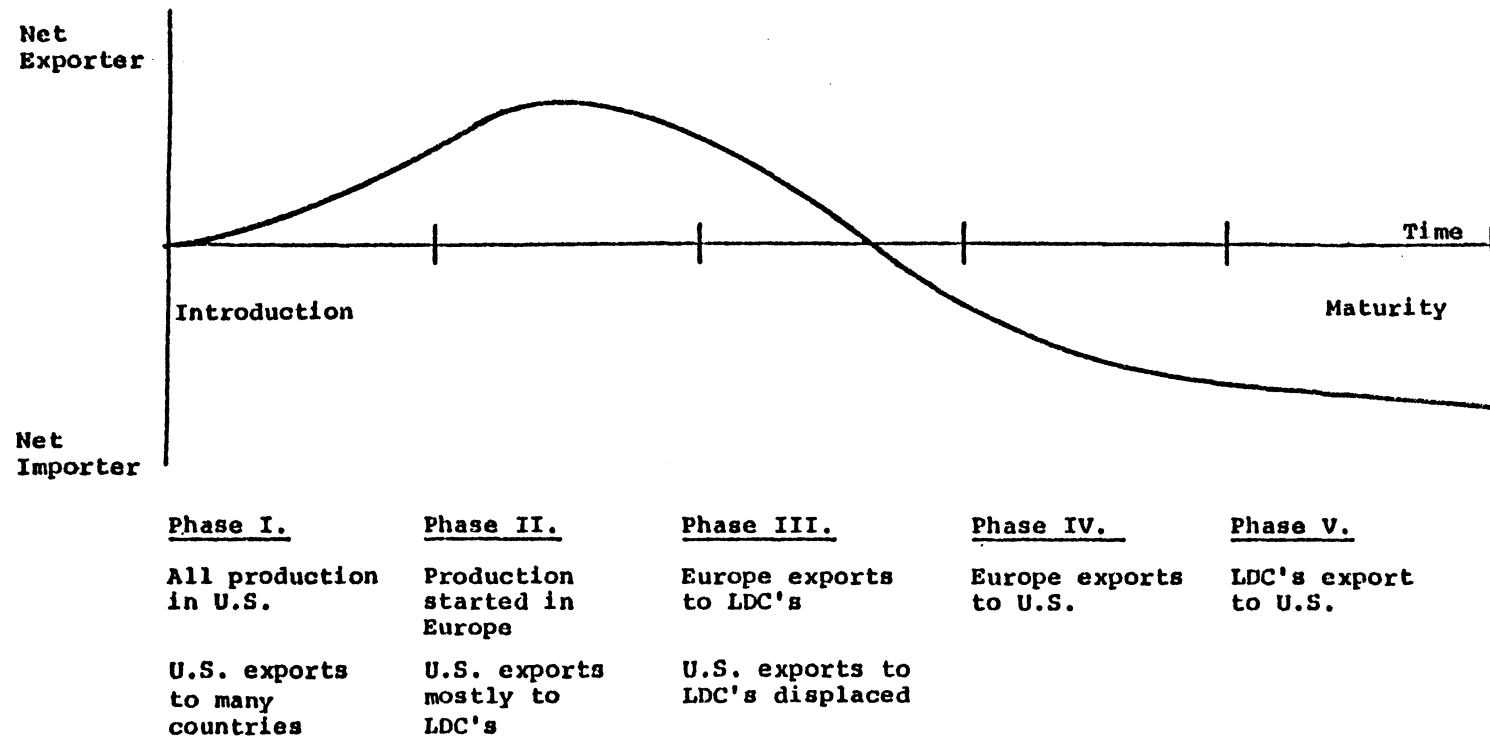


Figure 7. A Schematic Presentation of the U.S. Trade Position in the Product Life Cycle
 (Adapted from The Product Life Cycle and International Trade, L.T. Wells, p. 15.)

phase. Production begins in Europe during the next phase, eventually followed by production in the less developed countries (LDC's).

International Trade in Textiles and Apparel

World trade in textiles and apparel involves all of the developed and most of the developing countries. Textiles and apparel account for about 30 percent of manufactured exports for developing countries (Curzon, Donges, Waelbroeck, de la Torre, MacBean, & Wolf, 1981) and are a chief source of employment and foreign exchange earnings for these countries. The textile and apparel industries represent for most developing countries the first step on the ladder of export-oriented industrialization. Developed countries, on the other hand, require that imports of low cost textiles and apparel be orderly, to assure that their markets are not threatened with disruption.

The United States has the world's largest and most lucrative textile and apparel market, a highly desirable outlet for developing countries' textile and apparel exports. Sharply rising imports from low wage exporting countries have often caused disruption in this market with substantial economic and social consequences.

The history of U.S. trade agreements affecting textile and apparel imports begins in 1930 with the Hawley-Smoot Act. (See Appendix B for a list of textile trade agreements.)

Early agreements on trade in textiles focused on tariff rates and quantitative restrictions for cotton textile imports. Trade acts passed in the 1930's imposed tariffs on a large number of imports of manufactured products in addition to cotton textiles. The resulting discrimination in world trade led exporting and importing countries to meet in Geneva in 1947. Representatives of trading nations negotiated the General Agreement on Tariffs and Trade (GATT)*. This agreement still serves as an international framework which establishes the ground rules for world trade among the signatories (Apparel Trade Primer, 1980). GATT encourages orderly, nondiscriminatory trade. It strives to reduce tariffs and other trade barriers unilaterally across all commodities, while protecting domestic workers from serious import injury (Hager, 1979).

By the mid-1950's cotton textiles from Japan began to be imported into the U.S. in ever increasing amounts. In order to counteract the disruptive effects of imports, Congress granted the President authority to negotiate textile restraint agreements in Section 204 of the Agricultural Act of 1956. In 1957 Japan was the first country to voluntarily agree to limit exports to the United States. Exports from Japan did decline following the agreement, but imports from other countries, including Korea, Taiwan, and Hong Kong increased. The period from

1957 to 1960 saw imports continuing to increase; the product mix became more diversified; and more and more countries became suppliers. The import problem began to shift from textiles to apparel. These factors precipitated the negotiation of the Short Term Cotton Agreement (STA)* in 1961 under the auspices of GATT. The STA provided international rules to control the level of textile imports in cases of market disruption.

In 1962 the STA was superceded by the Long Term Agreement (LTA)*. Thirty-three countries joined the LTA which was extended twice until 1973. In 1962 Congress added the authority to unilaterally restrain disruptive imports from leading textile trading countries not participating in the LTA. This Presidential authority was limited to multilateral arrangements covering textile trade ("U.S. Textile and," 1982).

Under the Long Term Arrangement the United States negotiated bilateral cotton textile and apparel restraint agreements with the governments of 31 leading exporting countries, including Japan, Hong Kong, India, Korea, Taiwan, Mexico, and other countries in the Far East, Western and Eastern Europe, Latin America, and the Middle East.

During the 1960's world trade in man-made fiber textiles and apparel grew sharply. Between 1964 and 1971 U.S. man-made fiber imports roughly doubled every two years

rising in value from \$129 million to \$1551 million. Part of this increase was due to restraints on cotton textile imports that encouraged exporting countries to shift to products not restrained (The History and, 1978). In 1969 the Nixon administration acknowledged this problem and pledged to seek a solution with the major supplying countries. In the same year, several restrictive quota bills were introduced in Congress.

In 1971 the United States successfully negotiated wool and man-made fiber textile and apparel agreements with Japan, Korea, Taiwan, and Hong Kong, the major low wage exporting countries. Despite these successful negotiations, the United States sought negotiation of a multi-fiber multilateral agreement as the solution to the world's textile and apparel trade problems.

In December 1973 representatives of 50 nations meeting under GATT aegis, negotiated the Multi-Fiber Arrangement Regarding International Trade in Textiles to bring a sustained orderly expansion of the world's textile trade. The Arrangement is usually known as the Multi-Fiber Arrangement or the MFA* and became effective January 1, 1974, for a four year period ("U.S. Textile and," 1982).

The objectives of the MFA signed in 1973 are as follows:

To further the economic and social development of developing countries and secure a substantial increase in their export earnings from textile products and to provide scope for a greater share for them in world trade in these products to achieve the expansion of trade, the reduction of barriers to such trade and the progressive liberalization of world trade in textile products, while at the same time ensuring the orderly and equitable development of this trade and avoidance of disruptive effects in individual markets and on individual lines of production on both importing and exporting countries. In the case of those countries having small markets, an exceptionally high level of imports and a correspondingly low level of domestic production, account should be taken of the avoidance of damage to those countries' minimum viable production of textiles. (The History and, 1978, p.12).

In addition the MFA provides standards for determining minimum levels of import restraints, annual growth of imports, and market disruption.

Market disruption is an important concern of the developed countries. Interests of the exporting country are considered as well as the ability of the importing country to compete. Two kinds of market disruption are defined by the MFA. One concerns sharp and substantial increases of particular goods from a specific country. The second type involves a practice referred to as "dumping." This is defined as selling goods in an importing country at prices substantially below those in the exporting country. Market disruption is a difficult issue to determine in many cases

because it is often linked to increased imports when other causes may be responsible such as decreased per capita consumption of textiles and apparel, technical innovations, or change in consumer tastes.

A unique feature of the MFA has been the establishment in Geneva, of a Textile Surveillance Body (TSB)* whose members supervise the Arrangement and examine the justification for actions taken under it. Either party in a textile trade dispute may refer an issue to the TSB for consideration. The TSB makes recommendations to the countries involved in the dispute. The United States, the European Community, and Japan are permanent members of the TSB. Other members are chosen for annual terms by other MFA participants. The United States has a permanent delegate to the TSB with the rank of Minister-Counselor.

A larger committee involved in implementing the MFA is the GATT Textiles Committee. All MFA signatories are members of this Committee (Appendix C). This group annually reviews operations of the Arrangement and deals with matters referred to it by the TSB.

The MFA was first renewed in 1977 for four years, through December 31, 1981. The basic agreement was unchanged but a protocol was added which allowed for reasonable departures from specific elements in special cases from some provisions of the Arrangement.

A protocol extending this MFA was signed in Geneva on December 22, 1981, after almost six months of intensive debate. The current protocol, which became effective on January 1, 1982, will extend for another four years and seven months until July 31, 1986.

This protocol represents a strengthened MFA. Pressure to strengthen the MFA came from importing countries suffering from depressed and declining domestic markets. The new MFA is not as strong as the EEC^{*} (European Economic Community) wanted, but stronger than the U.S. sought. The EEC, specifically Great Britain and France, sought drastic rollbacks and surge controls. They agreed to sign the renewal only after exchanging letters regarding bilateral arrangements with Hong Kong, Korea, and Macao. The EEC has threatened to pull out of the MFA later this year if satisfactory agreements cannot be concluded with these three trading partners. Besides the EEC and the U.S., other major importing countries include Japan, Canada, Switzerland, and the Nordics.

The recently signed protocol meets all of the U.S. goals. The United States sought to encourage and support the new exporting countries who must have foreign exchange to begin the process of development, while restraining the more established exporters who have already become industrial nations. The American negotiators also wanted to

reduce large quotas from large suppliers; to cut back the growth of imports (to less than six percent) and reduce flexibility--swing*, carryforward*, and carryover*.

President Reagan's administration supports a positive growth rate and did not seek rollbacks, which are in effect negative growth rates. The position of the United States is that it is unconscionable to impose rollbacks on LDC's when investment and employment are already in place as a fragile industrial base. Reductions in growth and flexibility are important because in terms of volume, the growth and flexibility of the big three, Taiwan, Hong Kong, and Korea, are greater than the total volume of imports from the fourth largest supplier, China.

Now that the MFA has been signed, the U.S. challenge will be to negotiate bilateral agreements that are acceptable to Congress and the industry. The tools required to negotiate are in place. The unanswered question is whether the administration will use the tools. American industry would have preferred an even stronger MFA. However, there is reasonable satisfaction with the agreement that was signed. It contains surge controls, and provisions for eliminating flexibility and imposing rollbacks. The latter two provisions are not currently supported by the U.S. government.

As provided for under the MFA the United States has negotiated bilateral restraint agreements with 25 countries (Appendix D). The U.S. also has bilateral agreements with eight MFA non-signatories. These agreements covered 89 percent of U.S. textile and apparel imports in the year ending December 1981 ("U.S. Textile and," 1982). Some agreements set an aggregate ceiling* on total textile and apparel exports, or on total cotton, wool, or man-made fiber textile and apparel exports. Other ceilings may be set for groups of products, or specific categories of sensitive products. Limits are usually set in square yard equivalents (SYE)*, although some items are limited by units (dozens or pounds). Each U.S. textile agreement provides for trade growth, assured market access, flexibility to adjust restraint levels in response to market changes, and consultations to resolve questions which may arise. In addition, each agreement contains an equity clause assuring the bilateral partner that its exports will not be restrained to the benefit of imports from countries with which the United States does not have a textile agreement.

In order to administer the textile program in the United States two interagency committees were established. The Committee for the Implementation of Textile Agreements (CITA)* was established by Presidential Executive Order on March 3, 1972. Its functions are to supervise the

implementation of textile bilateral agreements and to propose and implement import restraints. This Committee is comprised of members from Commerce, State, Labor, and Treasury Departments. The Chief Textile Negotiator of the U.S. Trade Representative's Office is a non-voting member of the Committee. The Commerce Department has the main responsibility for this Committee. CITA is chaired by the Commerce Department's Deputy Assistant Secretary for Textiles and Apparel. The Commerce Department provides all staff work for the the Committee, monitors all agreements and provides the statistical data upon which Committee actions are taken.

The Textile Trade Policy Group was set up by President Ford on June 5, 1975. It is chaired by the United States Trade Representative*. Members include the Under Secretaries of Agriculture, Commerce, Labor, State, and Treasury. The Textile Trade Policy Group advises on general matters concerning international textile trade policy, establishes procedures and policy guidance under which the Committee for the Implementation of Textile Agreements (CITA) takes unilateral action under the MFA. It also develops policy proposals with respect to the negotiation of bilateral and multilateral textile trade agreements, and authorizes and provides for such negotiations.

The People's Republic of China is a newcomer to this formal process of controlled access to international markets. China's interaction with the largest single component of the world market, the United States, is still being negotiated. This sets the stage for trade between the world's most populous nation and the world's richest nation, in a fundamental need of mankind, textiles and apparel.

The international trade of textiles and apparel between the United States and the People's Republic of China was the focus of this research. It had three objectives. The first objective was to establish a framework in which to understand the present concern over increasing levels of textile and apparel imports from the PRC. The textile and apparel industrial sectors in the PRC were investigated and described, as well as the PRC's pattern of importation and exportation of textile and apparel products worldwide. Finally, the development of textile and apparel trade between the U.S. and the PRC was traced.

The second objective of this research was to investigate the role of price in relation to import market share. An analysis of the market share of consumption was the goal of the final objective.

Chapter II

STATEMENT OF THE RESEARCH PROBLEM

Balancing the interests of two nations as diverse as the United States and the People's Republic of China is a formidable challenge. Equity is sought by both governments, but the complexities of cultures, politics, and national interests make equity difficult to define, much less obtain. The Reagan administration has stated the following position:

It is in the national interest to foster a strong, secure, and friendly China, capable of deterring potential aggressors and contributing to peace and stability, and to participate in China's economic development for the benefit of China and the United States. The administration recognizes the need for a clear trade policy that will lend certainty and predictability to American business in trading with China, while ensuring our national security, promoting U.S. foreign policy and protecting U.S. commercial interests. (Federal Register, 1981, p. 62836)

In light of the current international environment, that goal seems difficult to achieve. Specifics of the policy may not yet be stated, but the challenge is clear. How can two governments balance the needs of multiple productive sectors in order to achieve the maximum utility for their citizens while contributing to mutual economic growth and political stability?

The Product Life Cycle Theory

The classical free trade model and the law of comparative advantage proposed by David Ricardo in the early 19th century was based on a static model. In the real world, however, dynamic, not stationary conditions exist; change is the rule, with static conditions the exception. Factors of production are internationally mobile, and technological leadership vacillates in deference to the underlying assumptions of the classical free trade model. These fluctuations and shifts in the relative strength of factor endowment have been explained by recent international trade theories including the product life cycle theory (Hoy & Shaw, 1981).

The product life cycle explanations of international trade are based on assumptions which differ considerably from those of traditional trade theory. Traditional theory is based on the free availability of information and stable production functions. In contrast, the product life cycle models are based on assumptions that the flow of information across national borders is limited and that products undergo predictable changes in their production and marketing characteristics over time. The absence of a free flow of information across national boundaries suggests three conclusions: 1) innovation of new products and processes is more likely to take place near a market where there is a

strong demand than in a country with little demand; 2) an entrepreneur is inclined to risk capital for the production of the new product if demand is more likely to exist in the home market than in a foreign market; and 3) a producer located near a market has a lower cost in transferring market knowledge into product design changes than one located far from the market.

The product life cycle theory also assumes that economies of scale* characterize the production process and that the production process changes over time. The model is also based on the assumption that tastes differ in different countries (Wells, 1972).

The product life cycle theory describes a dynamic, changing process. Multiple changes occur in demand and production processes as a product ages. In the introductory stage of a new product, standards for comparing performance of various versions do not exist. Numerous variations of a product are available. Buyers are unable to compare prices of different versions directly. The price elasticity of demand facing a single producer is not as great as in later stages when the buyer may turn to a competitor's product which is less expensive than that of another firm. Standardization will take place after consumers' desires become well known through exploration of alternative product forms. As soon as the consumer is able to compare prices

from several different sources, the initial firm may be faced with an increasingly elastic demand curve.

In the introductory stage frequent design improvements occur. These changes lead to short production runs which require a greater input of labor, relative to capital, than will be needed later when specialized machinery and techniques can be used for mass assembly of a more stable product line. In this stage, when the production process is more labor intensive than later in the product's life, manufacture requires a greater input of skilled labor. Special skills are needed for constructing pilot models, making changes in design, and manufacturing tools and dies (Wells, 1972).

During the initial phase of the product life cycle, U.S. exports of the product begin. Prices begin to fall, resulting in an increase in U.S. exports as lower income consumers abroad begin to buy the older product. At some point when the overseas market is large enough, the next phase of manufacture abroad begins. Either a local entrepreneur begins to manufacture in an effort to undersell imports, or an American firm may make a direct investment to preclude a local firm from taking the market. Wells (1972) explains the timing of phase two:

The length of time until foreign production begins is dependent on the economies of scale, tariffs, transportation cost, the income elasticity of demand for the product, and the income level and size of the foreign market. The time is shorter where economies of scale are reached at low volumes, tariffs and transportation costs are high, income elasticity of demand is low, and the income level and size of the foreign market are large. (p. 13)

During the second phase American exports to foreign markets may cease to grow as rapidly as before; they may start to decline. Some U. S. exports, however, continue to go to markets where production has not begun.

During phase three of the product life cycle, U.S. exports to nonproducing countries begin to be displaced by exports from other nations. Major markets overseas reach sufficient size so that manufacturers are able to realize economies of scale. The capital costs for such firms may be comparable to those for U.S. firms. The new producers have the same transportation and tariff charges but lower labor costs. As a result, these firms are able to usurp markets in less developed countries that were previously supplied by the United States.

The new producers in phase three are referred to as "middle countries." In many instances these are European countries. Wells explains their role in the the product life cycle model:

These countries typically export products that are in earlier stages of the product life cycle to countries which are less developed and products which are later in the cycle to more advanced countries. In the case of exports down the ladder of development, the advantage of the middle countries lies in economies of scale and technology which are associated with their higher incomes. In exporting up the ladder, they are taking advantage of their cheaper labor. (1972, p. 14)

The United States becomes a net importer of the product during the fourth phase of the product life cycle. This occurs because the foreign producer is now producing for a sufficiently large market to lower costs and overcome the transportation and tariff protection of the U.S. manufacturer.

During the final phase less developed countries become exporters of mature products. The flow of standardized textile products from the LDCs into the U.S. is an example of this phase. Standardized textile products, such as yarn, thread, and raw cotton cloth are produced cheaply in low-wage countries. These products are characterized by low product differentiation and offer export potential to LDCs because marketing skills and knowledge are relatively scarce resources in developing countries. Products characterized by a low degree of product differentiation require less skills and knowledge in the export effort than is the case for those with high product differentiation (de la Torre, 1972).

The important elements of the product life cycle can be summarized in the following tabular form.

CYCLE PHASE

	<u>Early</u>	<u>Growth</u>	<u>Mature</u>
Demand Structure	Low price elasticity for aggregate demand and for individual firm. Nature of demand not well understood by firm.	Growing price elasticity for firm. Price competition begins.	Basis of competition is price or product differentiation through marketing techniques.
Production	Short runs, rapidly changing techniques dependent on skilled labor. Low capital intensity.	Mass production methods.	Long runs with stable techniques. Labor skills unimportant. Capital intensive.
Industry Structure	Small number of firms.	Large number of firms, but many casualties and mergers.	Number of firms declining.

(Hirsh, 1972, p. 40)

To further refine the product life cycle theory Wells (1972) sought to explain the fact that the United States simultaneously exports and imports items in the same product category. Some apparently distinct products are actually different models of one product category as in the case of differing types of apparel. According to the product life cycle model of international trade, a country would have a comparative cost advantage in a particular model of a product for which home demand is strong relative to that in

other countries. Wells demonstrated that the United States has, relatively, the largest market for the "luxury" models of certain consumer durables, Germany has the largest market for the middle range, and Japan for the least expensive versions. As predicted by the theory, the United States had a comparative advantage in producing the luxury versions, Germany in the middle range, and Japan in the simple models. America was importing simple versions of consumer durables while simultaneously exporting luxury versions consistent with the product life cycle model.

The product life cycle theory is still evolving. The current models are not yet fully satisfying for the theoretical economist. Numerous parts of the models have not been stated rigorously. Many have not been thoroughly tested. However, attempts to define the model more sharply are under way. In the interim, the model has proven to be useful in attempting to explain the flow of goods in international trade (Wells, 1972).

Objectives

The formulation of U.S. trade policy is a complex task. There are many variables, both tangible and intangible, which must be considered. Sound economic analyses of available data should be an important input to be considered in addition to political factors. Existing trade data was

examined in this research in order to present a thorough analysis of specific aspects of textile and apparel trade between the United States and the People's Republic of China during the past six years. The researcher hopes that government officials will use the results of this study along with inputs from labor unions and industry management in formulating the U.S. position on Chinese trade.

This dissertation had three objectives. The first objective was to establish a framework for understanding the present concern over increasing levels of textile and apparel imports from the People's Republic of China. The initial step in this process was to describe the existing textile and apparel industrial sectors in the PRC. Factors investigated include: size, location, capital equipment, labor employed, products, government attitudes toward, government plans for, and place in the total economy. Then current patterns of the PRC's importation and exportation of textile and apparel products worldwide were described. The third part of the background segment focused on the growth of the PRC's trade with the United States. Exports from the United States to the PRC were discussed, but the emphasis was on describing the growth of textile and apparel imports to the U.S. from China. The increase by fiber content, that is, total imports of cotton, wool, and man-made fiber textile and apparel products was traced from 1975 to 1981.

The second objective of this research was to investigate the role of price in relation to market share. The import market was the focus of this objective due to the lack of data for values of U.S. production for specific categories. The goal was to determine if price was a major factor in changes observed in the import market shares of countries in the 21 categories in which the PRC is actively importing.

The market share of consumption rather than market share of imports was examined in the final objective. The goal of this objective was to determine the effect of the growth in imported textile and apparel products from the PRC on the market shares of 1) U.S. manufacturers, 2) the People's Republic of China, and 3) all other importing countries.

Different methodologies were required for the three objectives in this study. Each objective is handled in its entirety in the following three chapters.

Assumptions

1. It was assumed that sufficient data could be located or extrapolated to meet the objectives.
2. It was assumed that current governmental policy towards import growth of textiles and apparel would continue. This policy relates increase in imports to growth in the domestic market.
3. It was assumed that the cooperation of key individuals in government could be obtained and that the information provided by these individuals would accurately reflect current conditions.

Limitations

1. The People's Republic of China is a neophyte in foreign trade and therefore may not react to changes in the international environment as would a traditional trading country.
2. Obtaining accurate information about the PRC is difficult due to its political ideology.
3. The reliability and validity of international data may vary depending on an individual country's philosophy, language, and communications technology. International data bases may reflect different currencies and quantity measures; therefore comparisons may require interpolation and interpretation.

Chapter III

OBJECTIVE ONE

The first objective of this dissertation was to establish a framework for understanding the present concern over increasing levels of textile and apparel imports from the People's Republic of China. The initial step in this process was to describe the existing textile and apparel industrial sectors in the PRC. Factors investigated include: size, location, capital equipment, labor employed, products, government attitudes toward, government plans for, and place in the total economy.

Completing this step involved a process similar to that utilized in historical research. Information was gathered from many sources, and a description of the current status of the industry was written. Sources searched include recently published books, current periodicals and journals, government reports and documents, and a number of data bases which contain information about resources and production in the PRC. The goal was to collect various pieces of the puzzle and then describe the most likely picture.

The second part of this objective was a description of PRC's importation and exportation of textile and apparel products worldwide. The purpose of this segment was to set the US-PRC trade within the context of PRC's textile and

apparel trade with other countries. Variables considered include length of trading relationship, products traded, and volume and value of textile and apparel trade.

The third part of the background segment focused on the growth of the PRC's trade with the United States. Exports from the United States to the PRC were discussed, but the emphasis was on describing the growth of textile and apparel imports to the U.S. from China. The increase by fiber content, that is, total imports of cotton, wool, and man-made fiber textile and apparel products was traced from 1975 to the present.

China's Textile and Apparel Industries

China's modern textile industry began in 1890 when the first mill was erected in Shanghai. This mill, the Shanghai Machine-Woven Cloth Bureau, was a joint government-private venture. New businesses by private Chinese entrepreneurs followed the establishment of the Shanghai mill. In 1895 foreign companies were authorized to operate factories in open-port territories, and construction of textile plants began by British, American, and German companies. Japanese textile concerns followed in 1911 with Naigai Wata Kaisha, Ltd. (Uno, 1982).

Immediately before World War I, in 1913, cotton spinning machines equivalent to 960,000 spindles had been

installed; 62 percent were owned by Chinese capital and the remaining 38 percent by foreign capital. The number of spinning machines grew rapidly, reaching 5.1 million spindles in 1936, Chinese capital accounting for 54 percent and foreign capital for 46 percent (Uno, 1982).

The years from 1915 to 1937 were characterized by the rapid establishment of many mills. The accelerated development of the textile industry during the first part of this period was due primarily to the outbreak of World War I. It was also during this stage of rapid expansion that American textile machinery first appeared in the Chinese market. During the latter half of this period Japanese mills began to be built in and around Shanghai, taking advantage of the Extra-territoriality Treaty then in existence. A total of 33 cotton mills belonging to 17 Japanese firms were established in Shanghai during this time (Liang, 1972).

The period from 1938 to 1948 was one of continuous turmoil, beginning with the Sino-Japanese War in mid-1937 and continuing on through the end of World War II. The post-war era from 1946 to 1948 was even worse, as internal fighting disrupted the operation of the textile industry.

In 1949 when the People's Republic of China was founded, there were cotton spinning machines equivalent to five million spindles and 127,000 looms, in addition to wool

spinning machines equivalent to 130,000 spindles. In the 32 years between 1949 and 1981, the installation of cotton spinning machines rose to 18 million spindles, cotton weaving machines to 540,000 looms, and wool spinning machines to 700,000 spindles. Annual production of cotton yarn rose from 330,000 tons in 1949 to 3.17 million tons in 1981. Production of cotton cloth increased from 1.9 billion meters to 14.3 billion meters per year. The volume of annual production of man-made fibers, which did not exist in 1949, reached 140,000 tons for rayon and 390,000 tons for synthetic fibers, for a total of 530,000 tons in 1981 (State Statistical Bureau, 1982; Uno, 1982).

Although considerable growth has occurred since 1949, expansion actually began in a significant way in 1977, following the 'purge of the Gang of Four, and especially after 1979, when economic readjustment began. The course of development before 1977 was erratic. Periods of gradual growth were followed by cycles of negative growth and years of stagnation. In 1976, annual production of cotton yarn stood at 2.1 million tons and man-made fibers at 180,000 tons (State Statistical Bureau, 1982).

There were three major reasons why China's textile industry failed to sustain growth during this period. The first was the natural disasters that occurred in China between 1959 and 1962. The second reason was political and

social unrest beginning in the early 1960's. From this time until the expulsion of the Gang of Four in 1976, there was continual political confrontation between Mao Zedong and his followers and opposing political forces. Typified by the Cultural Revolution that took place in 1966, this antagonism brought about tremendous social unrest which impeded stable growth of the textile industry (Uno, 1982).

The third reason for the lack of sustained growth by the textile complex was related to China's industrial policy. Until the late 1970's, priority for development had been given to heavy industry. The real growth for heavy industrial production by value from 1950 to 1979 grew at an average annual rate of 16.5 percent. The growth for light industrial production, centered on the spinning and weaving industry, was only 11 percent. As a result, the textile industry's share in total industrial production sank gradually from 35.5 percent in 1949 to 20.4 percent in 1957, 15.8 percent in 1965, and 10.6 percent in 1976 (Uno, 1982).

In 1979 the Chinese government announced an important economic policy shift. Editorials in the People's Daily underscored the importance of the textile industry in the PRC's economy and foreign trade, and identified the industry as one favored in the current economic reassessment. A government official stated that in view of China's current under-development and shortage of investment capital, this

large and profitable industry should be accorded high priority. Editorials also announced important economic reforms, such as direct retailing by factories and price competition. These reforms were designed to meet local demands for more economic autonomy and to provide an impetus to increased exports. One editorial exhorted the industry to improve performance in such areas as styling, marketing, innovation, exporting, and technical modernization. It stated emphatically that government policy required localities to give first priority to the textile industry's needs for raw materials and power, especially electricity (Amembassy Beijing, 1979).

This economic policy shift, from heavy industry to agriculture and light industry, held pivotal significance for China's textile industry. Six imperatives were established in an effort to support the textile industry: priority to the supply of raw materials, fuel, and electric power; priority to development of potential capacity, reform, and reconstruction; priority to capital construction; priority to bank loans; priority to the introduction of foreign investment and new technologies; and priority to transportation (Uno, 1982).

Since 1979 the activity of China's textile industry has visibly accelerated. The rate of growth in textile production in the 1980's increased to 23 percent from 16

percent in the 1977 to 1979 period. The textile (excluding the apparel sector) industry's share in total industrial production made a remarkable comeback to 14.7 percent in 1980 from a low of 10.6 percent in 1976. To augment domestic production, large quantities of textile materials and finished products were imported in an effort to meet the nation's growing apparel demands (State Statistical Bureau, 1982).

The textile and apparel industries benefit from an important national asset, the size of the available labor force. A wide variation in statistical sources make actual employment figures difficult to determine, but estimates for the textile industry range from three million (Seidel, 1981) to five million (Uno, 1982), and for the apparel sector from 800,000 (Uno, 1982) to 20 million (Belluomo, 1982). In addition, approximately 200 million Chinese are involved in cotton production (Probable Economic Effect, 1981).

Until recently nearly all textile mills operated six days a week in three shifts. A new work cycle has been instituted in much of the industry under which employees work for six days and are off for two consecutive days. Advantages of this system include the creation of additional jobs, more time off for workers to handle family responsibilities or to take part-time training, and increased capital productivity by using equipment seven days

a week. This system, which operates using four groups of workers, is expected to become even more widespread (Emerging Textile-Exporting, 1982).

Many textile and apparel workers in the PRC are women. The average percent of women employed in all industrial sectors in China is 48 percent. With the exception of printing and dyeing of textiles (35 percent women), the percent of women employed in this sector is considerably higher than the industrial average. The highest average is for embroidering (96 percent); but in four other manufacturing processes over 75 percent of the employees are women: cotton ginning (85 percent), textile production (87 percent), silk reeling (94 percent), and apparel production (78 percent) (State Statistical Bureau, 1982).

Exclusive of benefits, wages for the Chinese textile worker ranged from \$49 to \$79 per month in 1979, with an average wage of \$64. Wages vary among plants because of differences in the type of commodity produced, average age of the work force, and the number of unskilled workers and trainees employed. This compares to an average of \$920 a month for a U.S. employee. A comparable worker in Japan earns \$664 a month; in Hong Kong, \$211 (Emerging Textile-Exporting, 1982; Probable Economic Effect, 1981).

In 1981 Seidel identified the textile industry as the most important industrial sector in the PRC. According to

PRC government statistics, 23,100 apparel enterprises and 17,100 textile plants accounted for almost 20 percent of total industrial output value in 1981 (State Statistical Bureau, 1982). In 1980, taxes and profits from the industry were thought to have accounted for over 10 percent of the national revenue. Textile and apparel exports are an important source of foreign currency. These manufactures amounted to over 28 percent of the total Chinese exports in 1981 ("Chinese Textile Industry," 1982). Domestically textile and apparel products account for 25 percent of total retail sales of all commodities ("National Pace-setter," 1981). Even with the variation and uncertainty implicit in these statistics, the importance of the textile and apparel sectors in the Chinese economy is clear.

Cotton Production

Cotton production is the most advanced and important sector of the textile industry in China. Cotton represents nearly 90 percent of China's total fiber consumption (over 15 million bales in 1980) (Emerging Textile-Exporting, 1982). Production of Chinese raw cotton increased rapidly between 1980 and 1981, and reached 2.97 million tons in 1981. This production is second only to the United States and is comparable to that of the Soviet Union. To supplement the large quantities of raw cotton produced

domestically, China imports additional raw cotton. These imports rose from 130,000 tons in 1976 to 870,000 tons in 1979. Cotton imports decreased in 1980 to 740,000 tons, and were even less in 1981 primarily due to increased domestic production (Uno, 1982; 31st Quarterly Report, 1982).

China has the largest number of cotton-system spindles on 100 percent cotton in the world. China's cotton-type spinning and weaving plants have over 18 million spindles and 540,000 looms. This places China's industry second only to India in terms of spinning machines and first in the world in terms of weaving machines (Emerging Textile-Exporting, 1982; Uno, 1982).

Weaving and finishing plants are most often integrated with or located near the spinning mills. These facilities were originally concentrated in large cities along the coast, such as Shanghai and Tianjin; but since 1949 the policy has been to distribute them throughout the country taking the distances from the producing regions into consideration (Uno, 1982).

Since the late 1960's, considerable modernization of the weaving segment has taken place. Some mills have converted from shuttle looms to high-speed shuttleless looms, and experimental work is being done in areas of advanced technology. The bulk of the industry, however, is likely to continue traditional ring spinning of yarn,

accompanied by renovation or improvement of shuttle looms. Although the production rate of shuttleless looms may be 30 to 50 percent higher than shuttle looms, many fabrics may still be produced most economically on improved automatic shuttle looms if investment, labor costs, and product quality are all considered (Emerging Textile-Exporting, 1982).

Production of cotton yarn in 1981 was 3.17 million tons and that of cotton cloth 14.27 billion meters, both figures the world's highest. These figures include blended fabrics; specifically, 3.2 billion meters of cotton-polyester cloth is included in the figure for cotton cloth. China is also the world's leading exporter of cotton cloth. In 1979, 1.11 billion meters of cotton cloth and 220 million meters of cotton-polyester cloth were exported (Chen, 1982; Uno, 1982).

Synthetic Fiber Production

The construction of an experimental plant in Beijing in 1957 marked the beginning of China's synthetic fiber industry. This plant was constructed with technical assistance from East Germany. Full scale production actually started almost 10 years later with the introduction of technology from Japan, Great Britain, and West Germany. Production of vinal, acrylic, and nylon began at the

10,000 ton-per-year level. By 1977 capacity was only a little more than 60,000 tons per year. Polyester was introduced in 1977 when a 25,000 ton-per-year capacity plant was built in Shanghai with Japanese technology (Uno, 1982).

Government economic policy shifted in 1979, and construction of synthetic fiber plants was promoted at an accelerated pace, concentrating on integrated production with petrochemicals, using technology introduced from abroad. In 1980, 80 percent of the increase in state investment in the textile sector was used to finance the construction of chemical fiber plants. "The 1980 investment plan for the textile industry called for the construction of 34 new mills--21 chemical fiber plants, 8 cotton mills, 4 woolen mills, and 1 ramie mill" (Chen, 1982, p. 9).

Since the emphasis was shifted to light industrial production, output of chemical fibers has grown rapidly, rising from 189,000 tons in 1977 to 285,000 tons in 1978, to 326,000 tons in 1979, and to 450,000 tons in 1980 as new plants were completed and existing facilities expanded. Output increased 16 percent from 1980 to 1981; production was 524,000 tons (Chen, 1982).

Estimates of current existing capacity range from 590,000 tons (Uno, 1982) to 820,000 tons per year ("Chinese Textile Industry," 1982). Production is remarkably efficient since 90 percent of the total synthetic fiber

capacity has been built since 1978. Based on the lower figure, by category of fiber, 127,000 tons of vinylon can be produced per year, 96,000 tons of nylon, 292,000 tons of polyester, and 76,000 tons of acrylic.

Polyester has been given the highest priority and accounts for nearly half of the total capacity. Synthetic fiber plants now under construction or in the planning stage will add 380,000 tons annually to China's capacity; 330,000 tons of this will be polyester production. In 1985 when current and planned construction is complete, total synthetic fiber production capacity will reach 970,000 tons per year. Only the United States and Japan currently have greater productive capacity ("Chinese Textile Industry," 1982; Uno, 1982).

Wool Production

The wool segment of China's textile industry, centered around Shanghai, Beijing, and Tianjin, is small and specialized. Raw wool imported from Australia and New Zealand is used in better quality fabrics for the export market, and native wool in carpet yarns, fabric for domestic consumption, and knitting yarns (Qi, 1979). Woolen piece goods produced by an estimated 700,000 spindles, totaled 111.1 million yards in 1981 ("China's Textile Industry," 1981; Uno, 1982).

China has recently been making efforts to expand its wool industry; although the scale of the industry is small, the rate of growth is great. The government's goal is to double its spinning capacity by 1985. Efforts are being made at this time to improve quality and to upgrade and introduce new equipment. Increased production of animal hairs is also a priority. China, already the world's largest producer of animal hairs such as cashmere and angora, recognizes the potential export earnings from these highly desirable commodities (Uno, 1982).

Silk Production

As early as 4,000 years ago the Chinese were weaving and wearing silk. By 200 B.C., silk was exported to Central Asia and Europe. China's modern silk industry was well developed by 1930 with an annual cocoon output of over 200,000 tons. The industry underwent a rapid decline for 20 years, but since 1949, the silk industry has been rejuvenated and production has increased 16-fold. In 1980 production of silk totaled 38,900 tons and 835 million yards of silk textiles ("China's Textile Industry," 1981; Emerging Textile-Exporting, 1982).

The silk filatures are located primarily on the silk-producing Changjiang and Zhujiang deltas and the Sichuan basin. The Taihu basin is PRC's largest silk and

satin producing area. Dandong and Fengcheng on the Liaodong Peninsula and Qingdao, Yantai, and Zhoucun on the Shandong Peninsula are China's tussah silk centers (Qi, 1979).

The Future of the Textile and Apparel Industries
in the People's Republic of China

The key to understanding the future of China's textile and apparel industries lies in their very great potential for promoting the country's economic growth. These sectors will play an important role in meeting China's short-range economic goals. "Increasing agricultural and light industrial production, and improving the standard of living will remain the major focuses of economic restructuring and reform" (Lee, 1982, p. 44).

The Chinese are searching creatively for ways to provide more consumer goods and strengthen their textile industry. Joint ventures have been undertaken with Japan and Hong Kong (Leung, 1981b; "Ventures at Work," 1981). In an effort to avoid net currency outlays, countertrade is being actively promoted through agreements that link the import of foreign goods contractually to exports of Chinese manufactures (Verzariu, 1982).

Since the PRC's economic readjustment in 1979, a number of actions have been taken by the Chinese government in an effort to expand trade, especially with developed Western

nations. Among these actions are 1) decentralization of some foreign trade activities, 2) greater use of worker incentives and local retention of a share of profits, 3) freer utilization of foreign credits, 4) expanded pursuit of joint commercial arrangements with foreign companies, and 5) importation of the necessary raw materials to increase output and improve efficiency in exporting industries. Specific commercial arrangements being utilized include export processing, compensation trade, and joint ventures (Emerging Textile-Exporting, 1982).

Export processing is an arrangement under which foreign companies supply materials and the Chinese firms assemble products according to foreign contractors' specifications for a processing fee. There have been more than 6,000 of these projects. Most were small or medium sized, and 70 percent were with Hong Kong or Macau. The processing fees in textile yarn and apparel enterprises are considerably lower than the corresponding costs in Hong Kong or Macau, primarily due to lower wage rates in China (Emerging Textile-Exporting, 1982).

In compensation trade, the PRC provides the factory and labor. The foreign firm supplies capital, equipment, and technology; it is reimbursed for these with goods produced in Chinese plants. This allows machinery and equipment to be imported without cash payments in foreign exchange.

Several hundred of these projects are operational; nearly one-half involve textile and apparel manufacturing with Japan as the major partner country (Doing Business with, 1980).

Joint ventures are business arrangements in which there is a sharing of investment, management, and profits between the foreign investors and the Chinese interests. The foreign share of the profits, subject to a 10 percent tax, may be remitted outside China (Doing Business with, 1980).

The textile industry is essential as an earner of foreign currency. Special emphasis is placed on oil and petroleum products (21 percent of Chinese exports in 1980) in the Chinese export structure, but the share of textile exports (28 percent) exceeds oil products by seven percent. Oil exports grew in value at a high rate in 1979 and 1980, but much of that growth was due to higher prices. The only other major export item is foodstuffs. This trade structure is expected to continue for some time to come, with textiles being the most easily producible commodity for export (Uno, 1982).

The rate and direction of growth for the textile and apparel industries will depend on many factors. In a non-market economy the government has broad powers to reassign resources and change levels of production. Cotton production will depend partly on climatic conditions which

are difficult to predict. Energy will be a key factor in meeting the country's economic goals. Short range energy goals include conservation of available energy and the development of offshore oil resources (Lee, 1982).

Development of its industrial infrastructure will also be important for China's textile and apparel industries. China's existing transportation system is underdeveloped. Resources must be invested to build highways, develop a railroad network, and expand airports and port facilities (Obenski, 1982).

Potential new textile products are being evaluated. For example, China has succeeded in breeding a new variety of sheep which grows a heavy fleece of long, fine wool ("Finer Wool," 1981). Recently the Chinese recognized a rising worldwide demand for leather. As a result they have been encouraging the production of pig skin and pig leather as a saleable commodity. The potential for the successful development of this industry seems considerable since China has perhaps a third of the world's pigs ("Profitable Pigs?", 1981).

China is also increasingly opening up its borders to Westerners and western ideas. The French fashion designer Pierre Cardin opened a showroom in Beijing in November 1981, followed by a boutique in 1982. Cardin's future plans call for a hotel and a branch of Maxim's restaurant. Cardin

expects to take advantage of China's low labor costs and the abundance of silk and cashmere ("Fashion Invasion," 1981).

Critical to the industry's success will be its ability to actively participate in and continue to expand its foreign trade. "The export items which were once centered on cotton textiles have been diversified, including synthetic textile products, wool, linen, and silk" ("Chinese Textile Industry," 1982, p.14). Chinese manufacturers will need to improve the quality and design of their products and adopt more sophisticated marketing techniques. Chinese political leaders must strive to keep markets open to Chinese goods and work actively to prevent the adoption of protectionist trade policies by both developed and developing nations.

China's Pattern of Textile and Apparel Trade Worldwide

China has approximately 25 percent of the world's population and only one percent of the world's trade. In 1978 China imported a total of just over \$10 billion in goods; that was less than the amount imported by either Norway or Denmark. In the same year the U.S., with one-fifth the population of China, imported a total of \$183 billion worth of goods (Ludlow, 1980).

China has not, until very recently, published detailed trade data; consequently, most of the published statistics

are derived from partner countries' data. These figures show that China's foreign trade registered a 40 percent increase in 1978, a 38 percent increase in 1979, and a 38 percent increase again in 1980. This rapid growth in recent years is largely the result of trade with non-Communist countries. Sino-Soviet trade remained stagnant in recent years and declined significantly in 1981. China's trade with Eastern Europe increased from \$1.95 billion in 1978 to \$2.69 billion in 1980, with Romania accounting for about half of this trade. The value of trade with Communist countries as a share of China's total foreign trade has fallen steadily from 70 percent in the 1950's to 10 percent in recent years (Chen, 1982).

In 1980 China's leading trading partners, in addition to the big four of Japan, Hong Kong, the United States, and West Germany, were Romania (4.7 percent of trade), Australia (2.6 percent), Canada (2.2 percent), the United Kingdom (1.8 percent), France (1.8 percent), and Singapore (1.5 percent) (Chen, 1982). Overall, developed countries (including Hong Kong and Macao) account for over 70 percent of current trade and the less developed countries for the remainder (Quarterly Economic Review, 1981).

In an effort to diversify its markets, China has expanded its number of trading partners significantly, from 20 in 1950 to 167 in 1978. The number of bilateral trade

agreements has increased from six to 79 during that same period (JETRO, 1979).

Key commodities in China's trade are textile and apparel manufactures. In 1982 China exported more than 600 million square yards of fabric and garments, in contrast to 12 million in 1972 ("Glad Rags," 1983). The PRC is probably the largest textile producer in the world, and based on current patterns may be the largest exporter of textile and apparel products by 1985. Chinese exports are having, and will continue to have, a significant impact on the export trade of the Big Three: Hong Kong, Taiwan, and South Korea. China is an important supplier of fabrics to Hong Kong's apparel manufacturing industry; at the same time it is a competitor in other foreign markets with Hong Kong's apparel. Chinese exports offer Taiwan and South Korea strong competition in most of their fabric and apparel markets (Emerging Textile-Exporting, 1982).

Between 1975 and 1980, Hong Kong's share of the textile markets in 24 industrial countries that are members of the Organization for Economic Co-operation and Development (OECD) fell from 11.5 percent to 6.4 percent. China's share, by contrast, increased from 1.8 percent to 3.0 percent, while Taiwan and South Korea increased their shares by smaller fractions ("Glad Rags," 1983).

China has been able to capture a good share of sales of cotton fabrics to the industrial countries. Asian exporters' share of the OECD cotton fabric market increased by 400 percent between 1975 and 1980, while the OECD's total imports of cotton fabrics doubled from \$2.5 billion to \$5.2 billion. China's share in that increased from 5.4 percent to 6.7 percent. India and Pakistan increased their shares as well, while Taiwan and Hong Kong, with higher labor costs, lost market share. In Japan alone, China had 40 percent of the sales of cotton fabrics by 1980, up from 25 percent in 1975 ("Glad Rags," 1983).

China's exports of textiles and apparel grew about 11 percent from 1973 to 1976 in contrast to a 218 percent increase from 1976 to 1980. In the latter period, exports of textiles (including floor coverings) increased from \$780 million to \$2.1 billion, and exports of apparel increased from \$239 million to \$1.2 billion. Cotton fabrics are the major textile item exported, and exports of this commodity have increased nearly 100 percent since 1976 (Emerging Textile-Exporting, 1982).

Second in importance to cotton woven fabrics as textile export items are raw silk and silk woven fabrics. Silk fibers represented two-thirds of China's fiber exports during the period 1976-79; in 1979 silk textile products were 13 percent of all China's fabric production. China is

the world's largest raw silk producer, and the principal supplier to the United States with 74 percent of the American market. In terms of China's total raw silk exports, the U.S. is a small importer with only two percent of the aggregate. Japan imported more than half of China's raw silk production and Italy 30 percent (Probable Economic Effect, 1981).

The largest percentage increase in Chinese exports has occurred in woven fabrics of spun man-made fibers which started from a very small base and reached \$132 million in 1980. Exports increased sharply in nearly all apparel categories, with the largest increases in knit outerwear and women's woven outer garments (Emerging Textile-Exporting, 1982).

Developing countries, including Hong Kong, account for over 40 percent of China's textile and apparel exports, but developing countries other than Hong Kong account for under 10 percent of the market. Developed countries accounted for over 55 percent of the total in 1980 (see Table 1). The European Community and Southern Europe, as well as the United States, are growing markets for Chinese textile and apparel exports (Emerging Textile-Exporting, 1982).

China's imports also point to the importance of the textile and apparel sectors. Since 1979, the import shares of materials for the textile and apparel industries have

Table 1
Textile and Apparel Exports from China to
Selected Countries, 1976 1978 1980

Country	1976	1978	1980	Percent of Total 1980 ^a	Per Capita Consumption 1980
Millions of U.S. Dollars					
U.S.	63	135	426	12.1	\$2.10
Hong Kong	328	585	1,281	36.3	\$313.37
Japan	165	302	526	14.9	\$5.08
FR Germany	45	80	207	5.9	\$3.39
Australia	58	83	127	3.6	\$9.97
Singapore	68	94	131	3.7	\$64.39
Canada	65	50	87	2.5	\$4.03
France	36	44	109	3.1	\$2.19
U.K.	25	50	73	2.1	\$1.32
Italy	19	23	88	2.5	\$1.61
Spain	8	22	57	1.6	\$1.71
Sweden	16	22	45	1.3	\$5.65
Netherlands	20	22	50	1.4	\$3.85
Other	<u>184</u>	<u>137</u>	<u>321</u>	<u>9.1</u>	
Total	1,099	1,650	3,529	100.1	

Note. Compiled from official statistics U.S. Department of Commerce.

^aColumn total exceeds 100 percent due to rounding.

increased, reflecting a shift in China's economic priorities following the adoption of the readjustment policy. Cotton, chemical fiber, pulp, and other raw materials for textile and other light industrial production made up 17.2 percent of Chinese imports in 1979 and 24.3 percent in 1980 (Chen, 1982). In man-made fibers alone, China has become the single largest importing country since 1980 ("Chinese Textile Industry," 1982).

China's imports of textile products consist primarily of raw materials. Of total textile imports in 1979 amounting to \$1.5 billion, raw cotton accounted for \$1.0 billion, man-made fiber \$0.2 billion, and textile yarn and fabric \$0.3 billion (see Figure 8). Over one-half of China's raw cotton imports came from the United States, and these imports are expected to remain at a high level. Even considering the increasing levels of domestic production, China will probably still continue to import man-made fibers due to the growing consumption of these fibers in textiles for both the domestic and export markets (Emerging Textile-Exporting, 1982).

Hong Kong, the second largest market for all Chinese exports, is China's largest single source of foreign exchange earnings and the most important market for its textile and apparel exports. For textile mill products, Hong Kong is more than twice the size of any other market,

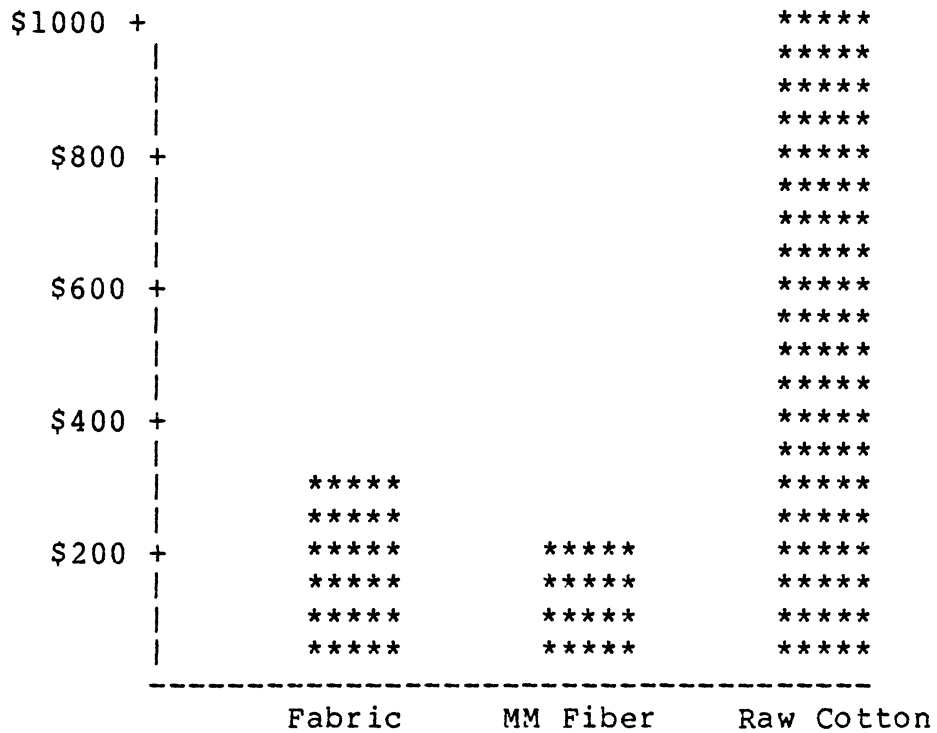


Figure 8. Textile Product Imports into the PRC
For 1979, Millions of Dollars

Source: Official Statistics U.S. Department of Commerce

including the European Community, which surpassed Japan in 1980 as the second most important market. Hong Kong is also the leading market for apparel exports, much of which is believed to be reshipped by Hong Kong merchants to other countries (Emerging Textile-Exporting, 1982). In terms of trade in all commodities, China has recently replaced Japan as Hong Kong's biggest supplier. Hong Kong increased purchases from China by 67 percent in 1979-1980. These purchases were mainly in petroleum and related products (up 142 percent), textiles (up 46 percent), and clothing (up 204 percent) (Chen, 1980).

China's leading trading partner in all commodities and an important partner in textile trade is Japan. Since diplomatic relations with Japan were established in 1972, Japan has become China's biggest trading partner. From 1976 to 1979 exports from China to Japan increased by 158 percent. In contrast, from 1976 to 1979 China's textile exports to the United States rose 349 percent, but were valued at only 35 percent of the exports to Japan (Probable Economic Effect, 1981). In 1980 total trade between the two countries reached \$9.4 billion and accounted for almost 26 percent of China's total trade (Quarterly Economic Review, 1981). In 1980 textiles were the second highest category of goods exported to Japan, following crude minerals and metals (including petroleum). China imported large quantities of

synthetic fibers and cotton from Japan (China: International Trade, 1981).

In the first three months of 1980 the value of Chinese apparel exports to Japan increased 102 percent from the same period the previous year. This increase followed the trend of the previous several years and was largely the result of inflated prices of apparel in Korea and Taiwan, the main suppliers to Japan. Korea remains a dominant apparel exporter to Japan, but is losing its importance as price and labor costs soar. Japanese importers have been shifting their sources from Korea to China, especially for low-priced apparel ("Large Increases Seen," 1980).

China's third largest trading partner in 1980 was the United States. Sixty-five percent of Chinese exports to the U.S. were textile and apparel products; no other category approached the importance of this sector. (China: International Trade, 1981). As a market for Chinese apparel, the United States was second to Hong Kong in 1980, exceeding both Japan and the European Community (Emerging Textile-Exporting, 1982).

West Germany ranks fourth in the list of PRC's trading partners. Textile and apparel products account for 33 percent of China's exports to West Germany. The second largest category, accounting for 23 percent of the trade, is crude materials. China imported virtually no textiles or

apparel from West Germany in 1980. The two largest import categories were machinery and transportation equipment (55 percent) and chemicals (23 percent) (China: International Trade, 1981).

With the exception of these top trading partners, China's trade is widely dispersed around the world. In 1977, 82 percent of exports and 84 percent of imports were exchanged with non-Communist countries (JETRO, 1979).

During the period 1976 to 1979 China's exports to developed countries (excluding the U.S.) increased 131 percent (see Figure 9). The largest increase was registered by the footwear subsector, a 192 percent gain. However, this subsector had as a base the smallest share of total exports, approximately two percent. The most significant gain in terms of export share was registered by apparel and accessories; that subsector increased its share from 17 to 23 percent. The largest market share, 42 percent, was held by textile yarns, fabrics, and textile articles. Silk and cotton fabrics were the most important items exported, with cotton fabrics accounting for 31 percent of the total of this subsector and silk 13 percent. The final significant subsector was textile fibers. These accounted for 29 percent of textile and apparel exports to developed countries in 1979. Silk represented 65 percent of annual fiber exports and fine animal hair 21 percent (Probable Economic Effect, 1981).

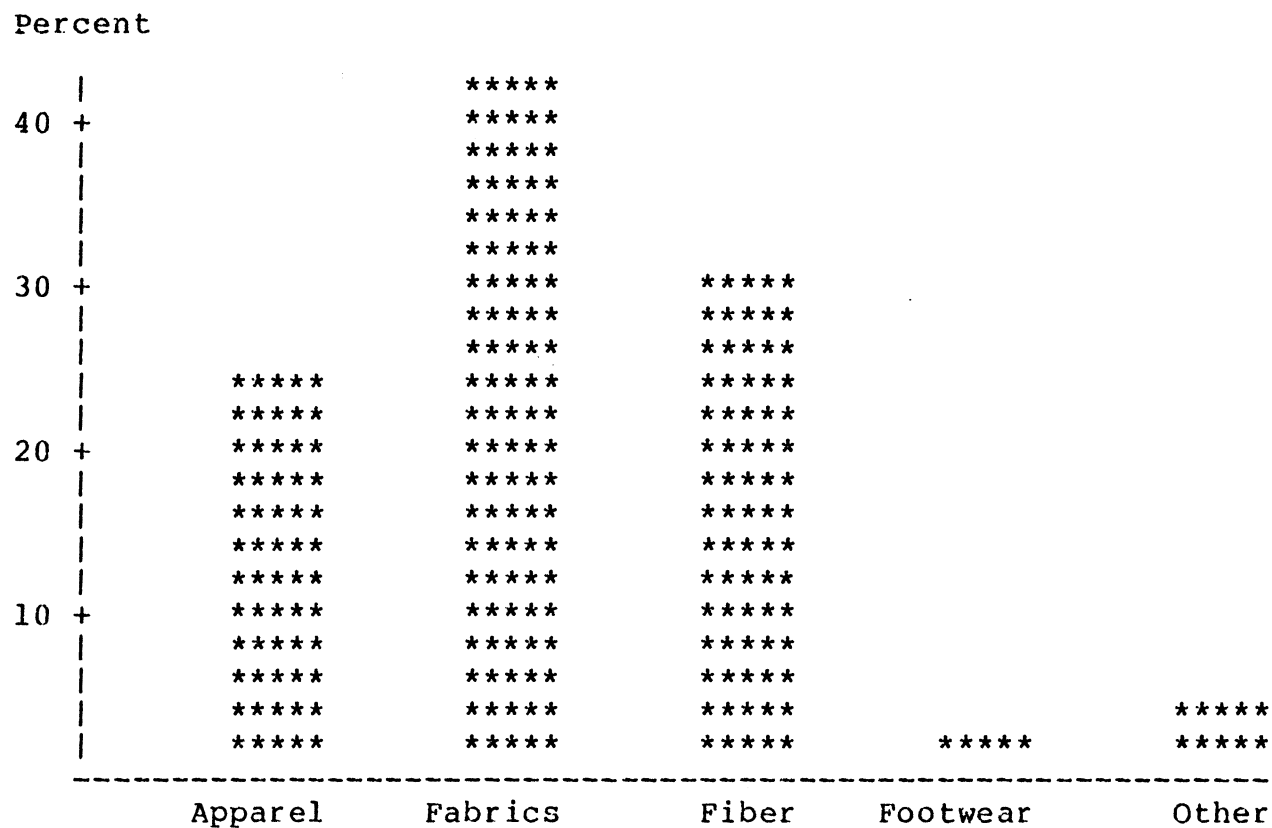


Figure 9. PRC Textile and Apparel Exports to Developed Countries (excluding the U.S.) 1979

Source: Official Statistics U.S. Department of Commerce

The recent growth in China's textile and apparel trade worldwide is remarkable considering the difficulties inherent in establishing trading relationships. It has not been an easy task for other countries to develop a viable pattern of trade with China. There are significant differences in cultures and differences in the organization of market and planned economies which underlie trade policies and agreements. Companies wishing to sell to the Chinese face difficulties in making their products known, meeting potential end-users, discussing prices, making contracts, and arranging for shipping and payment. Those wishing to buy from the Chinese have to deal with the country's erratic economy, the PRC's limited knowledge of the outside world, and their lack of foreign exchange. Moreover, the economy suffers from periodic shortages which may result in products unsuited to the Western market (MacDougall, 1980).

Textile Trade Between the United States and
The People's Republic of China

U.S. textile exports to the PRC have been consistent with the pattern established by China's other trading partners. Exports from the United States to China have been almost exclusively raw materials rather than manufactures (see Figure 10). Apparel exports are the notable exception.

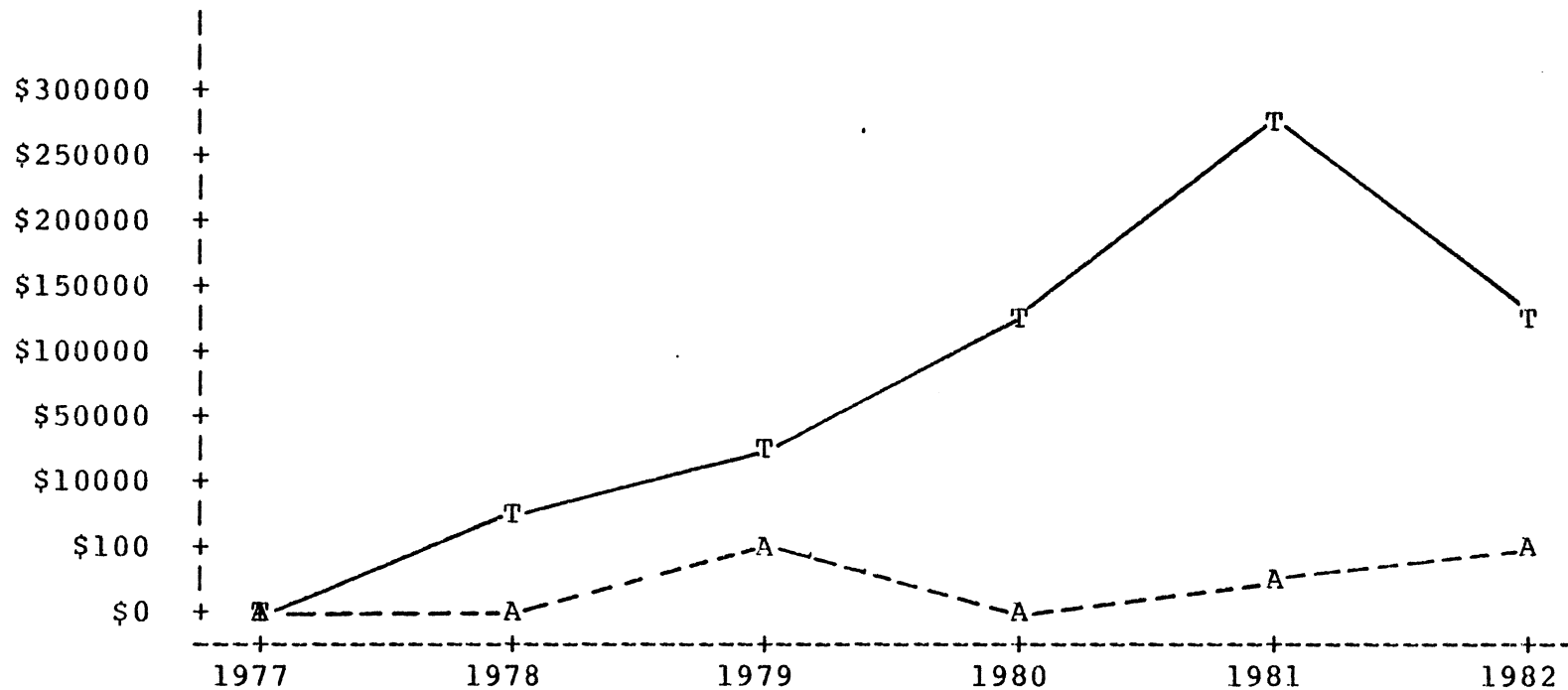


Figure 10. Textile and Apparel Exports from the United States to the People's Republic of China
In Thousands of Dollars F.A.S. Value

Plot of Textiles*Year Symbol Used is T
Plot of Apparel*Year Symbol Used is A

Source: Official Statistics U.S. Department of Commerce

A variety of apparel, including garments for infants, as well as men and women, have been exported to the PRC since 1978, but the value of these exports is insignificant. The only year the dollar value exceeded \$100,000 was in 1979 when the total value of apparel exports reached \$211,000. In 1982 total apparel exports amounted to less than \$94,000 (Department of Commerce, 1983).

China has been an important market for U.S. cotton exports since 1978. China's decision to boost textile output led to a rapid expansion of U.S. cotton sales from \$157 million in 1978 to \$357 million in 1979 and \$701 million in 1980 (Chen & DiFederico, 1982). Cotton sales began to drop in 1981, largely because of increased Chinese domestic cotton production. Total 1981 sales were \$464 million. In the first six months of 1982 the value of cotton imports continued to decrease. A reduction in volume as well as a drop in cotton prices contributed to the overall decline (31st Quarterly Report, 1982).

The other important commodities exported to China from the United States are man-made fibers and fabric. The 1982 total for these commodities was 42 times the level exported in 1978 (Department of Commerce, 1983).

U.S. exports of noncellulosic fibers to China increased 67 percent in 1981, while shipments to all countries increased only 13 percent. China's share of the total

noncellulosics export market was 46 percent in 1981, up from 31 percent in 1980. Three fiber categories dominated the Chinese export business in 1981: polyester staple and tow up 41 percent from 1980, textured polyester up 300 percent from 1980, and acrylic staple and tow also up nearly 300 percent over 1980 quantities. China's portion of the worldwide polyester staple and tow export market for the United States increased 76 percent in 1981, after an increase of 59 percent the previous year. U.S. shipments to China in 1981 amounted to 16 percent of total production, up from 12 percent in 1980 (Scheier, 1982).

By 1982 the Chinese had managed to stockpile significant quantities of man-made fibers, lessening their demand for these exports. Chinese domestic production probably increased as well, although figures are not available to substantiate these increases (31st Quarterly Report, 1982). Overall man-made fiber-related exports to China from the United States decreased by more than 50 percent between 1981 and 1982 (Department of Commerce, 1983).

U.S. imports of Chinese textiles, apparel, footwear, fur and leather products increased more than 500 percent between 1976 and 1980. In contrast, imports of those articles from all countries increased by 66 percent. Apparel accounted for three-quarters of the increase in

imports from 1976 to 1980. Apparel shipments increased more than 12 times from \$19 million to \$257 million. Historically, cotton fabrics were the principal item imported from China. The value of fabric shipments increased somewhat from 1976 to 1980, but their share of the total textile and apparel shipments from China declined from 48 percent to 14 percent. Fiber imports which increased by 60 percent, were primarily of silk and fine animal hair (Probable Economic Effect, 1981).

Another import category that has grown dramatically is textile furnishings: from \$7 million in 1976 to \$66 million in 1980, an increase of 800 percent. Imports in this category from other countries increased 100 percent during the same period (Probable Economic Effect, 1981). Floor coverings accounted for two-thirds of this increase. The PRC is aggressively developing its carpet industry and finding a world market for its products. In addition to the U.S., firms in Great Britain, Belgium, and Switzerland purchased floor coverings from China in 1981 (Leung, 1981a).

Since 1980 textile and apparel imports from China have continued to increase dramatically. In 1980 Chinese exports increased by 41 percent, in 1981 by 73 percent, and in the first 10 months of 1982 they rose by 32 percent (Weisskopf, 1983). When significant textile and apparel trade began between the U.S. and China in 1975, the value of textile

imports was more than three times that of apparel imports. The value of textile and apparel imports approached parity in 1978, and by 1979 the value of apparel imports surpassed that of textile products. This gap has steadily widened since 1979; in fact in 1981 the value of apparel imported from the PRC was twice that of textiles (U.S. General Imports, 1982). Cotton has been the primary fiber in both textile and apparel imports throughout this period, but wool and man-made fiber imports have made significant gains and increased their shares of the PRC's total import market.

Cotton Imports

In 1975 China was the second largest supplier of cotton textiles and apparel to the U.S. market; this was also the rank China held in 1982 after slipping to third and fifth in 1976 and 1977. The PRC's share of the world import market ranged from a low of five percent in 1977 when imports totaled 82 million square yards, to a high of 18 percent in 1982 with imports of 438 million square yards. The trend in quantity has been consistently upward with the single exception of 1977 when imports declined by 45 percent (see Figure 11).

This decline in 1977 was the result of a decrease in cotton textile imports. Cotton apparel, in contrast, has been imported in increasingly greater quantities in every

SYE SUM

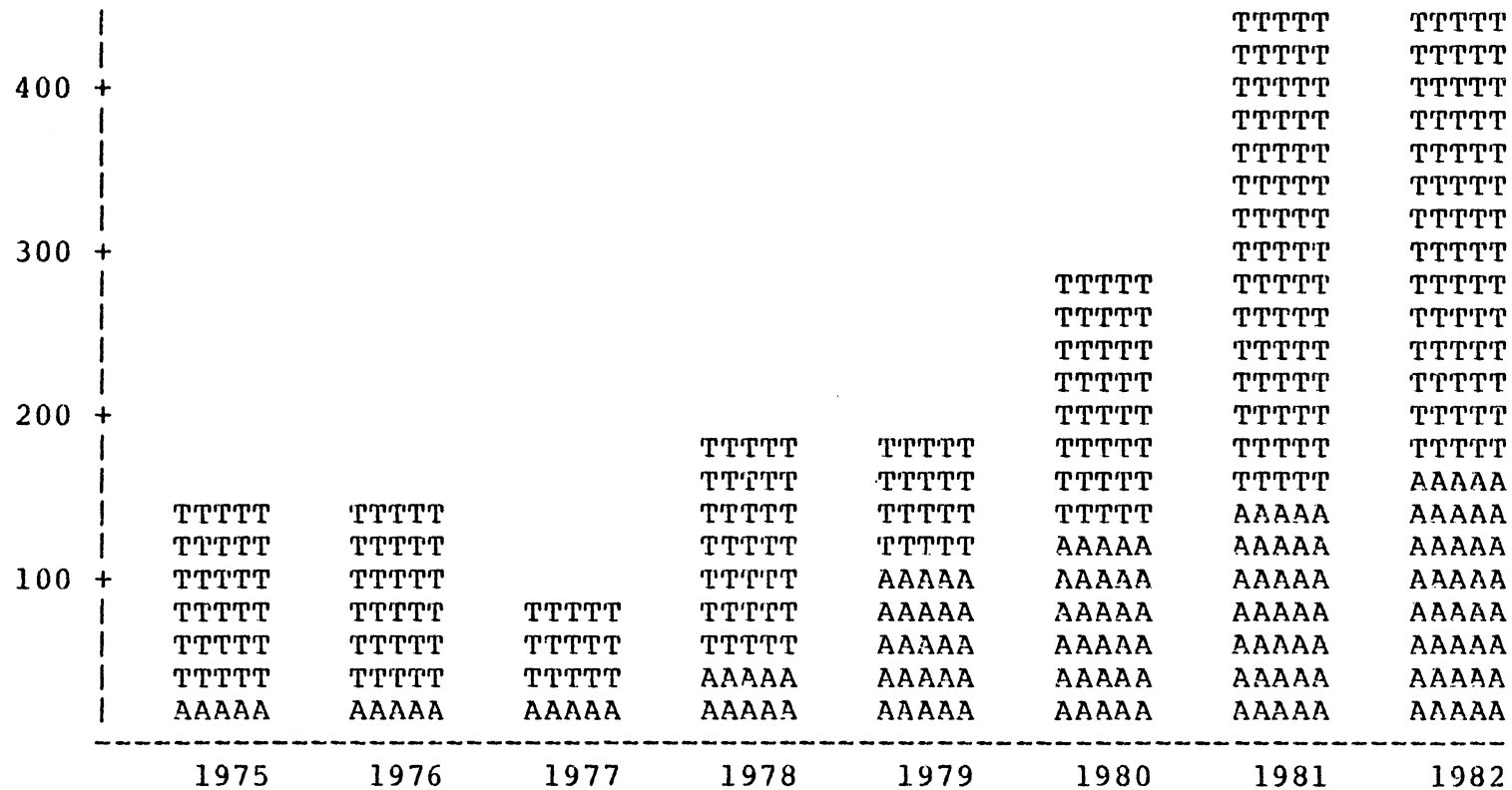


Figure 11. U.S. Imports from the PRC in Thousand Square Yard Equivalents, Cotton Textiles (T) and Apparel (A) 1975-1982

Source: Official Statistics U.S. Department of Commerce

year since 1975. In 1975 the United States imported 13 million square yards of cotton apparel from China (2.4 percent of the world total); by 1982 the quantity had increased to 156 million square yards or 13.1 percent of the world total. Only China's rank among suppliers showed any variation in trend. In 1975 the PRC was ranked sixth; the following two years the rank was seventh, even with increased imports. In 1978 China took fifth place, and by 1979 second place belonged to the PRC.

China's cotton textile imports followed a pattern similar to the textile and apparel cotton aggregate with two negative growth rates in 1977 and 1979. China ended the period in 1982 as the largest supplier of cotton textiles to the U.S. market with 22.4 percent of the total. The PRC began this period in 1975 with 17.2 percent of the world market and dropped to a low point of 6.6 percent two years later. In 1979 China was the fourth largest supplier, moving up to second in 1980, and to first by 1981.

Wool Imports

Measured by percentage of world trade and rank among supplier countries, wool is the second most important fiber import from the PRC. The total wool textile and apparel aggregate accounted for 0.1 percent of the world's trade in 1975 and amounted to 104,000 square yards. The Chinese

share increased slowly from 1975 to 1979 (see Figure 12). By 1979 Chinese imports totaled 990,000 square yards; PRC was ranked sixteenth among supplier nations with less than one percent of the total trade. The biggest year for Chinese wool imports was 1980. Square yardage increased to 10.7 million, supplier rank to fourth, and percentage of total imports to 8.3 percent. In spite of an import decline of 14 percent in 1981, China was the fifth largest supplier with 6.7 percent of the import market. In 1982 China's rank dropped to sixth while the quantity of wool imports rose 24 percent to 10.8 million square yards (7.8 percent of the total world imports).

While wool apparel has always accounted for more than half of the apparel and textile wool aggregate, apparel's share for 1980 through 1982 was even higher. It is therefore not surprising that wool apparel imports followed essentially the same pattern as the aggregate. The quantity ranged from a low of 65,000 square yards in 1975 to a high of 9.2 million in 1982. Supplier rank varied from twenty-fifth in 1977 to third in 1980 through 1982. The share of total imports rose from 0.1 percent in 1975 to 9.7 percent in 1982. Both quantity and percentage dipped slightly in 1981 as imports declined by 26 percent; 1982 showed a return to 1980 levels as imports increased 7 percent over 1981 figures.

SYE SUM

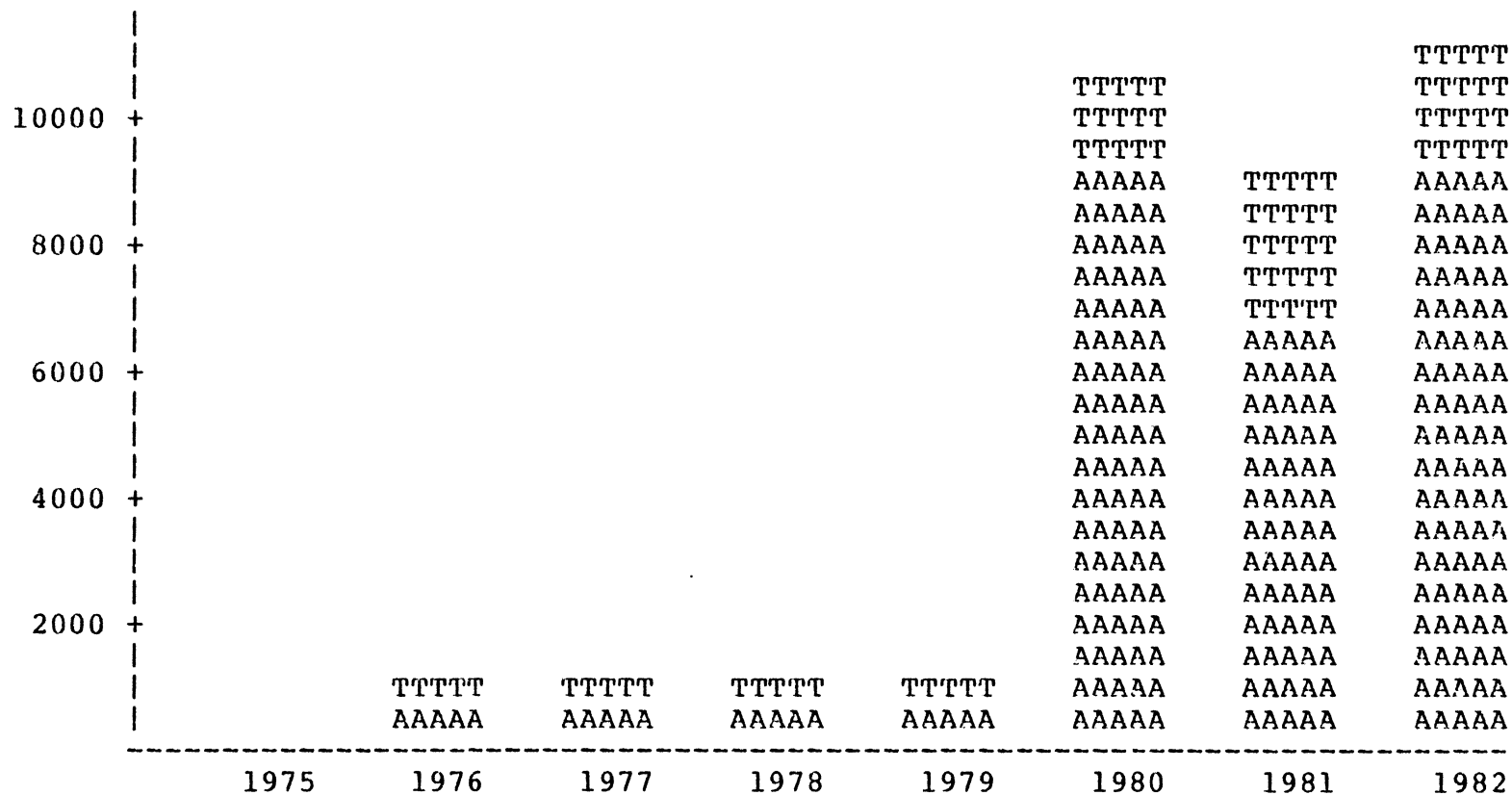


Figure 12. U.S. Imports from the PRC in Square Yard Equivalents
1975-1982, Wool Textiles (T) and Apparel (A)

Source: Official Statistics U.S. Department of Commerce

Chinese wool textile exports are not as important as wool apparel exports to the United States. The quantity of wool textiles increased from 39,000 square yards in 1975 to 2.4 million square yards by 1981. China was the fifth largest supplier of wool textiles to the U.S. market in 1982 (up from seventeenth in 1978) with 4.3 percent of the total yardage imported.

Man-Made Fiber Imports

In 1981 the man-made fiber textile and apparel aggregate of 110 million square yards accounted for 3.6 percent of the U.S. import total. China ranked as the fifth largest supplier in 1982, in contrast to a rank of thirty-fifth in 1976, twenty-fourth in 1978, and tenth in 1980 (see Figure 13). The percentage of total trade was above two percent for the first time in 1981, when the square yardage more than doubled from the previous year. By 1982 China had captured 6.6 percent of the total man-made fiber import market.

Apparel of man-made fibers, like apparel of wool, is the most important component of the aggregate. During this period apparel imports of man-made fiber increased from 739,000 square yards to 192 million, and the percentage of world trade from .1 percent to 9.1 percent by 1982. China

SYE SUM

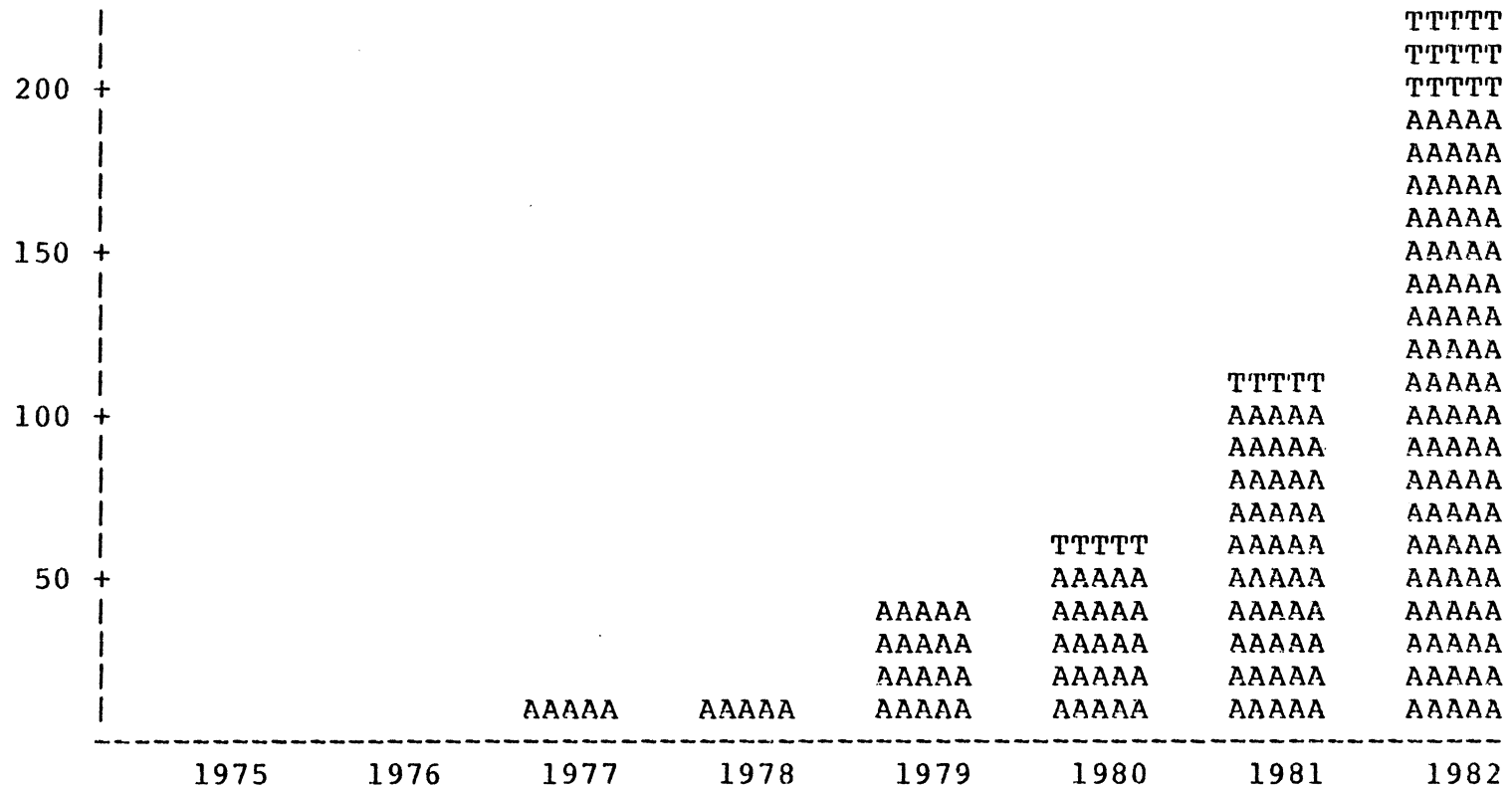


Figure 13: U.S. Imports from the PRC in Thousand Square Yard Equivalents, Man-made Textiles (T) and Apparel (A) 1975-1982

Source: Official Statistics U.S. Department of Commerce

was the twenty-second largest supplier to the U.S. market in 1976; in 1982 the PRC was ranked fourth.

Man-made fiber textile imports have increased dramatically, but from a very small base. In 1975, 226,000 square yards of man-made fiber textiles were imported by the United States; by 1982 this quantity had increased to 29.3 million square yards. Even with this large percentage increase, China still only accounts for 2.4 percent of the total import market and ranks as the ninth largest supplier.

Apparel Aggregate

Apparel of all fibers increased dramatically from 1975 to 1982. At the beginning of this period apparel imports totaled 13.5 million square yards and accounted for .7 percent of the world's trade. Seven years later China was the fourth largest apparel supplier to the U.S. market with 10.6 percent of the total import market (357 million square yards).

Textile Aggregate

Textile imports of cotton, wool, and man-made fibers from China have also increased from 1975 to 1982, but the importation pattern has been erratic. The PRC began this period with imports of 128 million square yards, 7.3 percent of the world's total. The quantity remained stable in 1976

(129 million square yards), dropped in 1977 (to 60 million square yards), increased again in 1978 (to 139 million square yards), only to decline a second time in 1979 (89 million square yards). Textile imports rebounded in 1980 to 159 million square yards and then doubled in 1981 (319 million square yards). China maintained its number two position with 12 percent of the import market from 1981 to 1982, even with a decline in quantity of 2 percent.

Aggregate Imports of Textiles and Apparel

In 1975 the aggregate of cotton, wool, and man-made fiber textiles and apparel imports from the PRC to the United States was equivalent to 141 million square yards and represented 3.7 percent of the total imports from all countries. This aggregate increased slightly in 1976 and then declined by almost half in 1977. The PRC rebounded strongly in 1978 and has increased its imports every year since then (see Figure 14). In 1982 the total was 671 million square yards, representing 11.3 percent of the world total; since 1981 China has been the fourth largest foreign supplier to the U.S. market (up from an unranked position in 1975).

(Note: all statistics on Chinese imports from the International Agreements and Monitoring Division, Office of Textiles and Apparel, Department of Commerce, 1982.)

SYE SUM

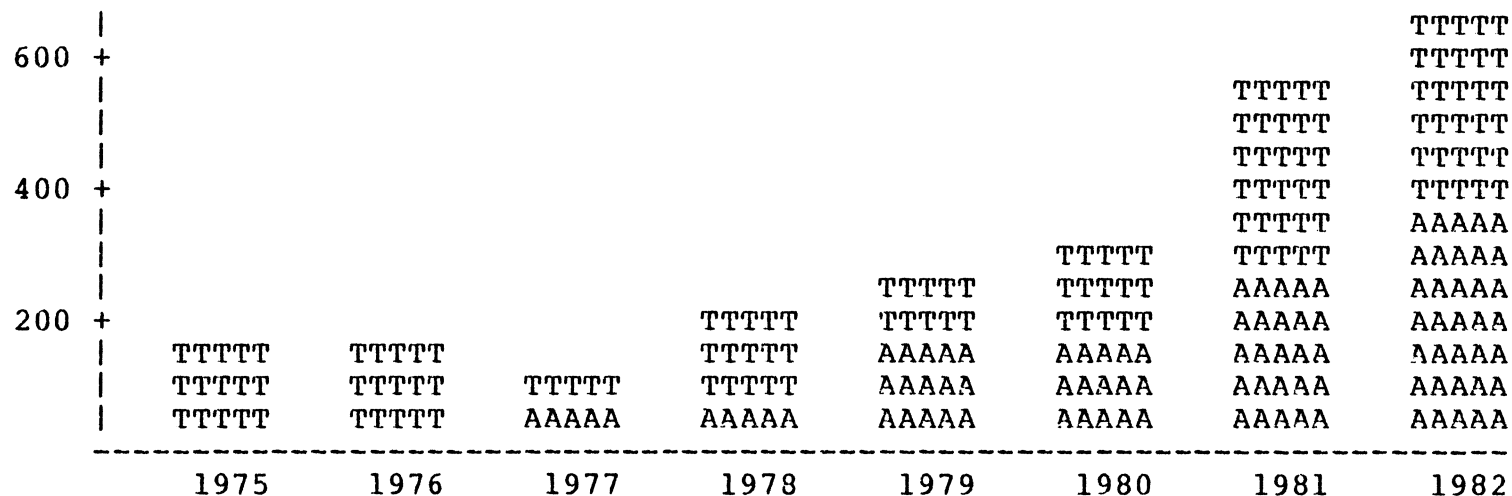


Figure 14. U.S. Imports from the PRC in Thousand Square Yard Equivalents, Aggregate Textiles (T) and Apparel (A) 1975-1982

Source: Official Statistics U.S. Department of Commerce

Chapter IV

OBJECTIVE TWO

The second objective of this research was to investigate the role of price in relation to market share. The import market was the focus of this objective due to the lack of data for values of U.S. production for specific categories. The goal was to determine if price was a major factor in changes observed in the import market shares of countries in 21 categories in which the PRC is actively importing.

The researcher examined this question from two different perspectives using two analytical methods. The first perspective was that of price elasticity. Analyses were done to determine the responsiveness of the quantity demanded to a change in price. Quantity was measured by market share. A linear regression model was utilized in the second analytical method to determine the amount of variability in market share which could be explained by a combination of this period's relative price (relpr), previous period's market share, and market share two periods back; that is, the market share lagged one quarter (lag1) and the market share lagged two quarters (lag2).

Methodology

Data Collection

Data for this analysis were obtained from Textile Register Tapes created by the Census Bureau and the Textile Information Management System (TIMS). TIMS consists of three component data files: textile and apparel imports into the U.S.; United States' textile and apparel exports; and selected domestic textile and apparel production, employment, and market information.

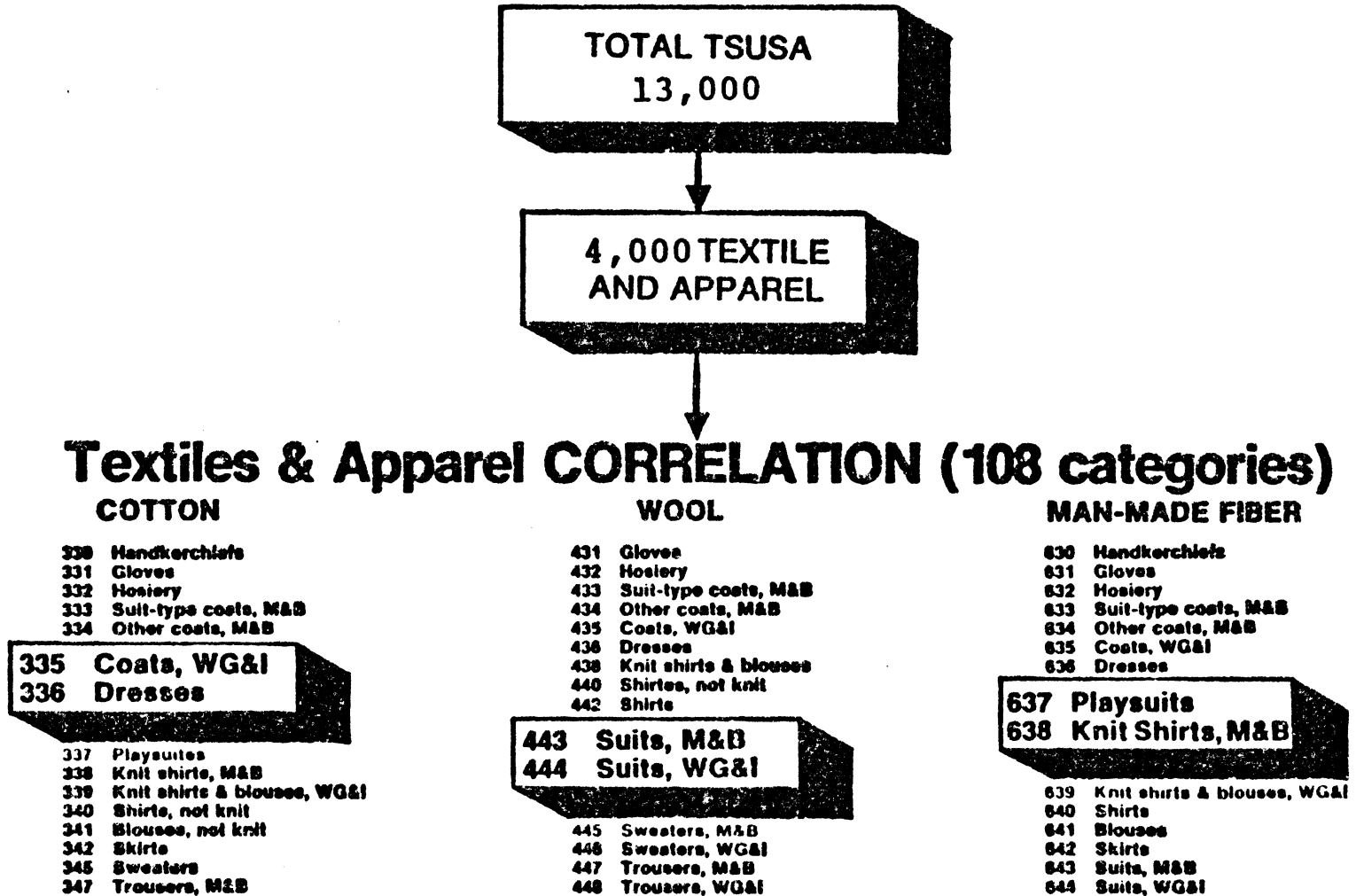
Two Textile Register Tapes (1977-1979, 1980-1982) were copied and merged for this analysis. The tapes contained data on all textile and apparel shipments to the United States; during the six year period studied there were 15 million textile and apparel shipments from 159 countries. These shipments were summarized at the TSUSA* (Tariff Schedule of the United States Annotated) level and were assigned to one of 4,000 TSUSA numbers which cover textile and apparel imports. The following information was secured from the tape for each shipment: month imported, country of origin, TSUSA number, value, and quantity. Quantity was provided in two ways: one square yard equivalent (SYE) generic measure, and another natural measure such as dozens or pairs. The SYE measure was employed by this analysis so that different types of garments could be compared with the same unit.

The TSUSA numbers were collapsed to form 108 categories (see Table 2). From this data base five million observations were selected; these observations described shipments in the 21 categories identified for this study. Quantity shipped was divided by value to get price data for each country's imports. These data were further aggregated; the 72 monthly observations were combined into 24 quarterly figures. PRC data for the 21 categories were copied into a separate file so that they could be examined independently and recombined later for aggregated analyses.

A relative price for each quarter for each country in each category was calculated. The total world value in a specific category was divided by the total quantity to get the average world price. That price was indexed to 100, and each country's relative price was determined relative to the average price. For example, the relative price of shipments in category 333 for China was the result of dividing China's price for 333 (the value of imports divided by the quantity) by the world price and multiplying that number by 100. In a similar way the market share for each country for each category was calculated. The country's quantity was divided by the world quantity and multiplied by 100 to show percent of market.

Table 2

TEXTILE AND APPAREL IMPORT CLASSIFICATION



Data Analysis

In order to determine the responsiveness of market share to a change in relative price, a logarithmic regression analysis was utilized (Henderson & Quandt, 1971). The dependent variable was the log of the market share for the current period; the predetermined variable was the log of relative price for the current period:

$$\text{Log}(\text{MS}) = b_0 + b_1 [\text{Log}(\text{RelPr})] .$$

The data were a time series of 22 quarters. The total data were a 24 quarter time series, but the first two quarters of 1977 were dropped in this analysis to make it more analogous to the linear regression analysis.

The Systems Regression Procedure (SYSREG) of SAS (the Statistical Analysis System) was the procedure used for the elasticity analysis of PRC data. A regression analysis was done for each of the 21 identified categories. The Time-Series Cross-Section Regression Procedure (TSCSREG) of SAS was used to analyze the data of PRC competitors. PRC competitors were defined as those countries importing into a specific category in every quarter during the six year period from 1977 to 1982. These competitor countries and the PRC accounted for over 90 percent of the imports in 15 of 21 categories studied. In four categories the combination of competitor countries and the PRC accounted for over 80 percent of total imports; in the remaining two

categories, more than 70 percent of the apparel imported came from this aggregate. For descriptive purposes, TSCSREG was run a second time with data from the merger of competitor countries and the PRC.

The model for this analysis was identical to that utilized for China data with Proc SYSREG. The time series was also 22 quarters. The added dimension was the cross-section of all importing countries in each category.

Results from the cross-section analyses were compared to results for the PRC regression analyses. A t-test was employed to determine if the cross-sectional (competitor country) elasticity was significantly different from the PRC's elasticity in each category.

Similar procedures and analyses were utilized to examine the variability in market share which could be explained by a combination of relative price, market share lagged once, and market share lagged twice. The dependent variable of the linear regression model was current period's market share (MS). The predetermined variables were relative price (relpr), market share lagged one quarter (lag1), and market share lagged two quarters (lag2):

$$MS = b_0 + b_{\text{RelPr}} (\text{RelPr}) + b_{\text{lag1}} (\text{lag1}) + b_{\text{lag2}} (\text{lag2}).$$

A 24 quarter time series was used for this analysis. There were 22 quarters of complete observations since the first two quarters supplied data for the lagged periods.

PRC data for each category were analyzed using Proc SYSREG. A cross-sectional analyses of PRC competitors and the combination of China and its competitors utilized Proc TSCSREG. The role of price and lagged market shares in explaining the import market share for PRC imports was contrasted with the role played by these variables with PRC competitors in the same 21 categories.

Discussion

Elasticity (Log) Analyses

The concept of elasticity is useful to express the responsiveness of a quantity (market share) demanded to a change in a given variable (relative price). If the price elasticity of demand is greater than -1 , the demand curve is inelastic. This means that a 1 percent increase in price leads to less than a 1 percent decrease in the quantity demanded. If the price elasticity is between -1 and minus infinity (less than -1), the demand curve is elastic. A 1 percent increase in price leads to more than a 1 percent decrease in the quantity demanded. If the price elasticity equals -1 , demand is of unitary elasticity. Under these conditions, a 1 percent increase in price leads to a 1 percent fall in the quantity demanded. To summarize: "when demand is inelastic, it is relatively unresponsive to price changes; when demand is elastic, it is relatively responsive to price changes" (Quirk, 1976, p. 26).

The regression coefficients (B) of the log of relative price are the price elasticity measures for each category. Table 3 provides these coefficients for PRC competitors and for the aggregate of competitors and China. All coefficients in both analyses are significant ($p < .0005$). Among PRC competitors 17 of 21 categories have elastic demand curves; the regression coefficients are less than -1. The remaining four categories are characterized by inelastic demand. The aggregate of competitors and China follows the same pattern with the exception of one category: 333. The coefficient for the competitors is less than -1 (-1.05), and the aggregate's is greater than -1 (-.65); the difference however is minimal.

Regression coefficients for PRC imports are given in Table 3. They follow a different pattern than the cross-sectional competitors' coefficients. Elastic demand curves exist in only 9 of 21 PRC categories. These categories have regression coefficients less than -1. Both wool categories show this pattern, as well as half (3 of 6) of the man-made fiber categories and 4 of 13 cotton categories. The regression coefficients for these wool and man-made fiber categories are significant ($p < .05$), while only two of the regression coefficients for the cotton categories are significant. The nonsignificant coefficients of the remaining two cotton categories (320 and 337) are the

Table 3

Elasticity (Log) Analysis for 21 Selected Categories

Category	PRC Competitors ^a		All Countries ^b		PRC	
	B	Prob	B	Prob	B	Prob
315	-1.70	.0000	-1.69	.0000	-1.48	.0350
320	-1.92	.0000	-1.91	.0000	-1.35	.3950
333	-1.05	.0000	-0.68	.0001	2.79	.0001
334	-1.26	.0000	-1.23	.0000	3.42	.0016
335	-0.94	.0000	-0.81	.0000	2.81	.0154
337	-1.67	.0000	-1.69	.0000	-1.02	.5668
338	-0.65	.0000	-0.46	.0000	2.72	.0004
339	-1.26	.0000	-1.25	.0000	0.01	.9882
340	-1.05	.0000	-1.05	.0000	-0.76	.4283
341	-1.20	.0000	-1.25	.0000	-3.66	.0050
345	-1.16	.0000	-1.12	.0000	-0.65	.4408
347	-1.10	.0000	-1.08	.0000	0.04	.9339
348	-1.03	.0000	-1.01	.0000	0.51	.3949
445	-1.26	.0000	-1.37	.0000	-2.73	.0001
446	-1.34	.0000	-1.48	.0000	-3.82	.0001
635	-0.74	.0000	-0.81	.0000	-1.56	.0176
640	-1.23	.0000	-1.30	.0000	-5.08	.0076
641	-0.41	.0003	-0.66	.0000	-5.78	.0001
645	-1.39	.0000	-1.23	.0000	1.83	.1704
646	-1.27	.0000	-1.23	.0000	0.55	.3834
648	-1.36	.0000	-1.09	.0000	3.44	.0809

^aAll countries (except China) importing in that category for the 22 quarters studied.

^bPRC competitors and China.

least elastic among these nine PRC categories. Relative price (as measured by R-square) explains 25 percent or more of the variability in market share in six of these nine categories. These include all the wool and man-made fiber categories but only two of five cotton categories.

The remaining 12 PRC categories have inelastic demand curves; the regression coefficients are greater than -1 . Ten of these 12 categories have positive regression coefficients; four of these coefficients are significant ($p < .02$). The same four categories, covering cotton apparel, have R-squares greater than .25. The regression coefficients of the other eight inelastic demand categories are not significant, and the R-squares are all less than .25.

These results suggest that in the seven PRC categories with significant regression coefficients less than -1 , demand is elastic. A percentage decrease in price was accompanied by a greater percentage increase in demand. Four cotton categories have significant positive regression coefficients and are characterized by inelastic demand. An increase in price in these categories was associated with an increase in demand.

Possible explanations for this counter intuitive result may be that these items of apparel are attractive to consumers due to specific characteristics related to fiber

content, current fashion, status, or snob appeal. A careful examination of the categories at the TSUSA level might lend support to one or more of these explanations.

Results of the t-tests on competitor countries' elasticity and PRC's elasticity are given in Table 4. With the exception of category 315, the t values for all categories are significant. These results indicate that the elasticity measures for the PRC imports, which are the regression coefficients for the log of relative price, are significantly different than those of China's competitors. This would suggest that the relationship between price and market share which exists for the market as a whole does not exist for China as a single country in that market.

Regression (Linear) Analyses

The variability in market share which could be explained by the variables relative price (relpr), market share lagged one quarter (lag1), and market share lagged two quarters (lag2) was examined in the second analysis. Tables 5 and 6 summarize the results of the time-series cross-section analyses for PRC's competitors and the aggregate of competitors and China. Results for the variables relative price and lag1 are similar. The t probabilities for relative price are significant ($p < .05$) for 5 of 21 categories; 4 cotton categories and 1 wool category. All regression coefficients for relative price are

Table 4

Elasticity (Log) Analysis
 21 Selected Categories
 PRC---PRC Competitors

Category	T Value	df
315	-1.563	5
320	-6.019***	28
333	-21.905***	12
334	-50.107***	18
335	-31.381***	22
337	-4.130**	9
338	-30.470***	24
339	-11.189***	28
340	-11.738***	21
341	22.507***	29
345	-2.452*	8
347	-9.157***	23
348	-14.542***	27
445	10.500***	16
446	24.628***	20
635	8.668***	21
640	22.985***	13
641	46.982***	22
645	-14.557***	7
646	-14.773***	16
648	-36.895***	17

*p<.05.

**p<.01.

***p<.001.

Table 5

Regression (Linear) Analysis for 11 Selected Categories

Category	BRelPr	PRC Competitors ^a		BRelPr	All Countries ^b		BRelPr	PRC	
		BLag1	BLag2		BLag1	BLag2		BLag1	BLag2
315	-.0004 (.5677)	.8600 (.0000)	-.2563 (.0032)	-.0004 (.6530)	.7707 (.0000)	-.0512 (.5185)	-.7642 (.0798)	.2640 (.2451)	.1735 (.4140)
320	-.0031 (.0000)	.7943 (.0000)	-.0402 (.2966)	-.0027 (.0003)	.7921 (.0000)	-.0466 (.2724)	-.0335 (.7592)	.3019 (.3230)	.7469 (.0540)
333	-.0074 (.0181)	.2810 (.0000)	.0290 (.6156)	-.0086 (.0287)	.3662 (.0000)	.0621 (.3513)	.2263 (.0137)	.4228 (.0658)	.0460 (.8227)
334	-.0028 (.0006)	.6206 (.0000)	.0119 (.7919)	-.0025 (.0010)	.6734 (.0000)	.0509 (.2564)	.0802 (.3077)	.6675 (.0116)	.1937 (.4427)
335	-.0016 (.0762)	.6806 (.0000)	.1037 (.0153)	-.0018 (.0768)	.6199 (.0000)	.1093 (.0210)	.1222 (.2957)	.4159 (.2966)	.1710 (.0496)
337	-.0013 (.3452)	.7229 (.0000)	.0412 (.5413)	-.0019 (.1955)	.6388 (.0000)	.1973 (.0046)	-.3305 (.0377)	.4283 (.0496)	.6460 (.0110)
338	-.0028 (.0367)	.6858 (.0000)	-.0228 (.5737)	-.0028 (.0318)	.7072 (.0000)	.0119 (.7665)	-.0084 (.8938)	.6096 (.0262)	.2769 (.2490)
339	-.0013 (.1141)	.6827 (.0000)	.2116 (.0000)	-.0015 (.0908)	.7060 (.0000)	.1894 (.0000)	-.0358 (.7855)	.7033 (.0241)	-.1007 (.7394)
340	-.0009 (.2334)	.7402 (.0000)	.1174 (.0101)	-.0011 (.2094)	.6223 (.0000)	.2215 (.0000)	-.0689 (.4706)	.1800 (.4529)	.1721 (.4613)
341	-.0009 (.2693)	.5107 (.0000)	.2560 (.0000)	-.0010 (.2259)	.5428 (.0000)	.2249 (.0000)	-.0475 (.2526)	.9315 (.0004)	-.3590 (.1016)
345	-.0082 (.1775)	.6965 (.0000)	-.1312 (.0665)	-.0059 (.3370)	.7398 (.0000)	-.1209 (.0864)	-.0415 (.3097)	.8945 (.0088)	-.0022 (.9955)

Note. T probabilities are in () under values for regression coefficients.

^aAll countries (except China) importing in that category for the 22 quarters studied.

^bPRC competitors and China.

Table 6
Regression (Linear) Analysis for 10 Selected Categories

Category	PRC Competitors ^a			All Countries ^b			PRC		
	BRelPr	BLag1	BLag2	BRelPr	BLag1	BLag2	BRelPr	BLag1	BLag2
347	-.0013 (.2487)	.8458 (.0000)	.0040 (.9191)	-.0017 (.1807)	.7430 (.0000)	.1266 (.0015)	-.0994 (.1883)	.3497 (.1151)	.3852 (.0820)
348	-.0009 (.2861)	.9052 (.0000)	-.0327 (.4076)	-.0009 (.2665)	.8918 (.0000)	-.0147 (.7054)	.0219 (.6325)	.6730 (.0127)	.0358 (.8803)
445	-.0051 (.0150)	.5441 (.0000)	-.2007 (.0000)	-.0070 (.0044)	.5755 (.0000)	-.1413 (.0025)	-.1694 (.0027)	.4258 (.0309)	-.1388 (.4532)
446	-.0024 (.1413)	.6472 (.0000)	.1267 (.0049)	-.0038 (.0746)	.6410 (.0000)	.0556 (.2130)	-.1196 (.1299)	.4670 (.0496)	-.1525 (.4918)
635	-.0012 (.1466)	.6115 (.0000)	-.0070 (.8786)	-.0012 (.1356)	.6504 (.0000)	.0577 (.1998)	-.0082 (.7904)	.5776 (.0242)	.2559 (.3488)
640	-.0004 (.5569)	.8190 (.0000)	.1611 (.0042)	-.0006 (.3439)	.8110 (.0000)	.1682 (.0020)	-.0127 (.2008)	.4814 (.0275)	.5674 (.0205)
641	-.0022 (.0672)	.5656 (.0000)	.0501 (.2363)	-.0022 (.0515)	.6386 (.0000)	.1158 (.0066)	-.0206 (.2486)	.1139 (.6285)	.9780 (.0018)
645	-.0043 (.2744)	.6369 (.0000)	.0637 (.3803)	-.0042 (.2666)	.6502 (.0000)	.0551 (.4213)	.0189 (.8373)	.7436 (.0048)	-.2192 (.3931)
646	-.0011 (.3666)	.5443 (.0000)	-.0236 (.6467)	-.0011 (.3685)	.5179 (.0000)	.0313 (.5312)	.0385 (.6802)	.0897 (.7092)	.1470 (.5439)
648	-.0009 (.1553)	.8210 (.0000)	-.0394 (.4163)	-.0003 (.4621)	.9027 (.0000)	.0602 (.3642)	.1047 (.3572)	.4814 (.3905)	.8670 (.1695)

Note. T probabilities are in () under values for regression coefficients.
^aAll countries (except China) importing in that category for the 22 quarters studied.
^bPRC competitors and China.

negative in sign indicating that a decrease in the relative price was accompanied by an increase in market share.

Market share lagged one quarter (lag1) is significant ($p < .0001$) for both analyses for all categories studied. All regression coefficients are positive for this variable indicating a positive relation between lag1 and current period's market share. Lag2 shows some variation in significance and direction of the sign. For PRC competitors 8 of 12 categories are significant ($p < .05$); 5 of these are cotton, 2 are wool, and the remaining category is man-made fiber. For the aggregate of competitors and China, nine categories show significance ($p < .05$). In cotton categories 6 are significant; 4 of 6 are the same as in the competitors' analysis. One of the two wool categories is significant for the aggregate, and 2 man-made fiber categories; one the same as in the competitors' analysis. The direction of the sign for the regression coefficients for lag2 is negative in 14 out of 42 cases. This is probably due to multicollinearity between the two variables, lag1 and lag2. This may also be a reflection of the seasonal pattern of imports, and therefore might be eliminated if the quarters were aggregated into years in a longer time series.

The results for the regression analysis for imports from the People's Republic of China are presented in Tables 5 and 6. The combination of the three variables in the model

account for over 30 percent of the variability ($R^2 > .30$) in market share in 18 of 21 categories, and for over 50 percent ($R^2 > .50$) in almost two-thirds (13 of 21) of the categories. Only 2 cotton and 1 man-made fiber category have R-squares less than .30.

Examining the variables individually provides more detail about the variability in market share. Relative price alone is significant ($p < .05$) in only 3 of 21 categories, 2 cotton and 1 wool, while lag1 is significant in 12 of 21 categories; 7 cotton, 2 wool, and 3 man-made fiber. Lag2 is significant in 4 categories (2 cotton and 2 man-made fiber). Regression coefficients for all three variables are significant in only one category, 337, cotton playsuits. Relative price and lag1 are both significant in one category, 445, men's and boys' wool sweaters. Lag1 and lag2 are both significant in a single category, 640, men's and boys' man-made woven shirts.

The direction of the sign for the regression coefficients follows the pattern for the cross-sectional analyses for the variables lag1 and lag2. All regression coefficients for lag1 are positive; 6 of 15 for lag2 are negative. Multicollinearity probably explains these negative signs since the correlation between these two variables is high in the categories where the sign of the regression coefficients for market share lagged twice is

negative. It is therefore not possible to parcel out the individual effects between lag1 and lag2.

The variable which shows a different pattern is relative price. All relative price regression coefficients are negative for PRC competitors; for China 7 regression coefficients are positive and 14 are negative. This would indicate that in one-third of these categories an increase in price led to an increase in market share for Chinese goods.

Summary

The results of the time-series cross-section analyses for these selected categories are generally consistent with microeconomic theory, despite the distortions (e.g. quotas) which exist in this market. Demand for most of these commodities is price sensitive, and there is a significant relationship between relative price and market share for imports from countries active in the U.S. market. Of the variables studied, the previous period's market share (lag1) is the most consistently significant in explaining the variability in the current period's market share. The present period's relative price (relpr) and market share lagged two quarters (lag2) are not nearly as good predictors as lag1. There is no discernable pattern of prediction (by fiber content or by men's or women's apparel) for those categories in which relative price and lag2 are significant.

Results of the time-series cross-section analysis changed very little when PRC imports were added and the aggregate then analyzed. This would suggest that the PRC's presence in the world market has not upset its basic adherence to expected economic patterns.

However, when PRC imports were analyzed on a micro level, differences did appear. These differences seem scattered throughout the 21 categories. They could not be attributed to a specific fiber type or garment type. On the individual category level, the demand for 9 of 21 can be described as elastic.

Government and industry officials have often contended that the PRC uses pricing strategies to enter the American market and gain market share. The Chinese government has the power to set prices, and it is frequently accused of selling goods at prices below production costs to gain foreign exchange and employ its people. The results of this study raise questions about this conclusion. In 10 of 21 categories studied the sign of the regression coefficient of the log of relative price was positive, indicating that an increase in price led to an increase in market share.

The results of the linear regression analysis suggest that for these selected categories the combination of relative price (relpr), market share lagged one quarter (lag1), and market share lagged two quarters (lag2) is a

significant predictor of the current period's market share; but relative price alone is an unreliable predictor. Relative price is significant in only three categories, while lag1 is significant in 12 categories, and lag2 in four. The number of significant categories for each variable is fewer for the PRC than for its competitors, but the pattern of prediction in terms of strength of predictor variables is consistent.

Based on these analyses, the assumption that price is the major factor in determining market share for Chinese textile and apparel imports cannot be supported. This research suggests the need to look beyond price to other factors which might be responsible for the success the Chinese have enjoyed in the American market.

Chapter V

OBJECTIVE THREE

The the third objective was to determine the effect of the growth in imported textile and apparel products from the PRC on the market shares of 1) U.S. manufacturers, 2) the People's Republic of China, and 3) all other countries importing to the United States. The market share of U.S. CONSUMPTION rather than the market share of IMPORTS into the United States was examined in the final objective.

Methodology

Separate analyses were done for 21 categories in which Chinese imports are either presently active or controlled by unilateral agreement. A profile for each category shows the market shares of the three subjects from 1976 through 1981.

The market share for American manufacturers was expressed as a production-consumption ratio, that is U.S. production divided by the total quantity of imports plus U.S. production:

$$\frac{\text{U.S. Production}}{\text{Total Imports} + \text{U.S. Production.}}$$

The market shares of the PRC and the other importing countries were expressed as an import-consumption ratio,

that is the quantity imported by the subject divided by the total quantity of imports plus U.S. production:

$$\frac{\text{Subject's Imports}}{\text{Total Imports + U.S. Production.}}$$

Following the pattern used by the United States International Trade Commission, exports were not subtracted to arrive at apparent consumption (Emerging Textile-Exporting, 1982, p. A-27). Table 7 illustrates why exports cannot be subtracted on the category level. Government statistics are collected for different types of apparel in varying detail depending on the policy purpose of the classification. If a skirt is classified for statistical purposes, it can be placed in one of two categories as domestic output; in one of eight categories as an export; and as an import into the United States, it can be classified under any one of 34 gradations on the Tariff Schedule of the United States Annotated (TSUSA). This classification system makes estimating apparel consumption possible only on a macro level. It is important to note that there are relatively few exports to be subtracted from many categories, and their inclusion, even if possible, would probably change the final ratios very little.

Data for these analyses were obtained from the Textile Information Management System data base which consists of

Table 7

Comparison of SIC Codes (Domestic Output)
Export Codes, and Import Codes

Type of Garment: Skirt

Domestic Output: 2337410

2369003

Exports: 383.0400 383.4400

383.1400 383.5400

383.2400 383.6400

383.3400 383.7400

Imports: 382.0028 382.3338 382.4276

382.0080 382.3339 382.5425

382.0082 382.3340 382.5840

382.0215 382.3341 382.6035

382.0265 382.3342 382.6335

382.0446 382.3343 382.7831

382.0476 382.3344 382.7861

382.0675 382.3912 382.7863

382.3334 382.3942 382.8183

382.3335 382.3972 382.8184

382.3336 382.4216

382.3337 382.4246

three component data files: textile and apparel imports into the U.S.; United States' textile and apparel exports; and selected domestic textile and apparel production, employment, and market information. SAS (Statistical Analysis System) procedures were used to depict graphically the changes in market shares. Overlay graphs for each category show the percentage of consumption supplied to the U.S. market by the domestic industry, the PRC, and other importing countries (Figures 15 to 35). Tables (8 to 28) for each category provide information on production, imports, market shares, and consumption.

Discussion

Category 315 Cotton Printcloth

In this category consumption patterns varied considerably during the period from 1976 to 1981. Consumption of cotton printcloth in the United States declined 35 percent between 1976 and 1980 from 893 SYE's (thousand square yard equivalents) in 1976 to 583 SYE's by 1980 (Table 8). Printcloth consumption then rose from 583 SYE's in 1980 to 703 SYE's in 1981, an increase of 21 percent. U.S. production declined by 46 percent from 760 SYE's in 1976 to 410 SYE's in 1981 (Table 8). The total market share lost was 27 percent by 1981. The U.S. gained market share at the expense of the other importing countries

Table 8

U.S. Market Share Comparison 1976-1981

CATEGORY 315: COTTON PRINTCLOTH

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	760	770	694	606	495	410
Market Share	85.10	93.88	80.96	85.43	84.81	58.27
PRC Imports	.1	.0	.1	.1	.1	.1
Market Share	.01	.00	.01	.01	.01	.02
Other Imports	133.0	50.1	163.0	103.3	88.6	293.3
Market Share	14.89	6.12	19.03	14.56	15.18	41.71
Total Imports	133	50	163	103	89	293
Market Share	14.90	6.12	19.04	14.57	15.19	41.73
Total Consumption	893	820	857	709	583	703

DESCRIPTION OF TABLE

Quantities are measured in thousands of square yard equivalents (SYE).

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

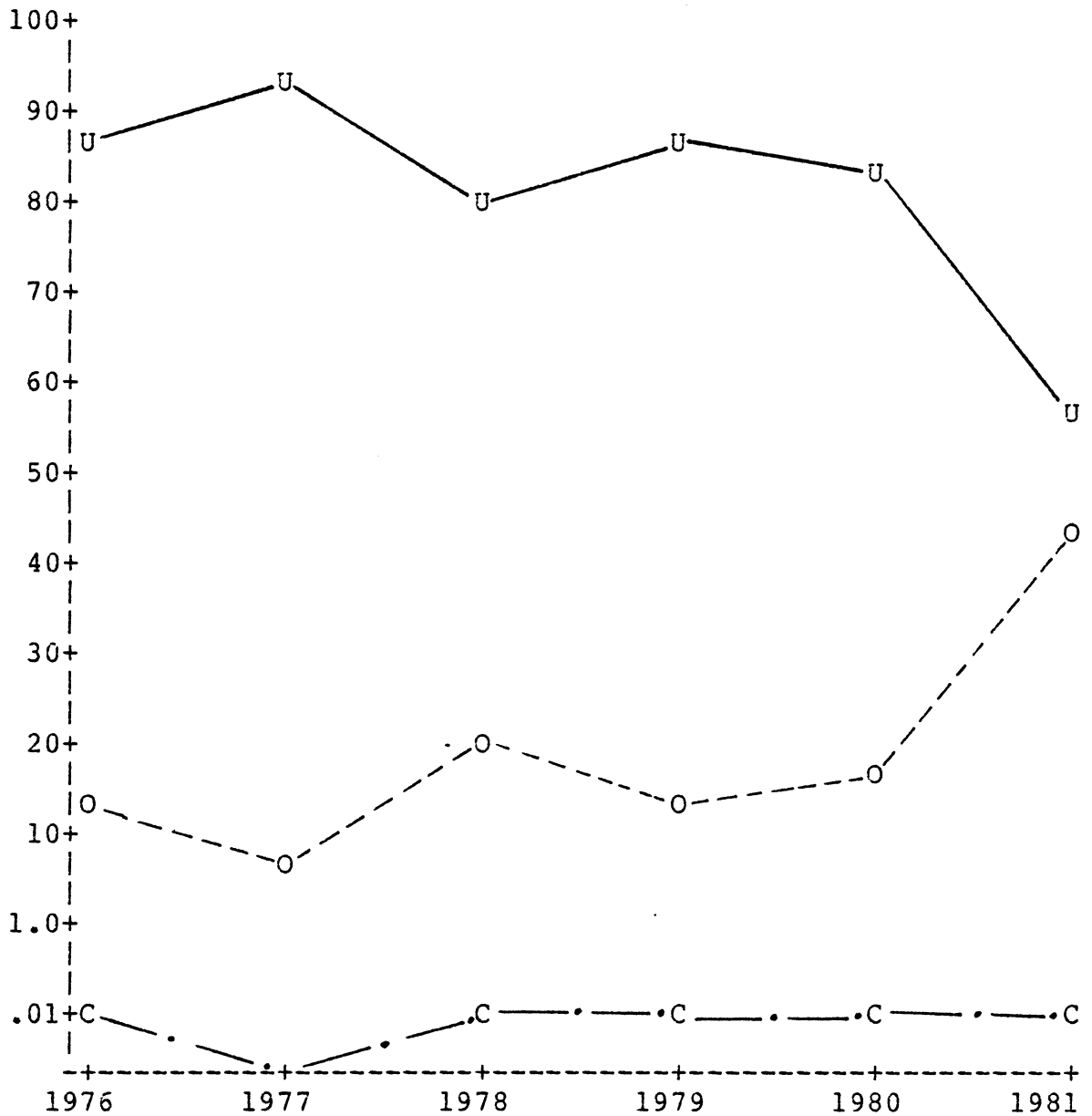


Figure 15. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 315: Cotton Printcloth

U: United States _____
 C: People's Republic of China ———.
 O: Other Importing Countries -----

in 1977; then lost all it had gained and more in 1978. In 1979 the balance was restored, and remained through 1980. The biggest loss for U.S. producers occurred in 1981 when the other importing countries increased their market share from 15 to 42 percent. Throughout the period the PRC's share remained insignificant, from a low of no market share in 1978 to a high of .02 percent in 1981. (Figure 15; Table 8.)

Category 320 Cotton Fabrics

This category showed some small fluctuation, but the market share for the United States ended the period almost unchanged from 1976. Consumption declined in this category by 14 percent from 2257 SYE's in 1976 to 1935 SYE's in 1981 (Table 9). Production decreased by 15 percent (2079 SYE's to 1776 SYE's), and imports dropped 11 percent (from 178 SYE's to 159 SYE's in 1981). From 1977 to 1978 the U.S. lost 3 percent of its market share to the other importing countries, but this loss was regained by 1980. From 1976 to 1981 the other importing countries lost almost 3 percent of their share to the PRC whose share increased from .32 to 3.21 percent. (Figure 16; Table 9.)

Table 9

U.S. Market Share Comparison 1976-1981

CATEGORY 320: COTTON FABRICS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	2079	2329	2178	2109	1976	1776
Market Share	92.09	93.98	90.60	92.91	93.71	91.81
PRC Imports	7.2	1.4	3.3	2.4	16.8	62.1
Market Share	.32	.06	.14	.11	.79	3.21
Other Imports	171.2	147.8	222.6	158.5	116.0	96.4
Market Share	7.59	5.96	9.26	6.98	5.50	4.98
Total Imports	178	149	226	161	133	159
Market Share	7.91	6.02	9.40	7.09	6.29	8.19
Total Consumption	2257	2479	2404	2270	2109	1935

DESCRIPTION OF TABLE

Quantities are measured in thousands of square yard equivalents (SYE).

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

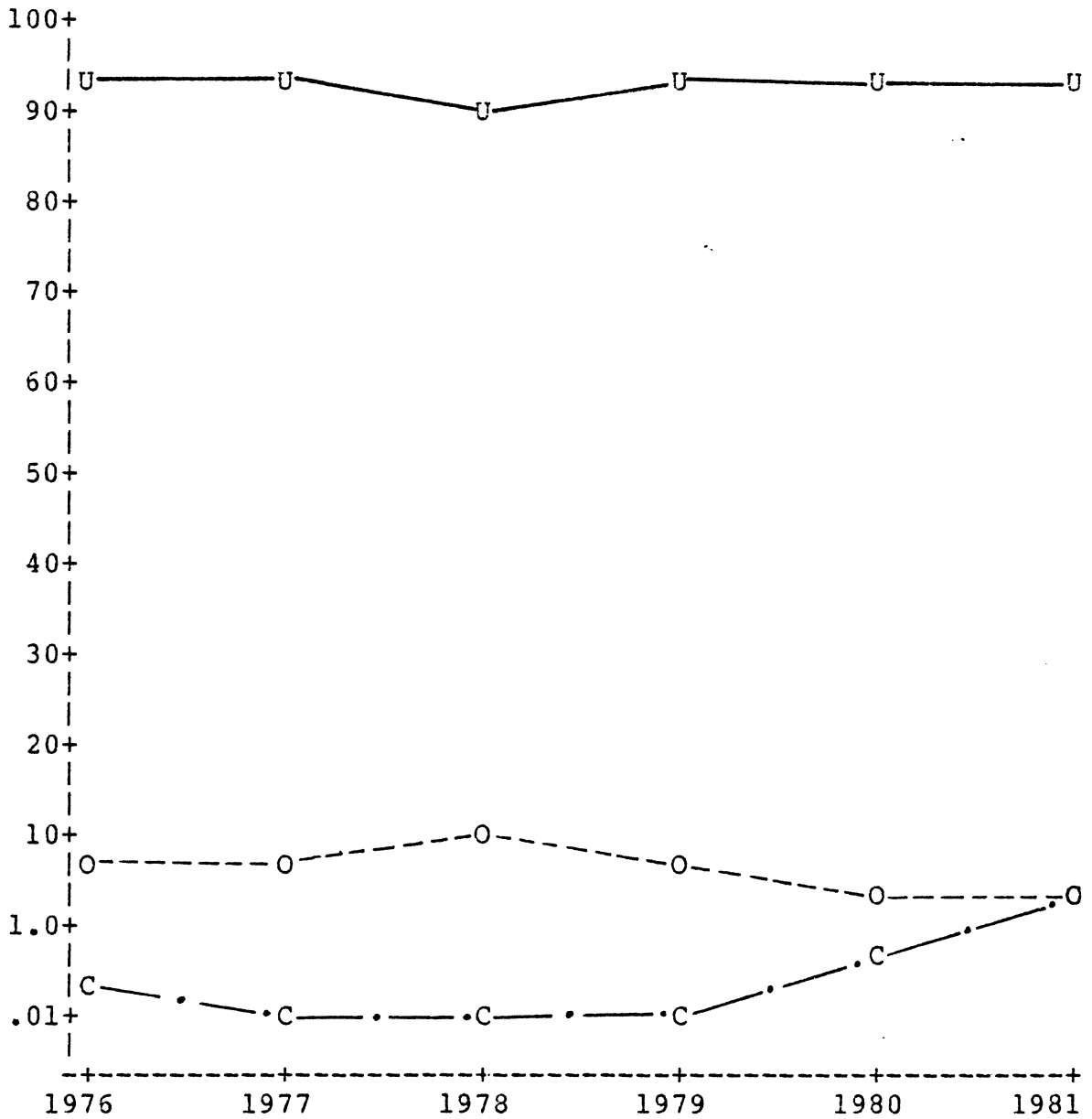


Figure 16. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 320: Cotton Fabrics

U: United States———
 C: People's Republic of China ———.
 O: Other Importing Countries-----

Category 333 Men's and Boys' Cotton Suit Type Coats

This category reflected both changes in consumption patterns and imports from 1976 to 1981. Consumption fell by more than 60 percent from 755 (1,000 dozen) to 283 (1,000 dozen) by 1981 (Table 10). The decrease in U.S. production was almost 80 percent from a high of 489 (1,000 dozen) in 1976 to a low of 107 (1,000 dozen) by 1981. Imports fell by 33 percent. The other importing countries steadily gained market share from the United States from 1976 to 1978, increasing their share from 35 percent to 53 percent. In 1979 the U.S. regained over two-thirds of its loss, only to lose over half of that again the following year. In 1980 the PRC made its presence known in the market. The U.S. lost 9 percent of the market in that year; 6 percent was taken by the PRC and 3 percent by the other importing countries. The final figures for market shares show that the U.S. lost 27 percent of its market share from 1976 to 1981. The other importing countries picked up 19 percent of this loss, and the PRC gained the remaining 8 percent. (Figure 17; Table 10.)

Category 334 Men's and Boys' Cotton (not suit) Coats

Data for this period showed that U.S. manufacturers of men's and boys' cotton (not suit) coats were especially vulnerable to imports during a time of decreasing

Table 10

U.S. Market Share Comparison 1976-1981

CATEGORY 333: MEN'S & BOYS' COTTON SUIT COATS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	489	284	265	302	194	107
Market Share	64.77	53.58	46.49	59.68	51.19	37.81
PRC Imports	1.3	1.4	2.7	5.1	23.7	22.8
Market Share	.17	.27	.47	1.00	6.25	8.06
Other Imports	264.7	244.6	302.3	198.9	161.3	153.2
Market Share	35.06	46.15	53.04	39.32	42.56	54.13
Total Imports	266	246	305	204	185	176
Market Share	35.23	46.42	53.51	40.32	48.81	62.19
Total Consumption	755	530	570	506	379	283

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

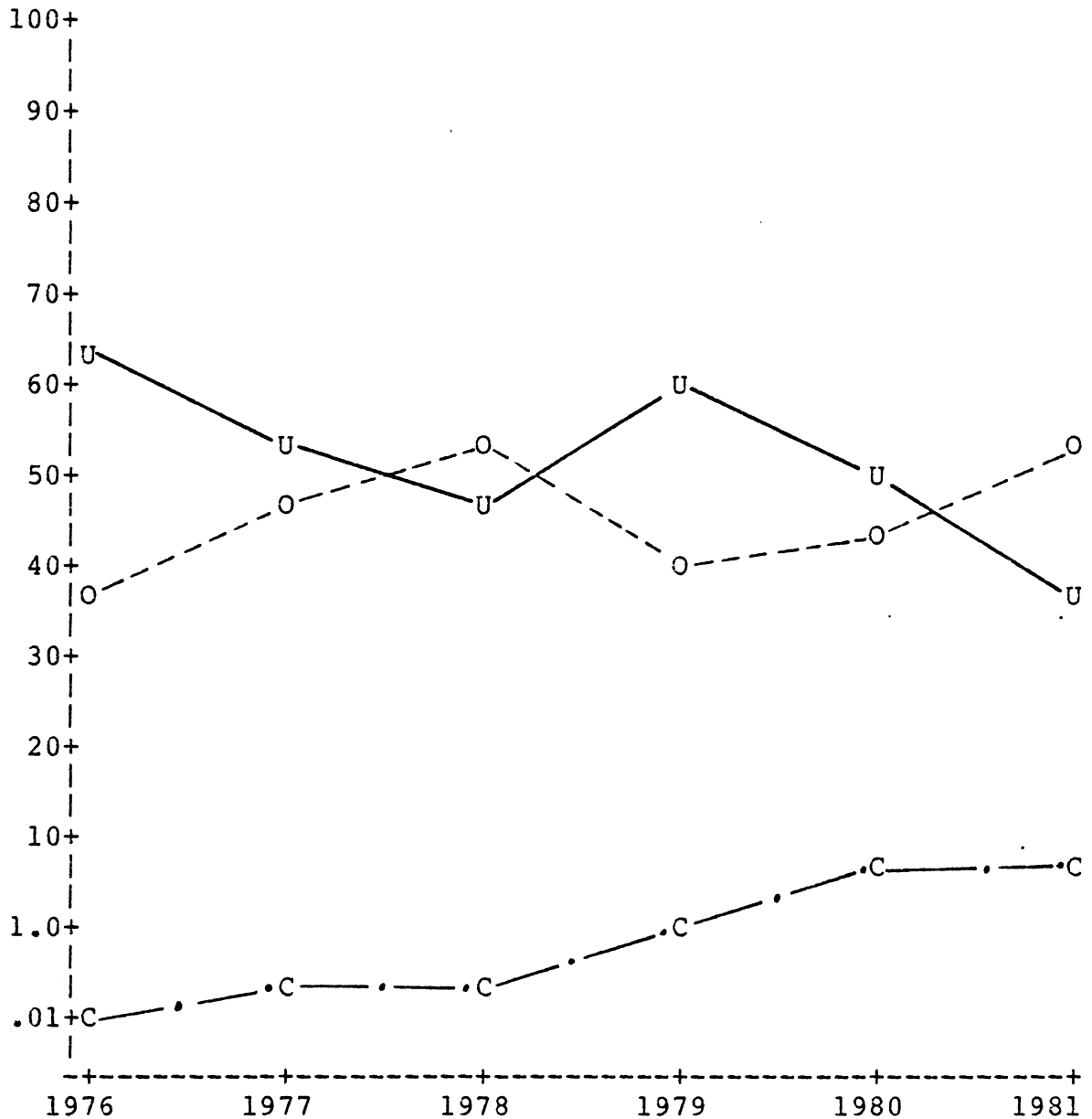


Figure 17. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 333: Men's and Boys' Cotton Suit Coats

U: United States —————
 C: People's Republic of China ———•———
 O: Other Importing Countries ————

consumption. Consumers purchased 43 percent fewer garments in this category in 1981 than they had in 1976. The market which remained was increasingly shared with importers. U.S. production fell by over 60 percent from 1976 to 1981, while imports more than doubled in quantity. With the exception of 1979, the pattern for the U.S. was one of steadily decreasing market share, while the other importing countries were steadily gaining. In 1979 the PRC increased its share to 2 percent and more than tripled that to 7 percent in 1980. The final figures show that the U.S. lost 41 percent of the market, 11 percent to the PRC, and the remaining 30 percent to other importing countries. (Figure 18; Table 11.)

Category 335 Women's, Girls' and Infants' Cotton Coats

This category reflects a pattern similar to that in category 334 from 1976 to 1980, but in 1981 consumption, production, and imports all increased over 1980. Over the entire period U.S. production decreased by 47 percent while imports rose by 59 percent. The U.S. steadily lost market share each year for a total loss of 36 percent. The other importing countries increased their share from 1976 to 1979 from 37 percent to 61 percent. The PRC slowly increased its share as well, and in 1980 it gained market share from both the U.S. and the other countries. From 1979 to 1980 the PRC's share increased by 7 percent, and from 1980 to 1981 by

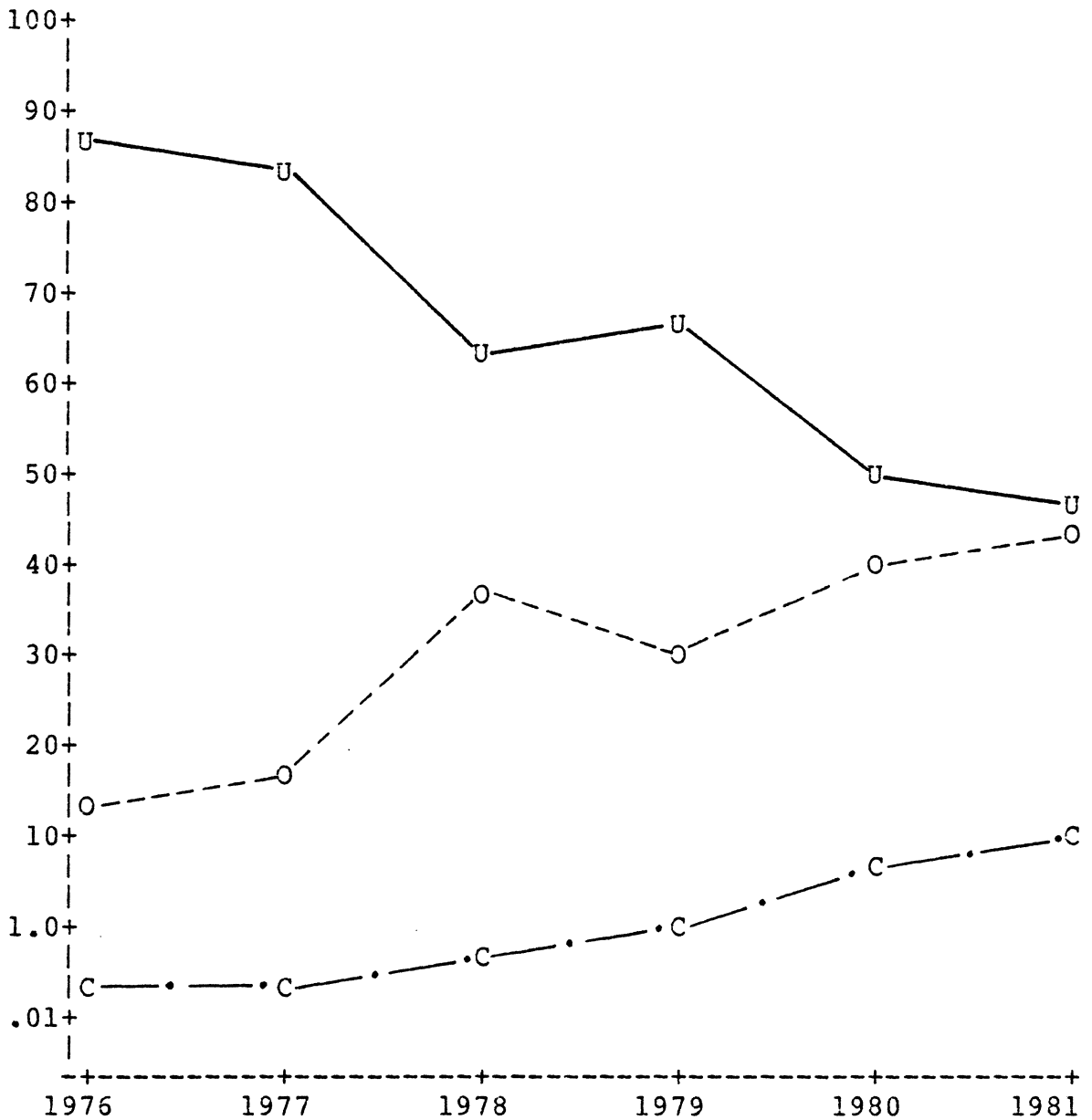


Figure 18. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 334: Men's and Boys' Cotton Coats

U: United States———
 C: People's Republic of China——.—.
 O: Other Importing Countries-----

Table 11

U.S. Market Share Comparison 1976-1981

CATEGORY 334: MEN'S & BOYS' COTTON COATS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	2880	2366	1390	1250	965	867
Market Share	87.09	83.63	63.85	66.95	51.66	46.04
PRC Imports	7.6	5.2	13.3	39.9	130.6	203.4
Market Share	.23	.18	.61	2.14	7.01	10.78
Other Imports	419.4	457.8	773.7	577.1	772.4	812.6
Market Share	12.68	16.19	35.54	30.91	41.33	43.18
Total Imports	427	463	787	617	903	1016
Market Share	12.91	16.37	36.15	33.05	48.34	53.96
Total Consumption	3307	2829	2177	1867	1868	1883

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

almost 7 percent more. The 7 percent gain in 1980 came at the expense of U.S. producers; in 1981 the additional market share was taken from the other importing countries.

(Figure 19; Table 12.)

Category 337 Cotton Playsuits

The consumption of cotton playsuits decreased by 9 percent from 1976 to 1981. U.S. production declined 30 percent while imports increased 112 percent. In 1977 the U.S. share of the market decreased from 85 percent to 73 percent; it increased slightly in 1978, then steadily declined to 66 percent in 1981. This 19 percent loss was shared by the PRC and the other importing countries. The PRC's market share doubled from 1978 to 1979 and then almost doubled again from 1979 to 1980 and from 1980 to 1981. Its share in 1981 was 11 percent. The remaining 8 percent of market share was gained by the other importing countries whose share increased during the period from 14 percent to 23 percent. The final year of this category showed a pattern somewhat like that of 335. The PRC's gain in 1981 came less at the expense of the United States and more at the expense of the other importing countries. (Figure 20; Table 13.)

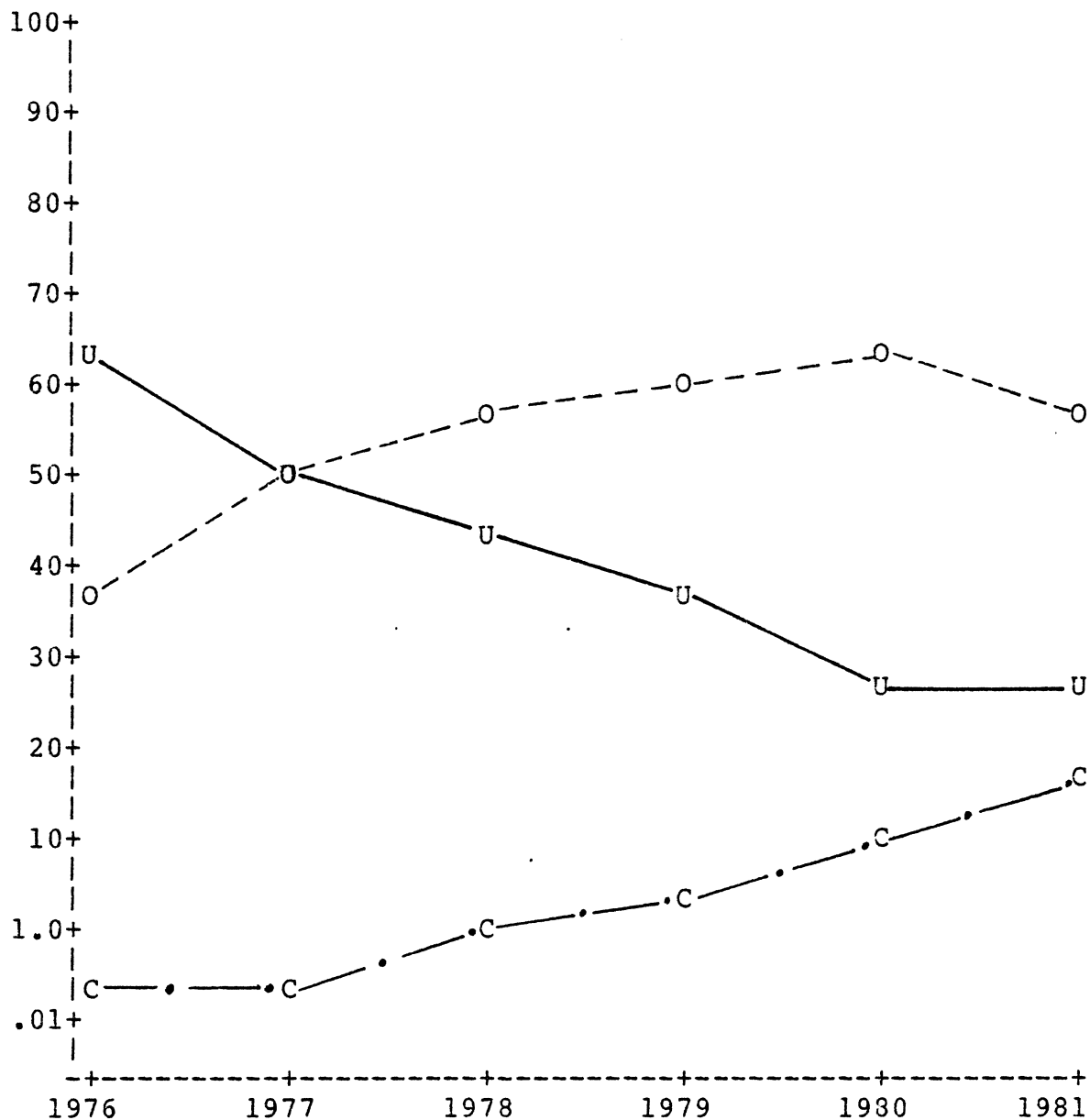


Figure 19. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 335: Women's & Girls' Cotton Coats

U: United States —————
 C: People's Republic of China —•—•—
 O: Other Importing Countries ————

Table 12

U.S. Market Share Comparison 1976-1981

CATEGORY 335: WOMEN'S & GIRLS' COTTON COATS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	1212	776	728	576	516	647
Market Share	62.51	48.87	42.57	36.18	26.92	26.66
PRC Imports	5.7	5.5	21.8	52.7	183.6	403.8
Market Share	.30	.35	1.28	3.31	9.58	16.64
Other Imports	721.3	806.5	960.1	963.3	1217.4	1376.2
Market Share	37.19	50.78	56.15	60.51	63.50	56.70
Total Imports	727	812	982	1016	1401	1780
Market Share	37.49	51.13	57.43	63.82	73.08	73.34
Total Consumption	1939	1588	1710	1592	1917	2427

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

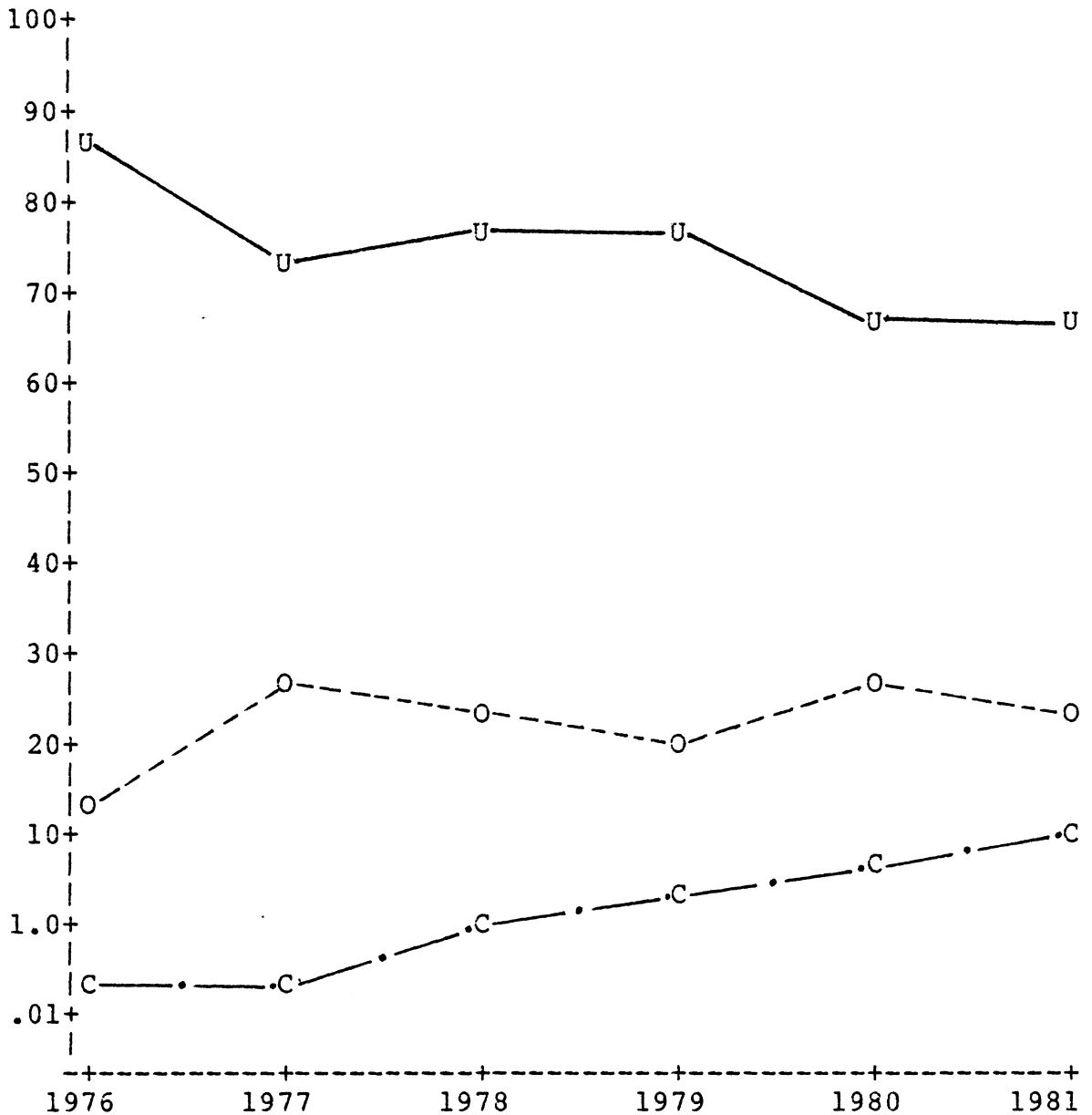


Figure 20. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 337: Cotton Playsuits

U: United States———
 C: People's Republic of China——.——.
 O: Other Importing Countries-----

Table 13

U.S. Market Share Comparison 1976-1981

CATEGORY 337: COTTON PLAYSUITS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	4775	2833	3240	3231	2958	3353
Market Share	85.48	73.26	76.72	75.11	68.14	66.12
PRC Imports	22.8	17.7	58.2	132.2	248.2	572.1
Market Share	.41	.46	1.38	3.06	5.71	11.28
Other Imports	788.2	1016.3	924.8	938.8	1134.8	1145.9
Market Share	14.11	26.28	21.90	21.83	26.15	22.60
Total Imports	811	1034	983	1071	1383	1718
Market Share	14.52	26.74	23.28	24.89	31.86	33.88
Total Consumption	5586	3867	4223	4302	4341	5071

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

Category 338 Men's and Boys' Cotton Knit Shirts

The changes in this category were in the same direction as those in 335 and 337, but the magnitude was less. Consumption declined by 7 percent; U.S. production was down by 21 percent; imports rose 90 percent. The trend for the U.S. share was downward, while the other countries share steadily increased, with the exception of the period from 1976 to 1977. The PRC's market share increased as well, but its final share was only 3 percent. That was part of the 13 percent loss of market share suffered by U.S. manufacturers; the remaining 10 percent was gained by the other importing countries, whose share rose from 13 percent to 23 percent by 1981. (Figure 21; Table 14.)

Category 339 Women's, Girls' and Infants' Cotton Knit Shirts

Manufacturers of cotton knit shirts for women and girls suffered smaller losses to importers than those who produced similar garments for men and boys from 1976 to 1981. Consumption of these shirts decreased 11 percent for women and girls. The U.S. produced 22 percent less; 7 percent more were imported. U.S. lost market share from 1976 to 1979; in 1980 its share rose 3 percent. Final figures show a loss of 8 percent of the market by the United States, 3 percent gained by the PRC and 5 percent by the other importing countries. (Figure 22; Table 15.)

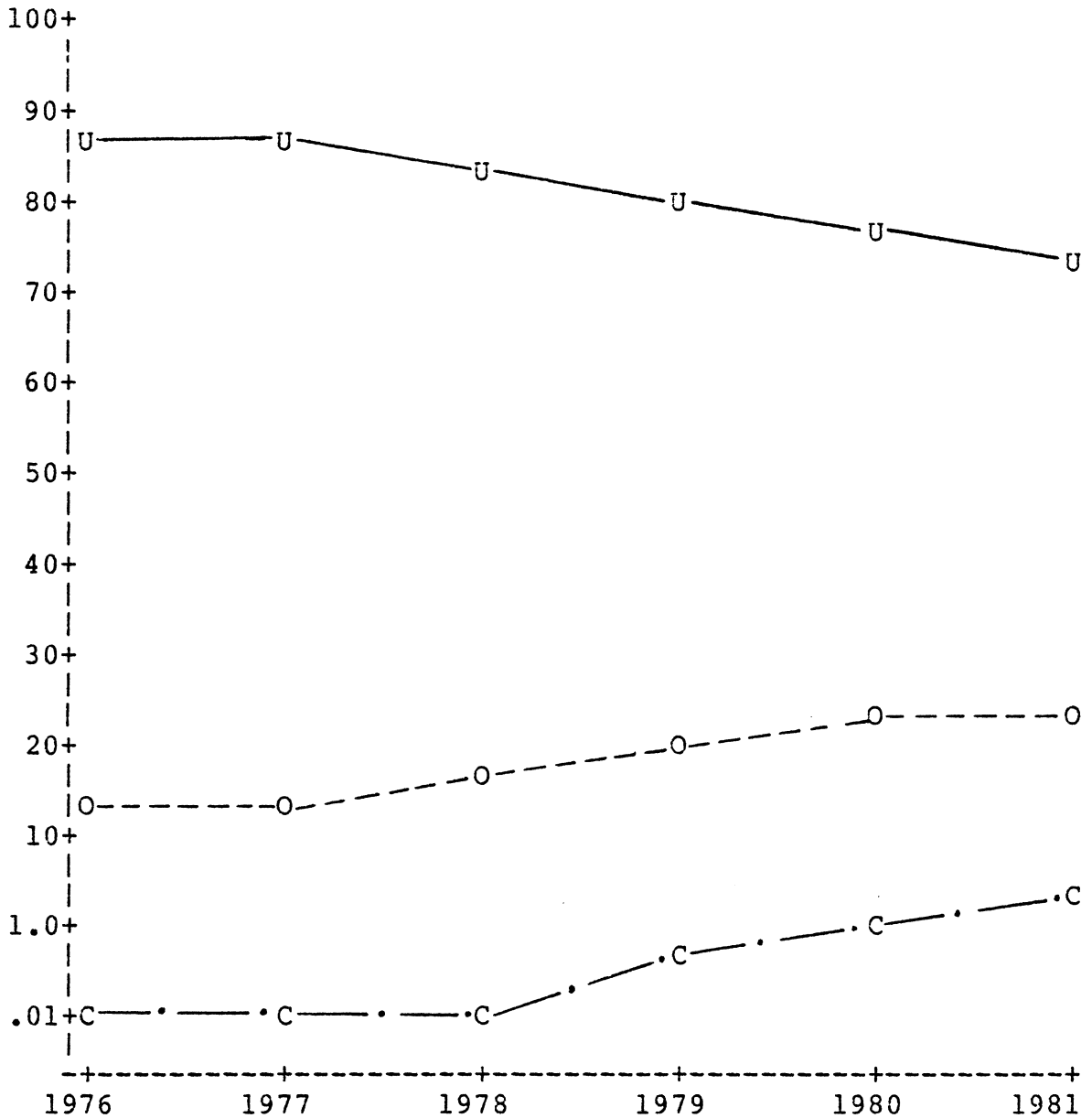


Figure 21. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 338: Men's and Boys' Cotton Knit Shirts

U: United States —————
 C: People's Republic of China ————
 O: Other Importing Countries ————

Table 14

U.S. Market Share Comparison 1976-1981

CATEGORY 338: MEN'S & BOYS' COTTON KNIT SHIRTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	22855	23211	23000	20672	16927	18033
Market Share	86.81	87.18	82.58	80.19	75.84	73.26
PRC Imports	15.2	11.1	28.9	165.6	417.1	802.6
Market Share	.06	.04	.10	.64	1.87	3.26
Other Imports	3458.8	3440.9	4824.1	4940.4	4973.9	5781.4
Market Share	13.13	12.78	17.32	19.17	22.29	23.48
Total Imports	3473	3412	4853	5106	5391	6584
Market Share	13.19	12.82	17.42	19.81	24.16	26.74
Total Consumption	26329	26623	27853	25778	22318	24617

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

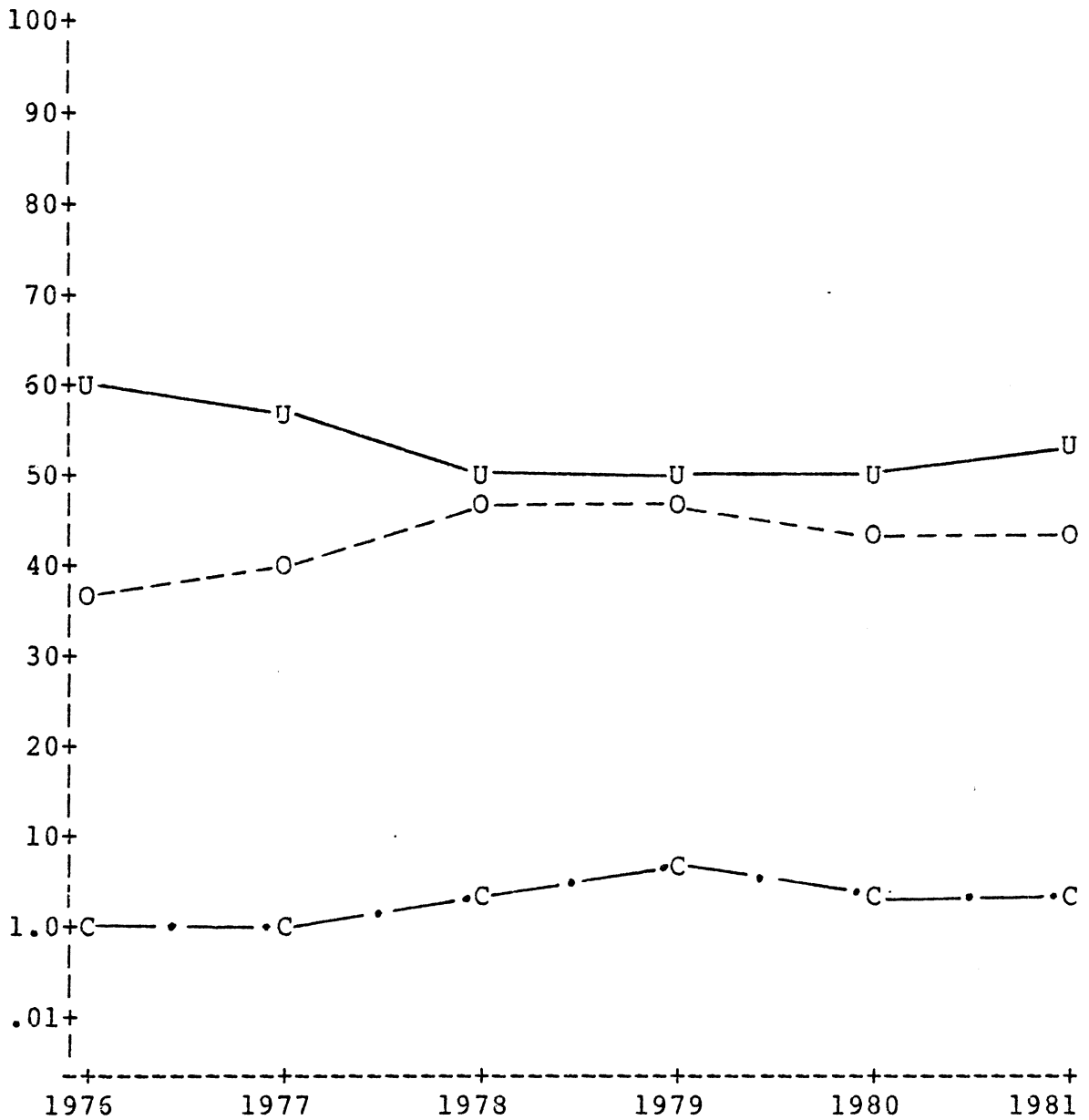


Figure 22. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 339: Women's and Girls' Cotton Knit Shirts

U: United States _____
 C: People's Republic of China _____.
 O: Other Importing Countries-----

Table 15

U.S. Market Share Comparison 1976-1981

CATEGORY 339: WOMEN'S & GIRLS' COTTON KNIT SHIRTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	10213	9077	8375	8254	7610	7969
Market Share	60.74	57.32	49.03	48.60	51.60	53.02
PRC Imports	221.3	337.6	483.1	992.0	702.9	508.6
Market Share	1.32	2.13	2.83	5.84	4.77	3.38
Other Imports	6378.7	6422.4	8222.9	7736.0	6435.1	6553.4
Market Share	37.94	40.55	48.14	45.56	43.63	43.60
Total Imports	6600	6760	8706	8728	7138	7062
Market Share	39.26	42.68	50.97	51.40	48.40	46.98
Total Consumption	16813	15837	17081	16982	14748	15031

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

Category 340 Men's and Boys' Cotton Woven Shirts

The market share lost from 1976 to 1981 by U.S. manufacturers of woven cotton shirts for men and boys was greater than that for knit cotton shirts by 13 percent. U.S. producers manufactured 52 percent fewer shirts during a period when consumption declined by 20 percent, and imports rose by 44 percent. Most of the 26 percent loss of market share suffered by U.S. producers went to other importing countries. The PRC's gain was less than 3 percent from 1.6 percent of the market in 1976 to 4.40 percent in 1981. In contrast, the other countries increased their share from 32 percent in the beginning of the period to a high of 55 percent in 1981. (Figure 23; Table 16.)

Category 341 Women's, Girls' and Infants' Cotton Woven Shirts

This category showed a different pattern than the preceeding category for men's and boys' woven cotton shirts. Consumption of woven cotton shirts for women and girls increased by 79 percent from 1976 to 1981. U.S. production increased 155 percent, while the quantity of woven cotton shirts imported rose by 21 percent. From 1976 to 1980 U.S. manufacturers lost 7 percent of their market share. This loss was captured almost entirely by the PRC. Its share rose by 6 percent from 1976 to 1980; the other importing

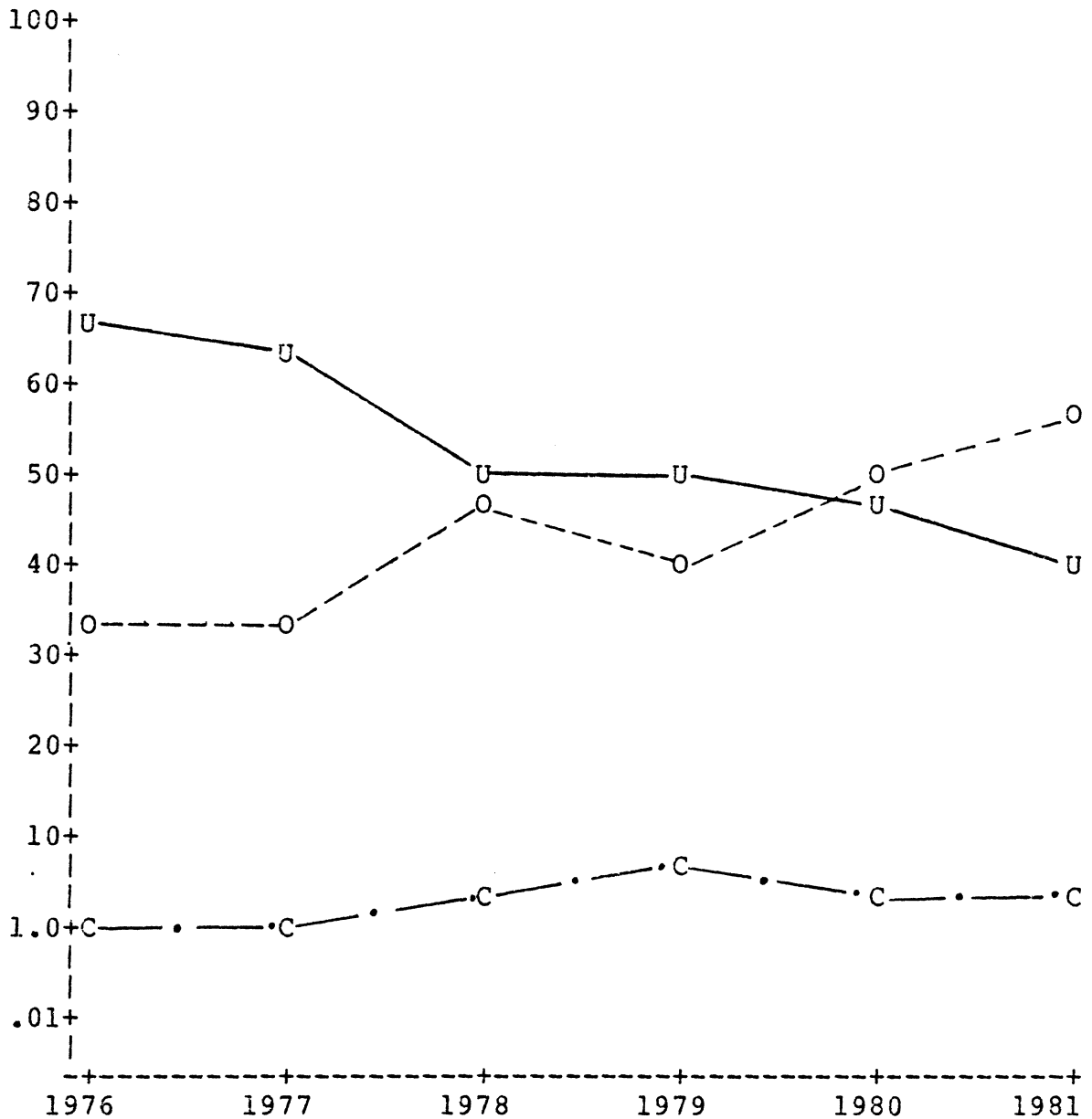


Figure 23. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 340: Men's and Boys' Cotton Woven Shirts

U: United States —————
 C: People's Republic of China ———.—
 O: Other Importing Countries ————

Table 16

U.S. Market Share Comparison 1976-1981

CATEGORY 340: MEN'S & BOYS' COTTON WOVEN SHIRTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	8812	8470	5912	7073	5526	4268
Market Share	66.45	64.73	50.66	51.65	46.67	40.06
PRC Imports	208.3	186.7	325.2	1056.7	408.2	473.0
Market Share	1.57	1.43	2.79	7.72	3.45	4.44
Other Imports	4241.7	4429.3	5432.8	5563.3	5906.8	5914.0
Market Share	31.98	33.84	46.55	40.63	49.88	55.50
Total Imports	4450	4616	5758	6620	6315	6387
Market Share	33.55	35.47	49.34	48.35	53.33	59.94
Total Consumption	13262	13086	11670	13693	11841	10655

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

countries increased their share by only 1 percent. The U.S. producers rebounded strongly in 1981 reversing their down trend, and increased their share by 25 percentage points. The PRC's share decreased by 5 percent and the other importing countries lost the remaining 20 percent. (Figure 24; Table 17.)

Category 345 Cotton Sweaters

The PRC's share of this market tripled from 1976 to 1981, but its final share was just over 3 percent. From 1976 to 1978 the U.S. and the other importing countries' shares remained stable, while the PRC's declined slightly. In 1979 the U.S. market share declined 23 percent, and the other importing countries' share increased 22 percent. The U.S. regained 17 percent in 1980 and increased its share to 57 percent by 1981. During this period the other importing countries lost 10 percent of their market share; the U.S. gained 7 percent and the PRC 3 percent. Consumers bought 31 percent more cotton sweaters in 1981 than they did in 1976. Over the entire period imports increased 12 percent, while U.S. production increased 48 percent. (Figure 25; Table 18.)

Category 347 Men's and Boys' Cotton Trousers

This category showed growth in consumption of 10 percent during this period. U.S. producers increased their

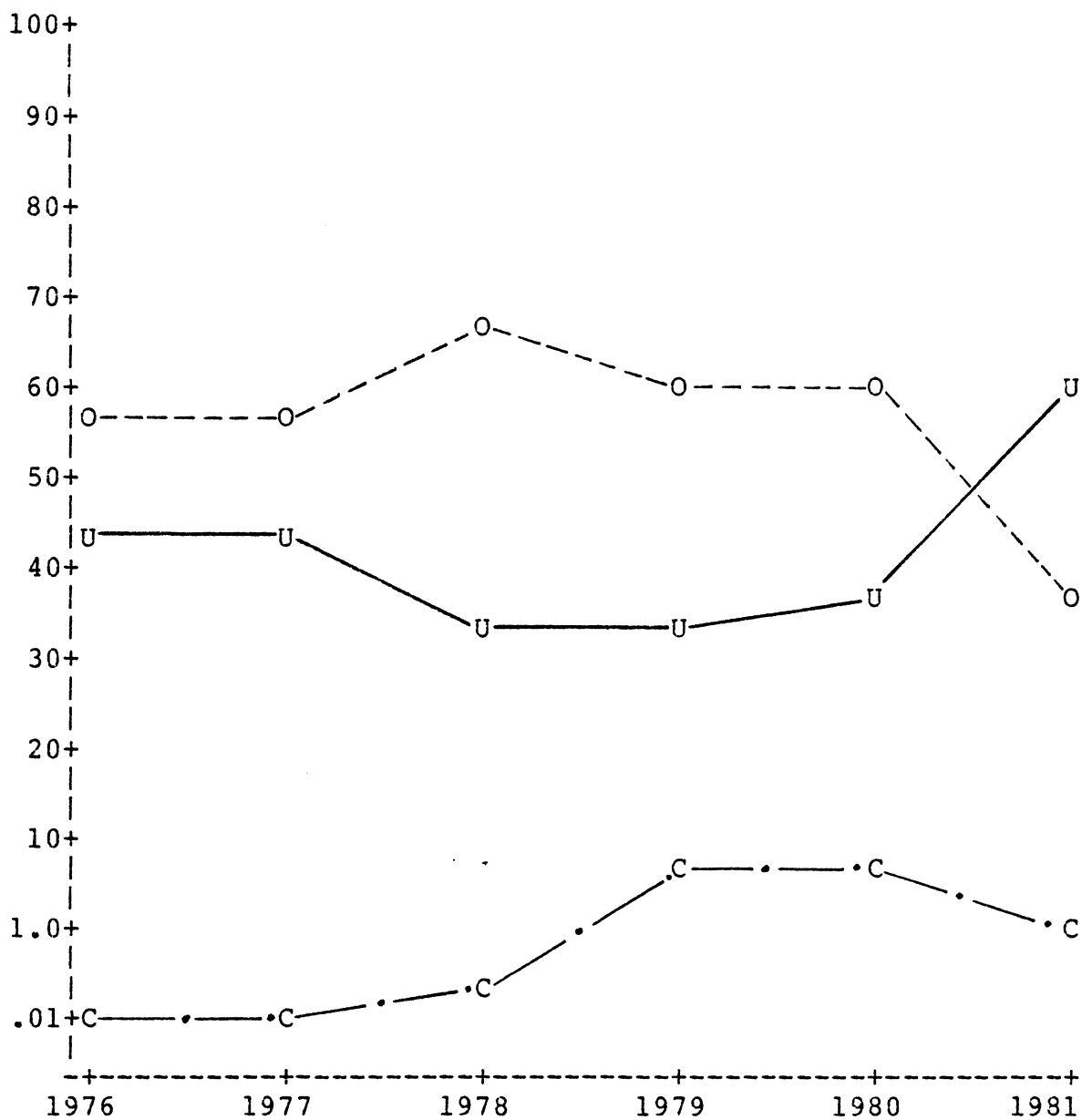


Figure 24. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 341: Women's and Girls' Cotton Woven Shirts

U: United States —————
 C: People's Republic of China ———.—
 O: Other Importing Countries ————

Table 17

U.S. Market Share Comparison 1976-1981

CATEGORY 341: WOMEN'S & GIRLS' COTTON WOVEN SHIRTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	2688	2810	2833	3117	3409	6862
Market Share	42.96	42.50	32.73	32.16	36.20	61.38
PRC Imports	3.0	6.3	42.2	619.1	546.9	139.1
Market Share	.05	.10	.49	6.39	5.81	1.24
Other Imports	3566.0	3795.7	5779.8	5956.9	5460.0	4177.9
Market Share	56.99	57.40	66.78	61.45	58.62	37.38
Total Imports	3569	3802	5822	6576	6007	4317
Market Share	57.04	57.50	67.27	67.84	64.43	38.62
Total Consumption	6257	6612	8655	9693	9416	11179

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

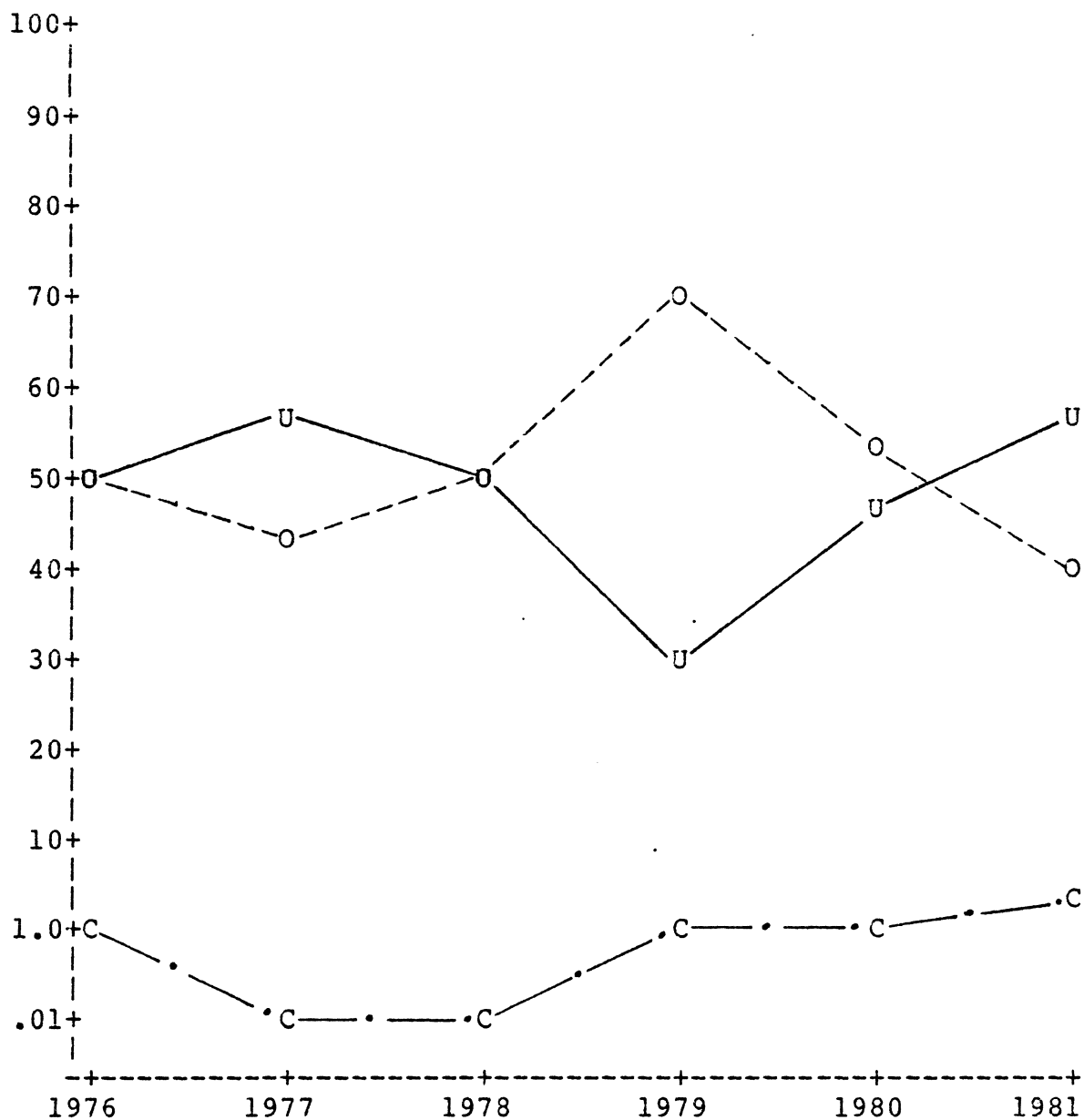


Figure 25. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 345: Cotton Sweaters

U: United States———
 C: People's Republic of China—•—•—
 O: Other Importing Countries-----

Table 18

U.S. Market Share Comparison 1976-1981

CATEGORY 345: COTTON SWEATERS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	431	302	358	180	423	640
Market Share	50.53	55.01	51.29	28.35	45.48	57.45
PRC Imports	8.1	.6	.2	7.0	12.8	36.9
Market Share	.95	.11	.02	1.11	1.40	3.32
Other Imports	413.9	246.4	339.8	448.0	494.2	437.1
Market Share	48.52	44.88	48.69	70.54	53.12	39.23
Total Imports	422	247	340	455	507	474
Market Share	49.47	44.99	48.71	71.65	54.52	42.55
Total Consumption	853	549	698	635	930	1114

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

production by 3 percent. Imports were up too, 67 percent, but this represented a relatively small quantity since the total import share was never above 15 percent. The market share of other importing countries fluctuated little from 1976 to 1980, and increased slightly in 1981. The U.S. share declined 3 percent from 1976 to 1980 and another 3 percent in the final year. The PRC increased its share ten-fold from .26 percent in 1976 to 2.68 percent of the market in 1981. The loss from 1976 to 1980 experienced by the U.S. manufacturers was absorbed by the PRC beginning in 1978; the final 3 percent loss went to the other importing countries. (Figure 26; Table 19.)

Category 348 Women's, Girls' and Infants' Cotton Pants

This category showed a greater increase in consumption than that of category 347, men's and boys' cotton trousers. Consumption of women's and girls' cotton pants was up 38 percent during this period. The loss of 10 percent of the market by U.S. manufacturers occurred because their production did not increase with the higher levels of consumption. U.S. production remained stable throughout the period, increasing only slightly in 1981. Imports increased 81 percent, thus satisfying the increased demand. The 10 percent decline in market share by the United States was shared almost evenly by the PRC and the other importing

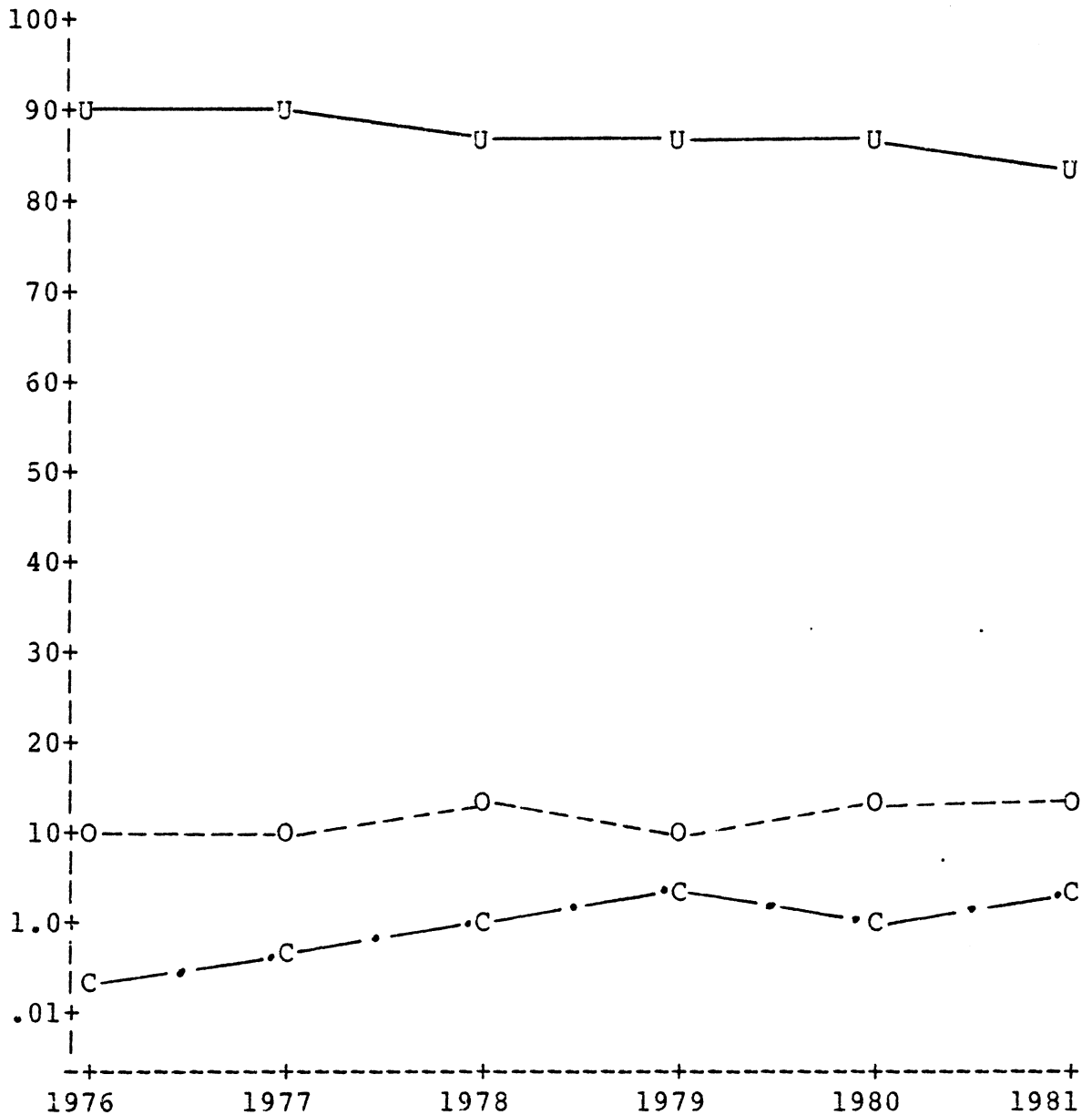


Figure 26. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 347: Men's & Boys' Cotton Trousers

U: United States———
 C: People's Republic of China——.——.
 O: Other Importing Countries-----

Table 19

U.S. Market Share Comparison 1976-1981

CATEGORY 347: MEN'S & BOYS' COTTON TROUSERS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	24095	28270	28200	28513	28627	24758
Market Share	88.34	88.54	85.99	86.12	85.37	82.37
PRC Imports	70.9	231.4	374.9	882.3	714.7	803.6
Market Share	.26	.72	1.14	2.66	2.13	2.68
Other Imports	3109.1	3427.6	4220.1	3713.7	4190.3	4494.4
Market Share	11.40	10.74	12.87	11.22	12.50	14.95
Total Imports	3180	3659	4595	4596	4905	5298
Market Share	11.66	11.46	14.01	13.58	14.63	17.63
Total Consumption	27275	31929	32795	33109	33532	30056

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

countries; the PRC increased its share 4 percent and the other importing countries, six percent. (Figure 27; Table 20.)

Category 445 Men's and Boys' Wool Sweaters

In this category imports from the PRC increased more than ten fold from 1976 TO 1980, then declined 40 percent from 1980 to 1981. U.S. production of wool sweaters increased 51 percent, and imports grew by 53 percent from 1976 to 1981. The U.S. share declined in 1978, but the loss was regained by the following year, and American manufacturers ended the period in 1981 with a market share identical to that held in 1976, even with the large increase in imports from the PRC. The market shares were traded between subjects over this period, but the final 1981 figures showed the PRC's larger share coming at the expense of the other importing countries. (Figure 28; Table 21.)

Category 446 Women's, Girls' and Infants' Wool Sweaters

U.S. production in this category showed some fluctuation during this six year period, and the U.S. market share ranged from 17 to 33. In 1980 the market share was at its lowest point; in 1981 U.S. producers' share increased to 25 percent. Production increased 56 percent during this period, and consumption of wool sweaters rose 27 percent.

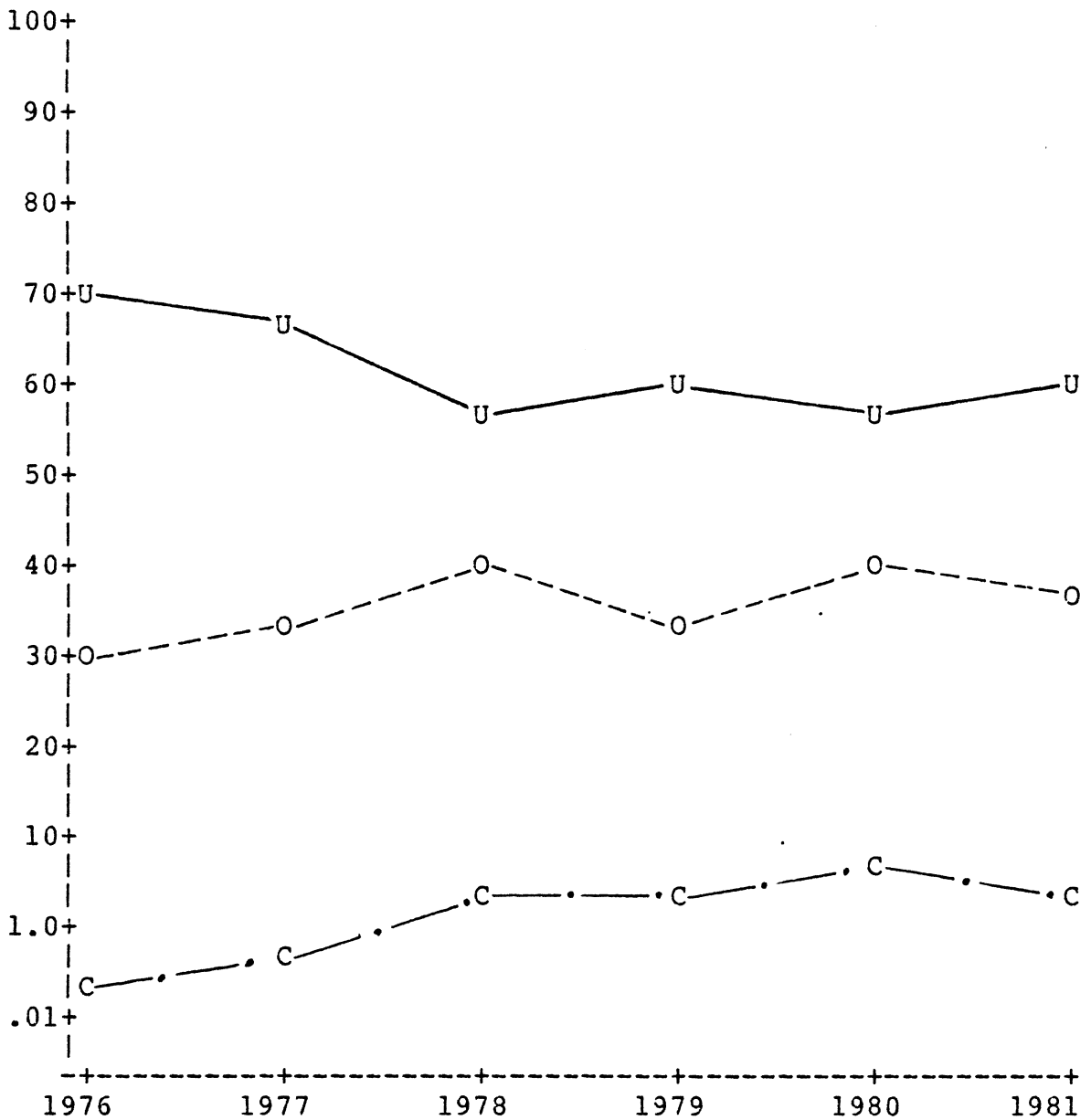


Figure 27. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 348: Women's & Girls' Cotton Pants

U: United States———
 C: People's Republic of China——.——.
 O: Other Importing Countries-----

Table 20

U.S. Market Share Comparison 1976-1981

CATEGORY 348: WOMEN'S & GIRLS' COTTON PANTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	11103	12384	10886	11294	10554	13113
Market Share	68.83	65.83	57.80	60.88	56.03	59.06
PRC Imports	52.7	155.8	556.2	945.9	1058.2	1032.4
Market Share	.33	.83	2.95	5.10	5.62	4.65
Other Imports	4976.3	6271.2	7391.8	6310.1	7222.8	8057.6
Market Share	30.84	33.34	39.25	34.02	38.35	36.29
Total Imports	5029	6427	7948	7256	8281	9090
Market Share	31.17	34.17	42.20	39.12	43.97	40.94
Total Consumption	16132	18811	18834	18550	18835	22203

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

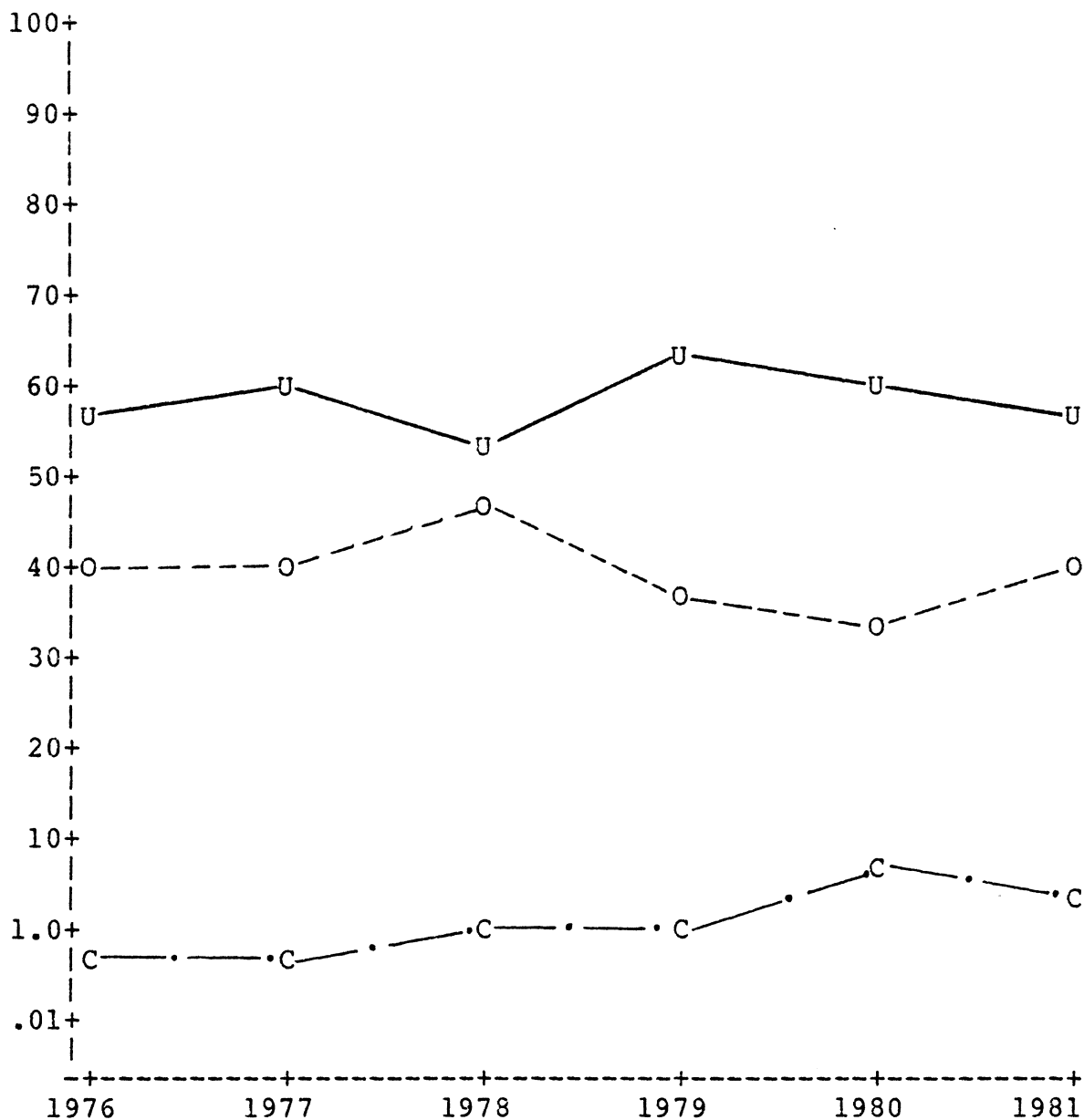


Figure 28. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 445: Men's & Boys' Wool Sweaters

U: United States———
 C: People's Republic of China——.—.
 O: Other Importing Countries-----

Table 21

U.S. Market Share Comparison 1976-1981

CATEGORY 445: MEN'S & BOYS' WOOL SWEATERS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	580	830	743	858	733	876
Market Share	57.94	59.07	51.99	61.73	59.16	57.59
PRC Imports	5.1	8.0	19.1	12.8	72.4	43.0
Market Share	.51	.57	1.33	.92	5.85	2.83
Other Imports	415.9	567.0	666.9	519.2	433.6	601.9
Market Share	41.55	40.36	46.68	37.35	34.99	39.58
Total Imports	421	575	686	532	506	645
Market Share	42.06	40.93	48.01	38.27	40.84	42.41
Total Consumption	1001	1405	1429	1390	1239	1521

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

Most of this increase in market size went to the PRC. Its gains were dramatic in this category: from .21 percent of the market in 1976 to almost 19 percent by 1980. The PRC's share declined in 1981 to 11 percent. The entire PRC decline was translated into a gain by U.S. producers. The PRC was able to expand its market share and meet the consumers' demand primarily at the expense of the other importing countries whose share decreased from 79 percent to 63 percent, even while increasing shipments by 3 percent. (Figure 29; Table 22.)

Category 635 Women's, Girls' and Infants' Man-made Coats

During this period U.S. production in category 635 increased 50 percent while its market share remained stable, and consumption rose by 52 percent. The PRC's market share fluctuated widely from a low of .04 percent to a high of 2.26 percent, ending in 1981 with 1.78 percent of the market. Like the U.S., the other countries' share stayed within a relatively stable range; in this case one of 7 percent. In 1981 the other importing countries' share was the same as it had been in 1976 even with an increase in shipments of 49 percent. (Figure 30; Table 23.)

Category 640 Men's and Boys' Man-made Woven Shirts

Consumption of woven man-made shirts declined 10 percent from 1976 to 1981. Production in the United States

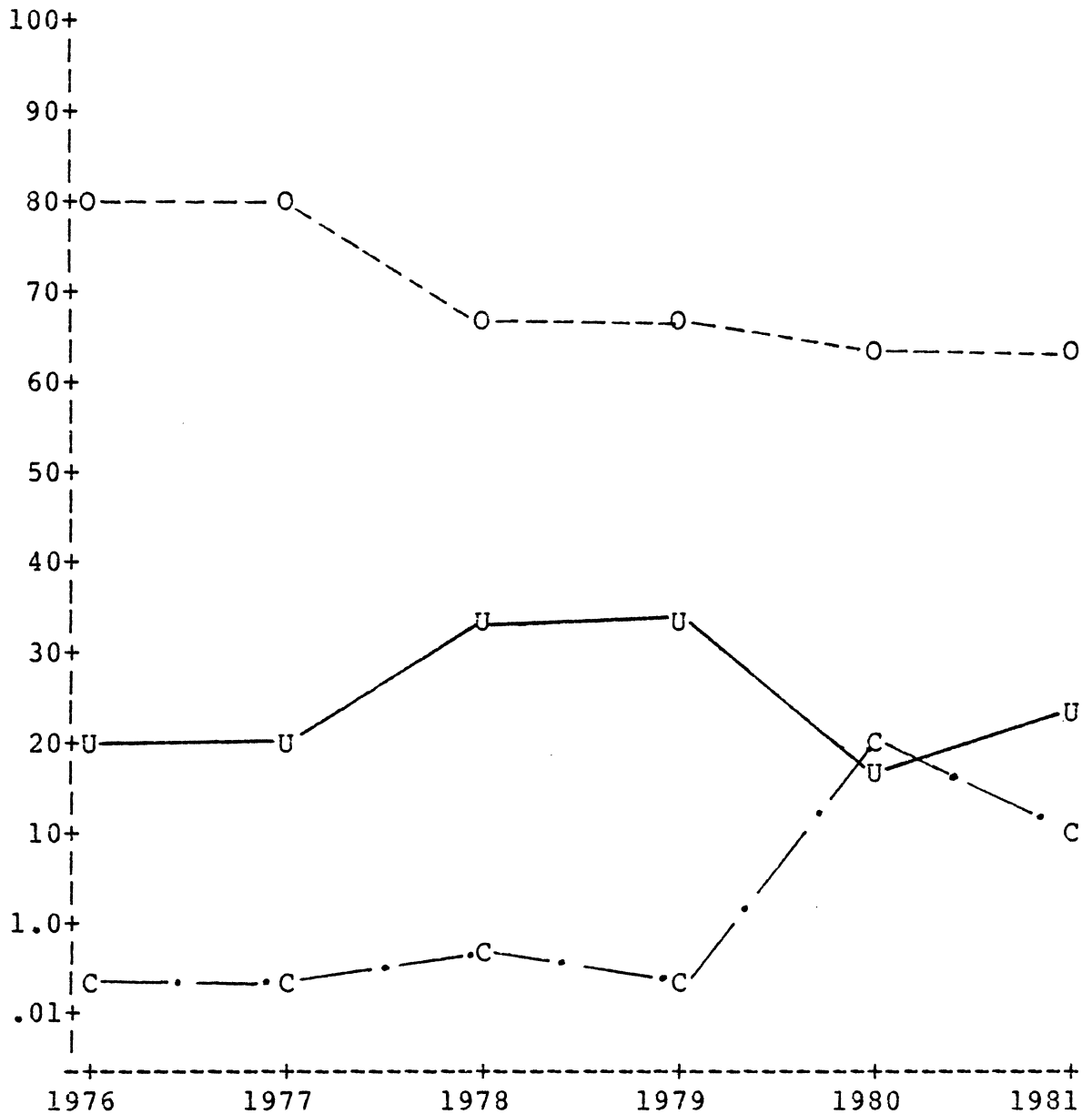


Figure 29. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 446: Women's and Girls' Wool Sweaters

U: United States———
 C: People's Republic of China——.——.
 O: Other Importing Countries-----

Table 22

U.S. Market Share Comparison 1976-1981

CATEGORY 446: WOMEN'S & GIRLS' WOOL SWEATERS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	358	452	608	526	415	557
Market Share	20.40	18.99	33.22	31.78	16.85	24.99
PRC Imports	3.7	7.3	14.4	4.4	470.0	235.9
Market Share	.21	.31	.79	.27	19.08	10.58
Other Imports	1393.3	1920.7	1207.6	1124.6	1577.9	1436.1
Market Share	79.39	80.70	65.99	67.95	64.07	64.43
Total Imports	1397	1928	1222	1129	2048	1672
Market Share	79.60	81.01	66.78	68.22	83.15	75.01
Total Consumption	1755	2380	1830	1655	2463	2229

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

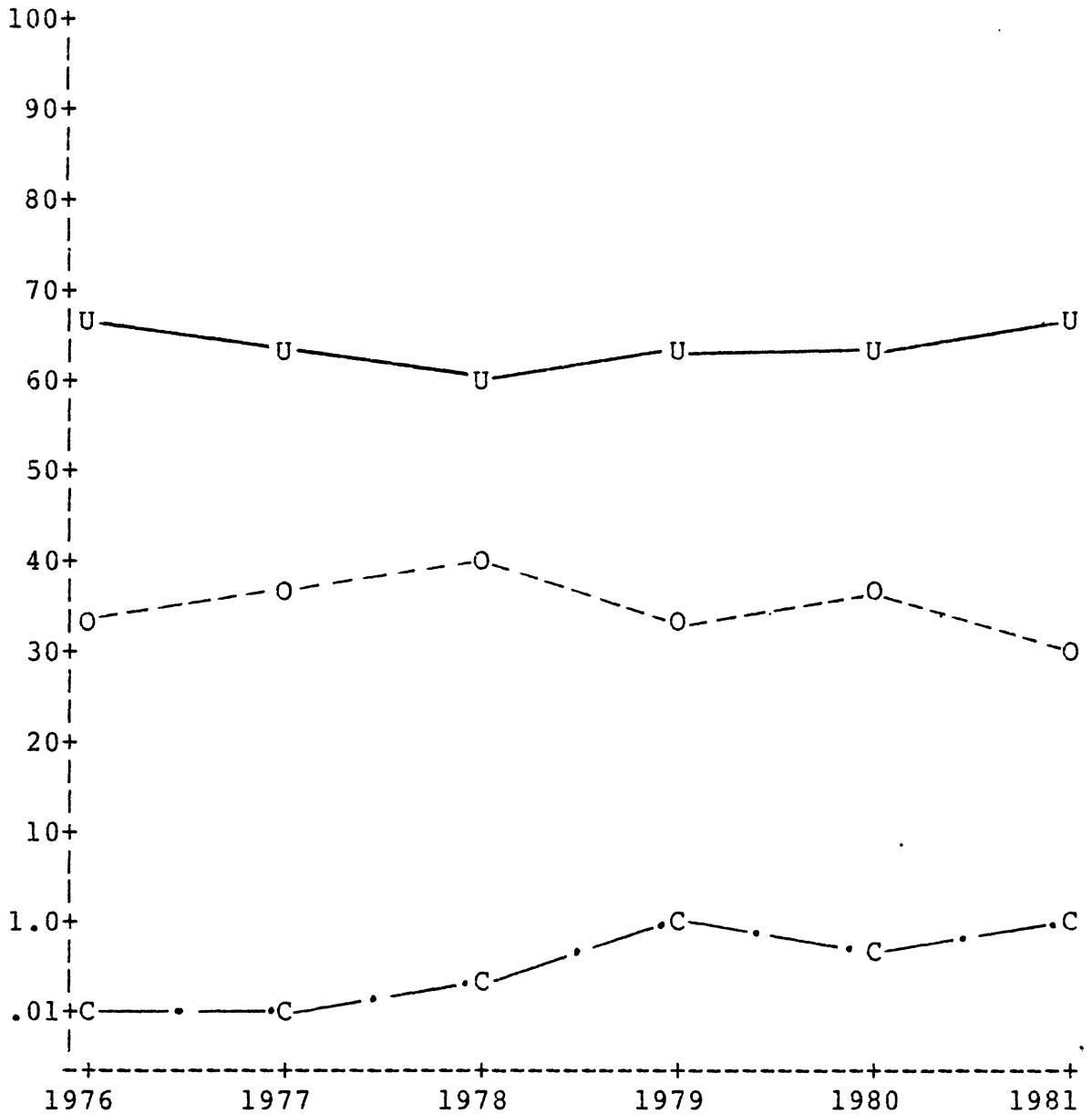


Figure 30. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 635: Women's and Girls' Man-made Coats

U: United States —————
 C: People's Republic of China — . — .
 O: Other Importing Countries — — — —

Table 23

U.S. Market Share Comparison 1976-1981

CATEGORY 635: WOMEN'S & GIRLS' MAN-MADE COATS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	3624	3705	3720	4004	4215	5439
Market Share	67.75	63.96	60.88	64.35	63.58	66.79
PRC Imports	7.4	2.2	20.1	140.4	38.2	144.9
Market Share	.14	.04	.33	2.26	.58	1.78
Other Imports	1717.6	2085.8	2369.9	2077.6	2375.8	2559.1
Market Share	32.11	36.00	38.79	33.39	35.84	31.43
Total Imports	1725	2088	2390	2218	2414	2704
Market Share	32.25	36.04	39.12	35.65	36.42	33.21
Total Consumption	5349	5793	6110	6222	6629	8143

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

decreased 27 percent, while imports rose 25 percent.

American manufacturers lost 13 percent of their market share during this period. The PRC's share steadily increased from a low of .01 percent to a high in 1981 of 3.13 percent.

Most of the loss experienced by U.S. producers went to the other importing countries. They picked up almost 10 percent of the 13 percent lost by the United States, ending the period in 1981 with 41 percent of the market. (Figure 31; Table 24.)

Category 641 Women's, Girls' and Infants' Man-made Woven Shirts

Consumption in this category increased .90 percent from 1976 to 1981. U.S. production of women's and girls' woven man-made fiber shirts increased 80 percent, and the U.S. market share remained within a range of four percentage points varying from 76 to 80 percent. The other countries' share also remained stable with the same variation in market share of four percentage points, ending the period with 21 percent, an increase of just over 1 percent of the market. The PRC's share increased from .01 percent to a high of 2.61 percent in 1981, an example of a large percentage increase but a final market share of less than 3 percent.

(Figure 32; Table 25.)

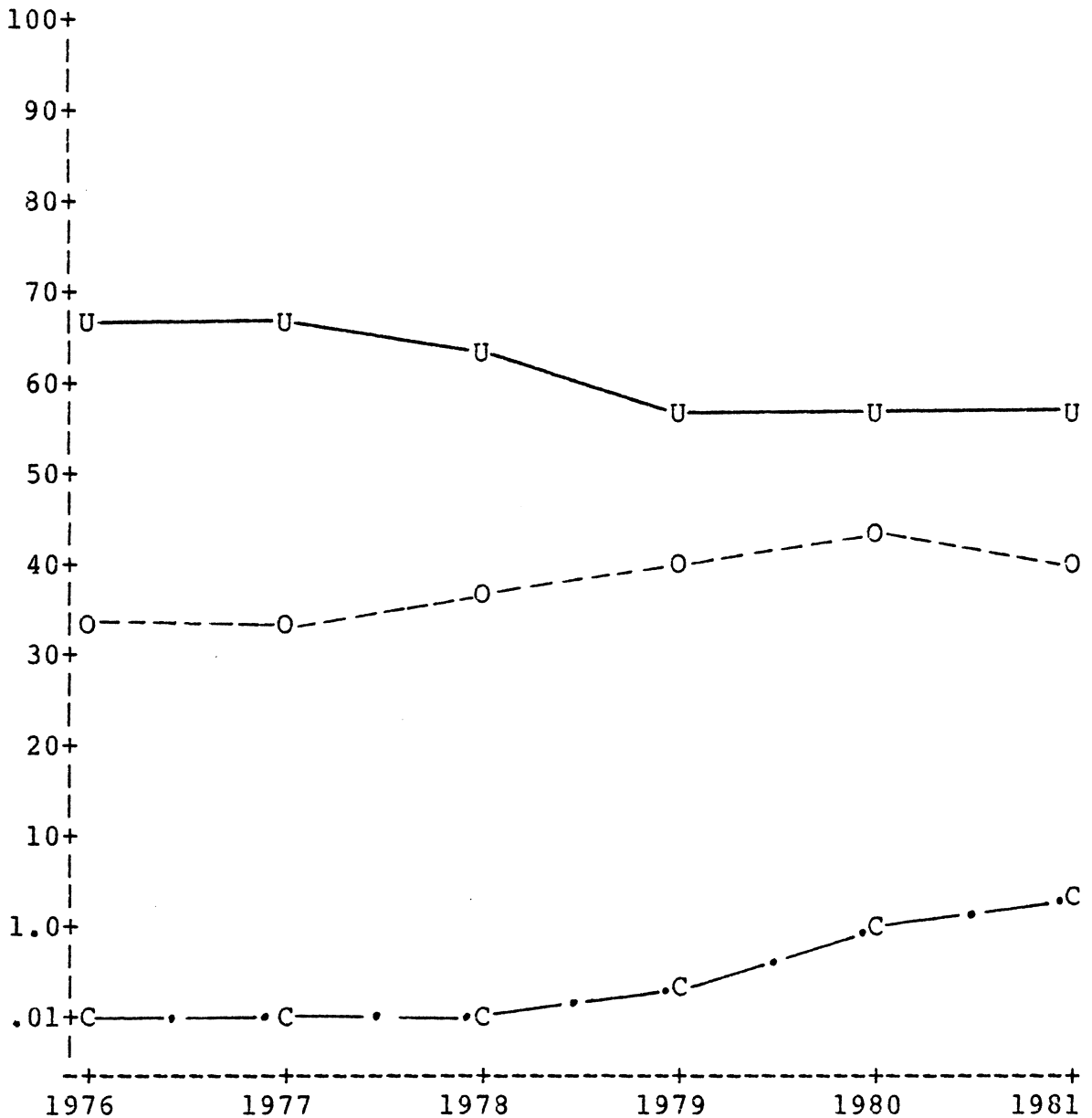


Figure 31. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 640: Men's and Boys' Man-made Woven Shirts

U: United States———
 C: People's Republic of China——.—.
 O: Other Importing Countries-----

Table 24

U.S. Market Share Comparison 1976-1981

CATEGORY 640: MEN'S & BOYS' MAN-MADE WOVEN SHIRTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	18102	15367	13649	13477	12705	13280
Market Share	67.90	68.04	62.09	58.24	56.50	55.38
PRC Imports	1.9	2.3	2.7	54.5	391.3	750.7
Market Share	.01	.01	.01	.24	1.74	3.13
Other Imports	8556.0	7215.6	8332.3	9609.5	9388.6	9947.3
Market Share	32.09	31.95	37.90	41.52	41.76	41.49
Total Imports	8558	7218	8335	9664	9780	10698
Market Share	32.10	31.96	37.91	41.76	43.50	44.62
Total Consumption	26660	22585	21984	23141	22485	23978

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

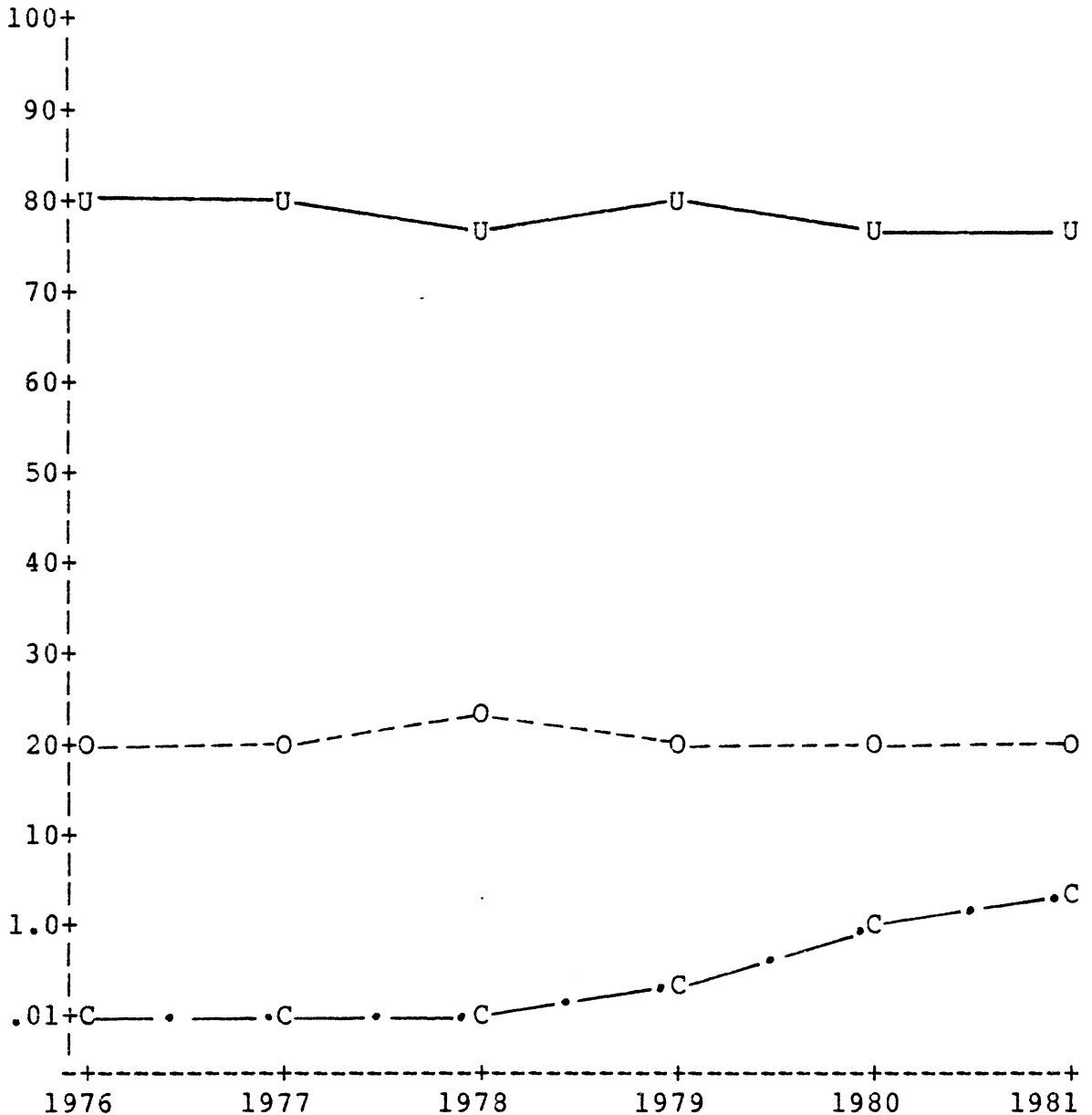


Figure 32. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 641: Women's and Girls' Man-made Woven Shirts

U: United States —————
 C: People's Republic of China — . . .
 O: Other Importing Countries — — — —

Table 25

U.S. Market Share Comparison 1976-1981

CATEGORY 641: WOMEN'S & GIRLS' MAN-MADE WOVEN SHIRTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	9176	11107	12043	14793	15669	16507
Market Share	80.32	78.62	76.80	78.37	77.98	76.22
PRC Imports	1.6	3.6	5.5	68.9	318.7	567.5
Market Share	.01	.03	.04	.37	1.59	2.62
Other Imports	2246.4	3017.4	3631.5	4014.1	4106.3	4581.5
Market Share	19.67	21.35	23.16	21.26	20.43	21.16
Total Imports	2248	3021	3637	4083	4425	5149
Market Share	19.68	21.38	23.20	21.63	22.02	23.78
Total Consumption	11424	14128	15680	18876	20094	21656

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

Category 645 Men's and Boys' Man-made Sweaters

American consumers bought 12 percent fewer men's and boys man-made fiber sweaters in 1981 than they did in 1976. U.S. production declined 11 percent. The quantity of imports increased sharply in 1978 but ended the period at a level 3 percent below 1976. In 1978 U.S. producers lost 10 percent of their market share to the other importing countries, but by 1980 the other countries share had returned to within a percentage point of where it had been in 1976. From 1976 to 1980 the U.S. share declined by almost 5 percent; most of that loss went to the PRC whose share grew from .10 percent to 3.24 percent. The PRC's share remained stable from 1980 to 1981 while the U.S. share rose by 5 percent at the expense of the other importing countries. (Figure 33; Table 26.)

Category 646 Women's, Girls' and Infants' Man-made Sweaters

During this period U.S. manufacturers lost 2 percent of their market share, while PRC imports increased over 12 times. Consumption and imports remained constant, while U.S. production decreased 6 percent. From 1978 to 1979 the PRC's share of the market increased dramatically from less than 2 percent to almost 5 percent. U.S. producers have often cited this increase as an example of the PRC's ability to disrupt the American market. However, during this same

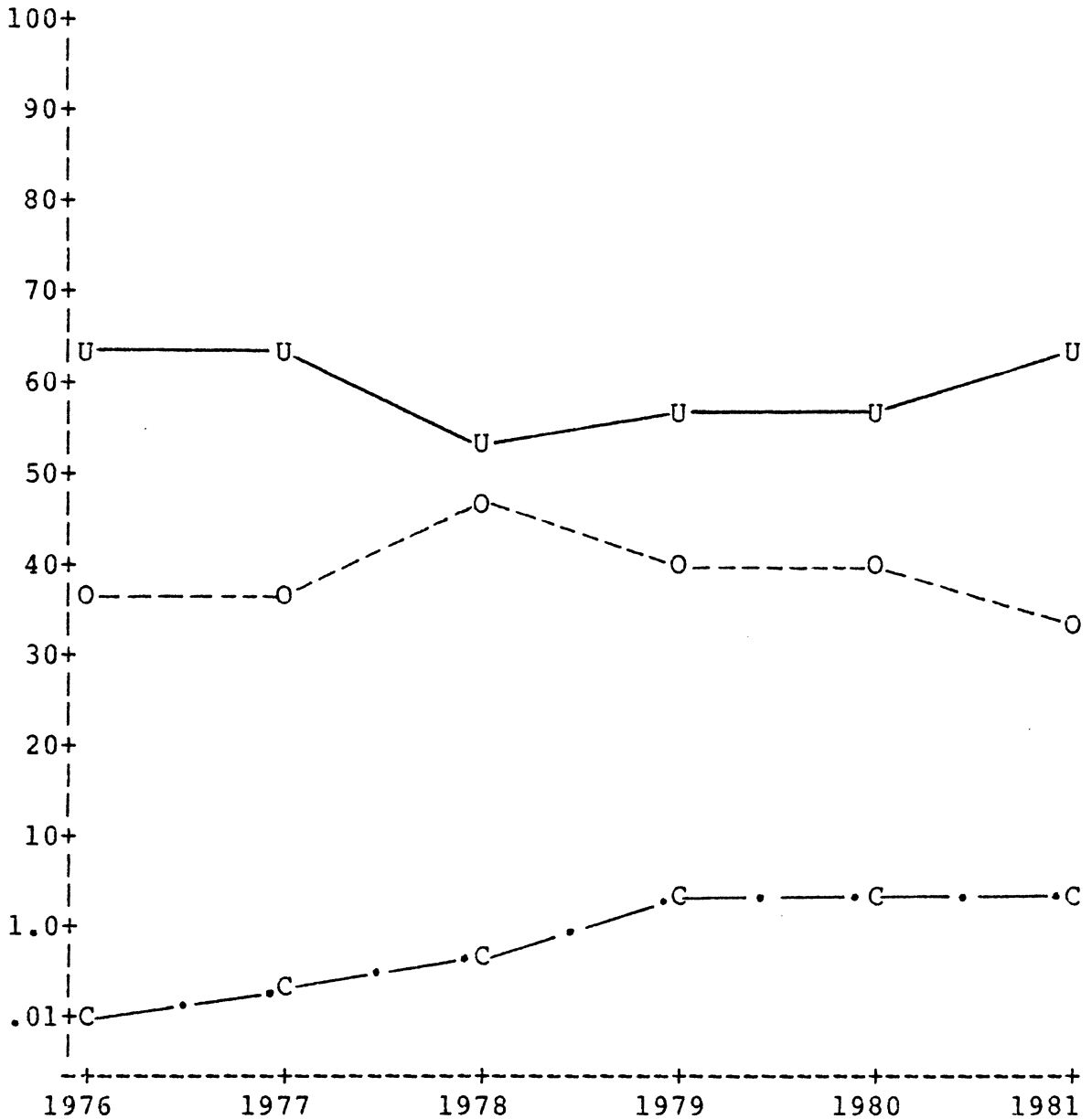


Figure 33. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 645: Men's and Boys' Man-made Sweaters

U: United States———
 C: People's Republic of China—•—•—
 O: Other Importing Countries-----

Table 26

U.S. Market Share Comparison 1976-1981

CATEGORY 645: MEN'S & BOYS' MAN-MADE SWEATERS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	2901	2938	2794	2407	2264	2574
Market Share	62.70	63.17	53.08	56.37	58.08	63.18
PRC Imports	4.5	11.8	37.3	154.4	129.5	127.1
Market Share	.10	.25	.71	3.62	3.31	3.12
Other Imports	1721.5	1701.1	2432.7	1708.5	1504.5	1372.9
Market Share	37.20	36.58	46.21	40.01	38.61	33.70
Total Imports	1726	1713	2470	1863	1634	1500
Market Share	37.30	36.83	46.92	43.63	41.92	36.82
Total Consumption	4627	4651	5264	4270	3898	4074

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

period the U.S. manufacturers lost less than 1 percent of their market share. Most of the ground gained by the PRC came at the expense of the other countries. These other countries responded strongly during the next time period from 1979 to 1980. They increased their share by 7 percent at the expense of both the PRC and the United States. In 1981 the U.S. and the PRC each regained some of their losses. Over the entire period the PRC gained 3 percent of the market, 2 percent from American producers and 1 percent from the other importing countries. (Figure 34; Table 27.)

Category 648 Women's, Girls' and Infants' Man-made Pants

From 1979 to 1981 the PRC made tremendous gains in this category in terms of percentage increase, but its share reached a high of only 2 percent in the final year. Total quantity consumed and U.S. production each increased just over 3 percent from 1976 to 1981. U.S. market share declined somewhat in 1978 to 71 percent, due to an increase in the share held by the other importing countries, but it ended the period where it had started in 1976. The ground gained by the other countries in 1978 was regained by the U.S., and the other countries share returned to 23 percent in 1981 from a starting point of 25 percent in 1976. The PRC's final 2 percent market share was the share lost by the other importing countries. (Figure 35; Table 28.)

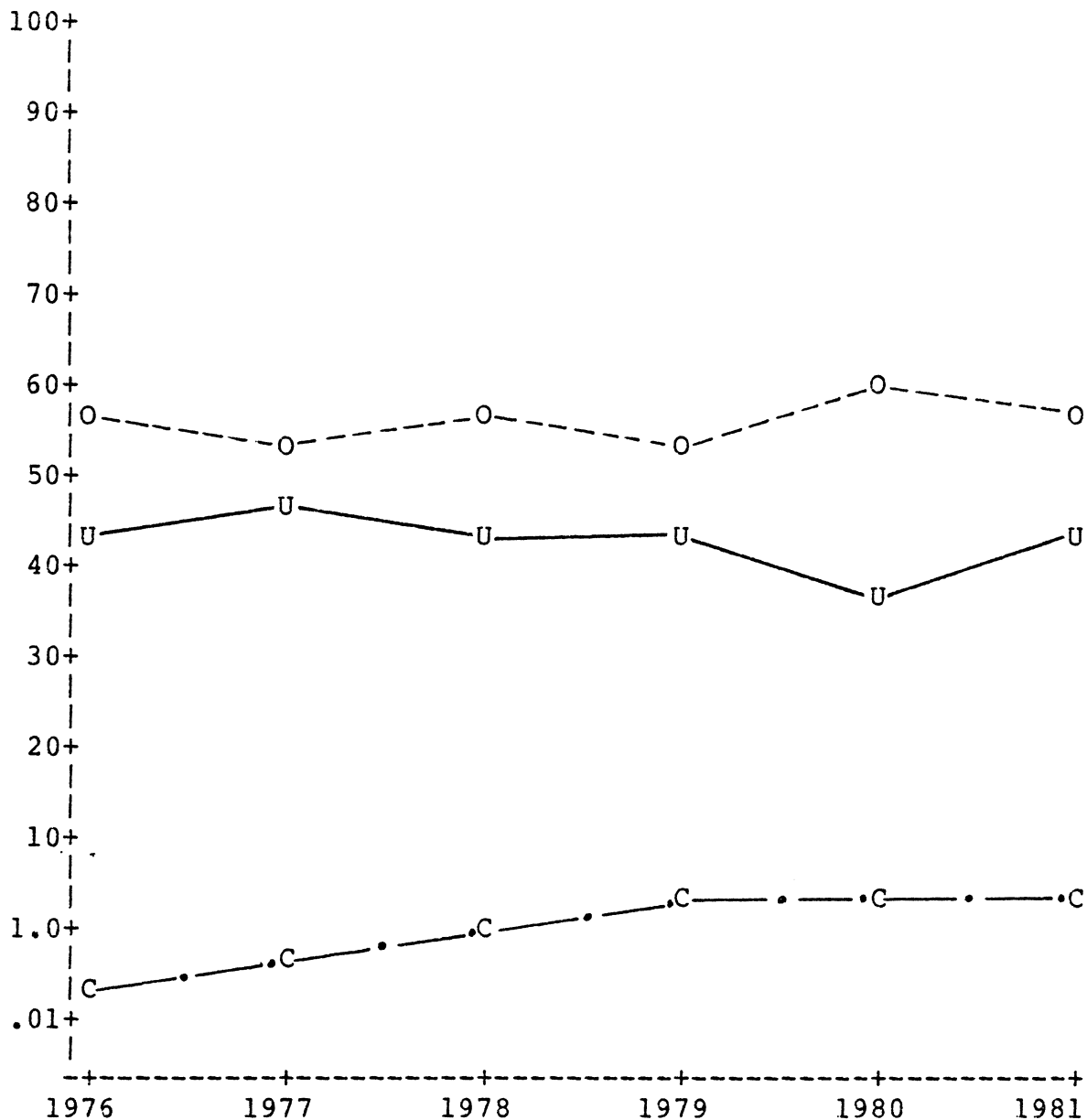


Figure 34. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 646: Women's and Girls' Man-made Sweaters

U: United States —————
 C: People's Republic of China ———.——.
 O: Other Importing Countries ————

Table 27

U.S. Market Share Comparison 1976-1981

CATEGORY 646: WOMEN'S & GIRLS' MAN-MADE SWEATERS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	6133	6662	5331	4507	4823	5752
Market Share	43.61	47.10	43.12	42.63	38.03	41.89
PRC Imports	33.2	100.8	232.2	499.6	325.5	414.1
Market Share	.24	.71	1.88	4.73	2.57	3.01
Other Imports	7896.8	7380.2	6799.8	5566.4	7532.4	7565.9
Market Share	56.15	52.19	55.00	52.64	59.40	55.10
Total Imports	7930	7481	7032	6066	7858	7980
Market Share	56.39	52.90	56.88	57.37	61.97	58.11
Total Consumption	14063	14143	12363	10573	12681	13732

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

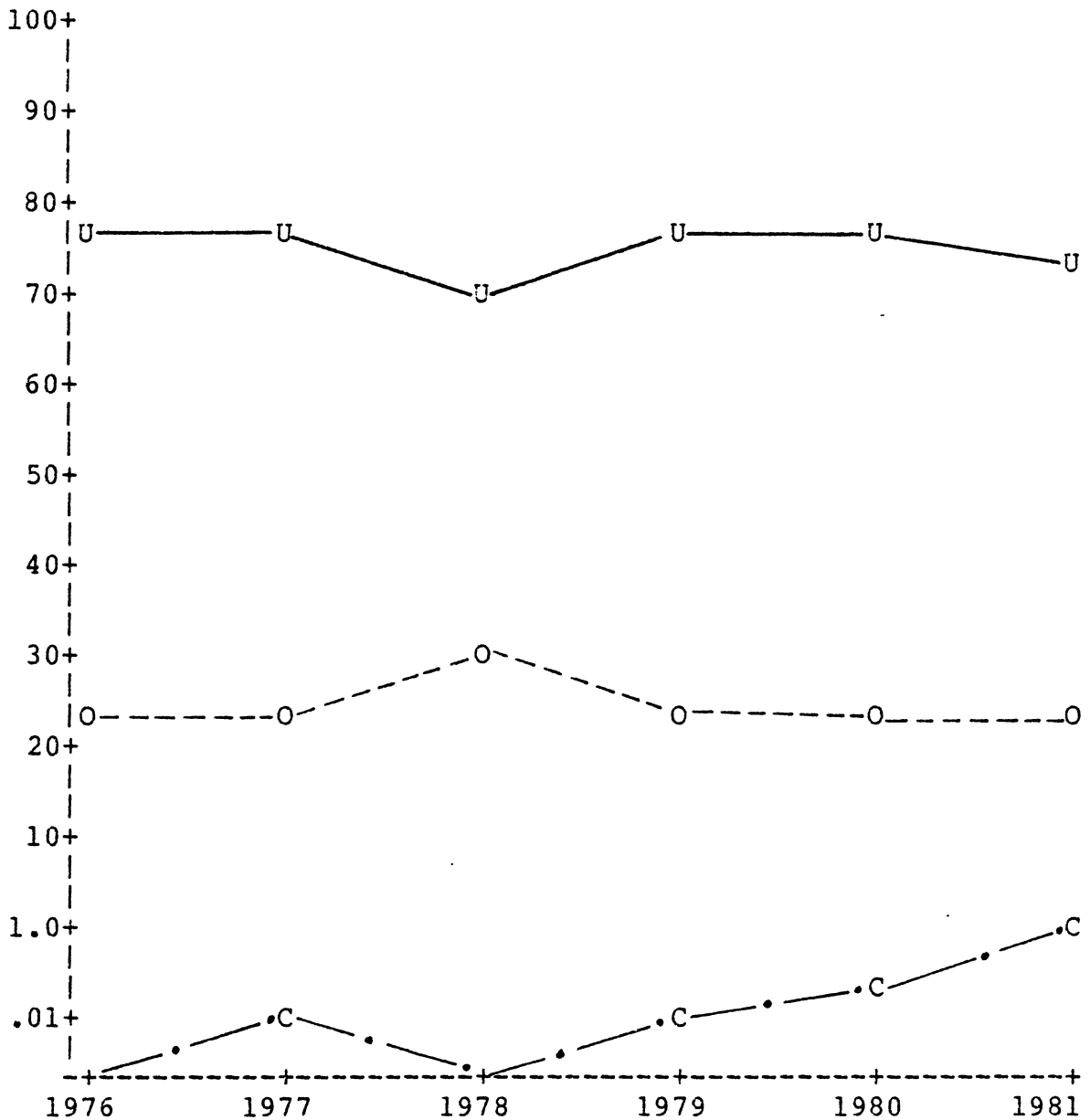


Figure 35. Plot of Percentage Consumption Supplied to The United States Market by the Domestic Industry, the PRC, and Other Countries

Category 648: Women's and Girls' Man-made Pants

U: United States———
 C: People's Republic of China——•——•
 O: Other Importing Countries-----

Table 28

U.S. Market Share Comparison 1976-1981

CATEGORY 648: WOMEN'S & GIRLS' MAN-MADE PANTS

	1976	1977	1978	1979	1980	1981
	-----	-----	-----	-----	-----	-----
US Production	18664	16978	16011	17593	18566	19229
Market Share	75.05	76.98	71.03	76.05	75.74	74.81
PRC Imports	1.0	1.2	.5	22.1	70.0	519.8
Market Share	.00	.01	.00	.10	.29	2.02
Other Imports	6205.0	5075.8	6529.5	5517.9	5877.0	5954.2
Market Share	24.95	23.01	28.97	23.85	23.97	23.17
Total Imports	6202	5077	6530	5540	5947	6474
Market Share	24.95	23.02	28.97	23.95	24.26	25.19
Total Consumption	24870	22055	22541	23133	24513	25703

DESCRIPTION OF TABLE

Quantities are given in 1,000 dozen.

Market share is in percent.

Total market or consumption is defined as U.S. production plus total imports.

U.S. market share, PRC market share, and other (importing countries) market share total 100.00. U.S. market share and import market share also total 100.00.

PRC imports and other imports equal total quantity imported.

Summary

The years from 1976 to 1981 were years of dramatic growth for exports of textiles and apparel to the United States from the People's Republic of China. In 1976 China accounted for 3.1 percent of the total imports to the U.S. market; by 1981 their share was 11.3 percent of the aggregate. During this period China competed with other importing countries, as well as U.S. manufacturers, for a share of the American consumer's apparel dollars.

In 1982 China was the fourth largest textile and apparel importer to the United States behind Taiwan, Hong Kong, and South Korea. From 1976 to 1982, Taiwan and South Korea also increased their shares of the import market: from 11.9 to 15.8 percent for Taiwan, and from 11.8 to 12.9 percent for South Korea. Hong Kong lost market share during this same time: 17.5 to 14.2 percent, and moved from first to second place (Department of Commerce, 1983). Even with bilateral agreements negotiated under the MFA in place, imports from all countries steadily increased from 1976 to 1982 cutting into U.S. producers share in a minor way in some apparel categories and in a very major way in others.

Twenty-one textile and apparel categories were examined in this objective: 13 cotton, 6 man-made fiber, and 2 wool. General conclusions are difficult to draw for these categories as an aggregate, but some patterns are evident by

fiber content and garment type. Table 29 summarizes changes in market shares, consumption, and production on the category level from 1976 to 1981. Table 30 summarizes the same information by fiber content.

In the aggregate on the macro level the other importing countries were the most competitive during the period studied (Table 31). They increased their market share in these selected categories by five or more percentage points in twice as many categories as the PRC did, and in three times as many as U.S. producers. Increases and decreases in consumption balanced each other out, but domestic production showed twice as many decreases as increases in these categories.

Cotton

In this early period of trade with the PRC, 13 of the 21 active categories covered cotton textile or apparel products. As might be expected from China's history, resource endowment, and industrial structure, cotton products have been their most successful exports to the American market.

This phenomenon was predicted by the Product Life Cycle theory of trade (Arpan et. al., 1981; de la Torre, 1972; Wells, 1972). The home demand for cotton textiles and apparel in China is immense, and cotton fabrics and garments have been produced by the Chinese for thousands of years.

Table 29

Summary of Changes from 1976-1981
In Market Share, Consumption, and Production

Category Number and Name	U.S. ^a Market Share	PRC ^a Market Share	Others ^a Market Share	Percent ^b Change Consumption	Percent ^b U.S. Production
334: Men's & Boys' Cotton Coats	-41	11	30	-43	-70
335: Women's, & Girls' Cotton Coats	-36	16	20	25	-47
333: Men's & Boys' Cotton Suit Coats	-27	8	19	-63	-78
315: Cotton Printcloth	-27	0	27	-21	-46
340: Men's & Boys' Woven Cotton Shirts	-26	3	23	-20	-52
337: Cotton Playsuits	-19	11	8	-9	-30
338: Men's & Boys' Cotton Knit Shirts	-13	3	10	-7	-21
640: Men's & Boys' Man-made Woven Shirts	-13	3	10	-10	-27
348: Women's, & Girls' Cotton Pants	-10	4	6	38	18
339: Women's & Girls' Cotton Knit Shirts	-8	2	6	-11	-22
347: Men's & Boys' Cotton Trousers	-6	2	4	10	3
641: Women's, & Girls' Man-made Shirts	-4	3	1	90	80
646: Women's, & Girls' Man-made Sweaters	-2	3	-1	-2	-6
635: Women's, & Girls' Man-made Coats	-1	2	-1	52	50
445: Men's & Boys' Wool Sweaters	0	2	-2	52	51
320: Cotton Fabrics	0	3	-3	-14	-15
648: Women's, & Girls' Man-made Pants	0	2	-2	3	3
645: Men's & Boys' Man-made Sweaters	0	3	-3	-12	-11
446: Women's, & Girls' Wool Sweaters	5	10	-15	27	56
345: Cotton Sweaters	7	2	-9	31	48
341: Women's & Girls' Cotton Woven Shirts	18	1	-19	79	155

Note. Categories arranged in ascending order by change in U.S. market share.

^aMarket shares are changes in percentage points.

^bConsumption and production changes are percent changes since 1976.

Table 30

Summary of Changes from 1976-1981
In Market Share, Consumption, and Production
Aggregated by Fiber Content

Fiber Content	U.S. ^a Market Share	PRC ^a Market Share	Others ^a Market Share	Percent ^b Change Consumption	Percent ^b U.S. Production
Cotton Categories	-14.16	5.08	9.38	-.38	-12.08
Man-made Fiber Categories	-3.37	2.67	.67	20.27	14.83
Wool Categories	2.50	6.00	-8.50	39.50	53.50

^aMarket shares are mean changes in percentage points.

^bConsumption and production changes are mean percent changes since 1976.

Table 31

Change in Market Share
Consumption, and Production
for 21 Selected Categories
1976-1981

		
Categories Increased ≥5%	Categories Decreased ≥5%	Categories Remained Stable

Change in U.S. Market Share	3	11	7
Change in PRC Market Share	5	0	16
Change in Other Importing Countries Market Share	10	3	8
Change in Consumption	10	10	1
Change in Production	6	12	3

The entire process, from growing cotton to producing finished garments, is labor intensive. China, to an even greater extent than the typical less developed country, is endowed with more labor than capital. The PRC's cotton complex employs over 200 million people, and the industry is unhampered by clean air or water standards.

The cotton textiles and apparel exported by the Chinese are for the most part mature products, for which price is a significant marketing factor. These standardized products require few marketing skills, appropriate for China's present lack of business sophistication. Categories 315 and 320, the Chinese cotton textiles studied, are excellent examples. The manufacture of these fabrics is characterized by long production runs with few changes. The weave of the cloth is a standard one, and much of this yardage is geige goods. Sophisticated printing and dyeing techniques are not utilized to produce these textiles. The fabrics are easily compared to those of other countries, and price is an important variable in the decision to purchase.

The consumption of textiles and apparel in these 13 cotton categories was stable over this six year period. However, U.S. production of cotton products in these categories declined by 12.1 percent, and the U.S. market share of these commodities fell by over 14 percentage points from 1976 to 1981. Ten of the 11 categories in which the

United States lost the most market share (Table 29) were cotton categories. The U.S. increased its market share in only two (of 13) cotton categories during this time. China made significant gains in the American cotton market, but the other importing countries did as well. China's average percentage point increase was 5.1; the other importing countries' share rose by a mean of 9.4 percentage points (Table 30). These figures would indicate that while the Chinese have made solid advances in this market, they are not entirely responsible for the decline in the U.S. producers' share; in fact, the PRC accounted for just over one-third of the loss suffered by American manufacturers.

Man-made Fiber

Consumption and production of man-made fiber apparel in these categories showed larger gains than cotton during this time period. Consumption rose 14.8 percent, and U.S. production increased 20.2 percent. The decline in U.S. market share of 3.3 percentage points was a gain primarily for the PRC. The Chinese share increased 2.7 percentage points, leaving the other importing countries with an increase of just .67 percentage points for the man-made fiber categories studied. The largest loss for American producers in these man-made fiber categories was in men's and boys' woven shirts. This is perhaps the most standardized apparel product examined, and therefore one

easily duplicated by less developed countries. The PRC gained 3 of the 13 points lost by the U.S.; the other importing countries captured the remaining 10 points.

Wool

Following the pattern of man-made fiber categories, wool apparel consumption and U.S. production increased from 1976 to 1981. Sweaters, the only garments studied, showed an increase in consumption of 39.5 percent; U.S. production rose 53.5 percent. The United States and China shared the larger American sweater market. The other importing countries' share declined by 8.5 percentage points over the period studied.

Overview

Overall U.S. producers were more competitive in man-made fiber and wool apparel than in comparable cotton apparel categories. For example, American manufacturers lost 10 percentage points in women's and girls' cotton pants, while maintaining their share in women's and girls' man-made fiber pants. In general, American producers were more competitive in the female apparel market than in the male apparel market. Male apparel is more standardized and therefore easier to produce in countries far from the market. Female apparel is more sensitive to fashion changes and quick turn-around times. Therefore, retailers may prefer to buy from domestic manufacturers so that they

can reorder and make changes as the fashion season develops. Domestic producers were also competitive in the wool categories examined. The U.S. price was higher than the Chinese price, but retailers were more likely to receive their shipments of domestically produced sweaters at the appropriate selling season.

It seems clear that the PRC currently has a comparative advantage in the production of cotton textiles and apparel. In 1982 Hong Kong's cotton exports to the U.S. declined by 4 percent, the Philippines' by 10 percent, India's by 15 percent, and Pakistan's by 21 percent. Two other large cotton exporters, Singapore and South Korea, saw their shares fall by over 20 percent each from 1981 to 1982.

China is now struggling to develop its man-made fiber and wool industries to be as competitive internationally as its cotton sector. Since textile and apparel competition is worldwide, PRC's success or failure will affect textile and apparel manufacturing in many countries. American manufacturers must also compete with China and with other developed and developing countries. Their ability to compete and retain comparative advantage in specific apparel categories is critical to the industry's long-term survival.

Chapter VI

SUMMARY AND CONCLUSIONS

China's foreign trade tripled from 1977 to 1981 and has continued to grow rapidly since 1981. The growth rate for the combination of imports and exports for the People's Republic of China exceeded that of all other countries except Mexico, a major new oil exporter. Only six other nonindustrial economies traded more than China. The total trade figures for most nonindustrial countries were in a deficit status with imports exceeding exports. Two countries were exceptions: Saudia Arabia and the People's Republic of China. The PRC was fourth among developing nations in total exports and ran a large trade surplus (Hickok & Arguelles, 1983).

China's exports and imports each increased in value by an average of 30 percent a year from 1977 to 1981. This was 50 percent higher than the average for nonoil-developing countries, and twice the annual growth rate for industrialized economies. This large and unexpected increase occurred in a short span of six years since Mao Zedong's death, and moved China from the twentieth largest nonindustrial country trader in 1976 to the seventh largest in 1981. During this period China has gradually moved towards more pragmatic economic policies and has become a

major trader in international commerce. Textile and apparel products have been important components of China's trade base.

Dramatic trade growth has meant increased market size for China in a number of areas. For some commodities, there is potential for the PRC to affect world prices or to cut significantly into other countries' market shares. Textiles are the most prominent case of China's increased world market share. Exports of Chinese textiles have already had some crowding-out effects for other producers because developed countries with protectionist policies tend to provide an overall level of protection to their domestic industries, and some shift among suppliers is possible under such restrictive import policies (Hickok & Arguelles, 1983).

The issues of increased market size and China's emergence as a major world trader are highlighted by the current trade dispute between the United States and the People's Republic of China. America unilaterally set textile import quotas on Chinese imports in January 1983 when negotiations failed to produce a bilateral textile agreement. In response, China banned all imports of American cotton, soybeans, and chemical fibers.

The focus of this research was the international trade of textiles and apparel between the United States and China from its significant beginning in 1975 to the present. It

had three objectives. The first objective was to establish a framework for understanding the present concern over increasing levels of textile and apparel imports from the People's Republic of China. The initial step in this process was to describe the existing textile and apparel industrial sectors in the PRC. Factors investigated include: size, location, capital equipment, labor employed, products, government attitudes toward, government plans for, and place in the total economy.

The second part of this first objective was a description of PRC's importation and exportation of textile and apparel products worldwide. The purpose of this segment was to set US-PRC trade within the context of PRC's textile and apparel trade with other countries. Variables included length of trading relationship, products traded, and volume and value of textile and apparel trade.

The third part of the background segment focused on the growth of the PRC's trade with the United States. Exports from the United States to the PRC were discussed, but the emphasis was on analyzing the growth of textile and apparel imports to the U.S. from China. The increase by fiber content, that is, total imports of cotton, wool, and man-made fiber textile and apparel products was traced from 1975 to the present.

The second objective of this research was to investigate the role of price in relation to market share. The import market was the focus of this objective due to the lack of data for values of U.S. production for specific categories. The goal was to determine if price was a major factor in changes observed in the import market shares of countries in 21 categories in which the PRC is actively importing.

The researcher examined this question from two different perspectives using two analytical methods. The first perspective was that of price elasticity. Analyses were done to determine the responsiveness of the quantity demanded to a change in price. Quantity was measured by market share.

A linear regression model was utilized in the second analytical method to determine the amount of variability in market share which could be explained by a combination of current period's relative price (relpr), previous period's market share, and market share two periods back; that is, the market share lagged one quarter (lag1) and the market share lagged two quarters (lag2).

The goal of the third objective was to determine the effect of the growth in imported textile and apparel products from the PRC on the market shares of 1) U.S. manufacturers, 2) the People's Republic of China, and 3) all

other countries importing to the United States. The market share of U.S. consumption rather than market share of imports into the United States was examined in this final objective.

Separate analyses were done for 21 categories in which Chinese imports are either presently active or controlled by unilateral agreement. A profile for each category shows the market shares of the three subjects from 1976 through 1981.

Data for these analyses were obtained from the Department of Labor statistical data base (LABSTAT), United Nations international trade series, the State Statistical Bureau of the PRC, and the Textile Information Management System data base (TIMS). TIMS consists of three component data files: textile and apparel imports into the U.S.; United States' textile and apparel exports; and selected domestic textile and apparel production, employment, and market information. SAS (Statistical Analysis System) procedures were used for analyses (SYSREG and TSCSREG), and to graphically depict the changes in market shares. Overlay graphs showed the percentage of consumption supplied to the U.S. market by the domestic industry, the PRC, and other importing countries.

In 1981 Seidel identified the textile industry as the most important industrial sector in the PRC. Taxes and profits from the industry were thought to have provided

over 10 percent of the national revenue in 1980. According to PRC government statistics, 23,100 apparel enterprises and 17,100 textile plants accounted for almost 20 percent of total industrial output value in 1981 (State Statistical Bureau, 1982). Textile and apparel exports are an important source of foreign currency. These manufactures amounted to over 28 percent of the total Chinese exports in 1981 ("Chinese Textile Industry," 1982). Domestically textile and apparel products account for 25 percent of total retail sales of all commodities ("National Pace-setter," 1981).

Cotton, representing nearly 90 percent of China's total fiber consumption, is the most advanced and important sector of the textile industry in China. (Emerging Textile-Exporting, 1982). China's man-made fiber industry is still in an early stage of development. When polyester was introduced in 1977, total synthetic fiber capacity was only 60,000 tons a year (Uno, 1982). Government economic policy shifted in 1979, and construction of synthetic fiber plants was promoted at an accelerated pace, concentrating on integrated production with petrochemicals, using technology introduced from abroad. Estimates of current existing capacity range from 590,000 tons per year (Uno, 1982) to 820,000 tons per year ("Chinese Textile Industry," 1982). This production is remarkably efficient since 90 percent of the total synthetic fiber capacity has been built since 1978.

The rate and direction of growth for China's textile and apparel industries will depend on many factors. In a non-market economy the government has broad powers to reassign resources and change levels of production. Cotton production will depend partly on climatic conditions which are difficult to predict. Energy will be a key factor in meeting the country's economic goals. Short range energy goals include conservation of available energy and the development of offshore oil resources (Lee, 1982). Development of its industrial infrastructure will also be important for China's textile and apparel industries. The existing transportation system is underdeveloped; resources must be invested to build highways, develop a railroad network, and expand airports and port facilities (Obenski, 1982).

Critical to the industry's success will be its ability to actively participate in and continue to expand its foreign trade. Chinese manufacturers will need to improve the quality and design of their products and adopt more sophisticated marketing techniques. Chinese political leaders must strive to keep markets open to Chinese goods and work actively to prevent the adoption of protectionist trade policies by both developed and developing nations.

In 1980 China's leading trading partners, in addition to the big four of Japan, Hong Kong, the United States, and

West Germany, were Romania, Australia, Canada, the United Kingdom, France, and Singapore (Chen, 1982). Overall, developed countries (including Hong Kong and Macao) account for over 70 percent of current trade and the less developed countries for the remainder (Quarterly Economic Review, 1981).

Key commodities in China's trade are textile and apparel manufactures. In 1982 China exported more than 600 million square yards of fabric and garments, in contrast to 12 million in 1972 ("Glad Rags," 1983). The PRC is probably the largest textile producer in the world; based on current patterns China may also be the largest exporter of textile and apparel products by 1985.

China's imports also point to the importance of the textile and apparel sectors. Since 1979, the import shares of materials for the textile and apparel industries have increased, reflecting a shift in China's economic priorities following the adoption of the readjustment policy. Cotton, chemical fiber, pulp, and other raw materials for textile and other light industrial production made up 17.2 percent of Chinese imports in 1979 and 24.3 percent in 1980 (Chen, 1982). In man-made fibers alone, China has become the single largest importing country since 1980 ("Chinese Textile Industry," 1982).

U.S. textile exports to the PRC have been consistent with the pattern established by China's other trading partners. Exports from the United States to China have been almost exclusively raw materials rather than manufactures. China has been an important market for U.S. cotton exports since 1978; other important commodities exported to China from the United States are man-made fibers and fabric.

U.S. imports of Chinese textiles, apparel, footwear, fur and leather products increased more than 500 percent between 1976 and 1980. Textile and apparel imports from China have continued to increase dramatically, up by 41 percent in 1980, by 73 percent in 1981, and by 32 percent in the first 10 months of 1982 (Weisskopf, 1983). When significant textile and apparel trade began between the U.S. and China in 1975, the value of textile imports was more than three times that of apparel imports. The value of textile and apparel imports approached parity in 1978, and by 1979 the value of apparel imports surpassed that of textile products. This gap has steadily widened since 1979; in fact in 1981 the value of apparel imported from the PRC was twice that of textiles (U.S. General Imports, 1982). Cotton has been the primary fiber in both textile and apparel imports throughout this period, but wool and man-made fiber imports have made significant gains and increased their shares of the PRC's total import market.

The results of the time-series cross-section analyses for PRC competitor countries for these selected categories are generally consistent with microeconomic theory, despite the distortions (e.g. quotas) which exist in this market. Demand for most of these commodities is price sensitive, and there is a significant relationship between relative price and market share for imports from countries active in the U.S. market. Of the variables studied, the previous period's market share (lag1) is the most consistently significant in explaining the variability in the current period's market share. The present period's relative price (relpr) and market share lagged two quarters (lag2) are not nearly as good predictors as lag1. There is no discernable pattern of prediction (by fiber content or by men's or women's apparel) for the categories in which relative price and lag2 are significant.

Results of the time-series cross-section analysis changed very little when PRC imports were included with its competitors and the aggregate then analyzed. This would suggest that the PRC's presence in the world market has not upset its basic adherence to expected economic patterns.

However, when PRC imports were analyzed on a micro level, differences did appear. These differences seem scattered throughout the 21 categories. They could not be attributed to a specific fiber or garment type. On the

individual category level, the demand for 9 of 21 can be described as elastic.

Government and industry officials have often contended that the PRC uses pricing strategies to enter the American market and gain market share. The Chinese government has the exclusive power to set prices, and it is frequently accused of selling goods at prices below production costs to gain foreign exchange and employ its people. The results of this study raise questions about this conclusion. In 10 of 21 categories studied the sign of the regression coefficient of the log of relative price was positive, indicating that an increase in price led to an increase in market share, a counter intuitive result.

The results of the linear regression analysis suggest that for these selected categories, the combination of relative price, market share lagged one quarter, and market share lagged two quarters is a significant predictor of the current period's market share; but relative price alone is an unreliable predictor. Relative price is significant in only three categories, while market share lagged once is significant in 12 categories, and market share lagged twice in four. The number of significant categories for each variable is fewer for the PRC than for its competitors, but the pattern of prediction in terms of strength of predictor variables is consistent.

Based on these analyses, the assumption that price is the only major factor in determining market share for Chinese textile and apparel imports cannot be supported. This research suggests the need to look beyond price to other factors which might be responsible for the Chinese success in the American market. These factors may include specific apparel or textile characteristics related to fiber content, design, or status. Marketing or service may also play a part. An examination of the categories at the TSUSA level might lend support to one or more of these explanations. Interviews with retailers and consumers who sell and purchase Chinese goods might suggest one or more factors which could be investigated further.

The years from 1976 to 1981 were years of dramatic growth for exports to the United States of textiles and apparel from the People's Republic of China. In 1976 China accounted for 3.1 percent of the total imports to the American market; by 1981 their share was 11.3 percent of the aggregate. During this period China competed with other importing countries, as well as U.S. manufacturers, for a share of the American consumer's apparel dollars.

In 1982 China was the fourth largest textile and apparel importer to the United States behind Taiwan, Hong Kong, and South Korea. From 1976 to 1982, Taiwan and South Korea also increased their shares of the import market: from 11.9 to

15.8 percent for Taiwan, and from 11.8 to 12.9 percent for South Korea. Hong Kong lost market share during this same time: 17.5 to 14.2 percent, and moved from first to second place (Department of Commerce, 1983). Even with bilateral agreements negotiated under the MFA in place, imports from all countries steadily increased from 1976 to 1982 cutting into U.S. producers' share in a minor way in some apparel categories and in a very major way in others.

Twenty-one textile and apparel categories were examined in the third objective: 13 cotton, 6 man-made fiber, and 2 wool. General conclusions are difficult to draw for these categories as an aggregate, but some patterns are evident by fiber content and by garment type.

In the aggregate on the macro level the other importing countries were the most competitive during the period studied. They increased their market share in these selected categories by five or more percentage points in twice as many categories as the PRC did, and in three times as many as U.S. producers. Increases and decreases in consumption balanced each other out, but domestic production showed twice as many decreases as increases in these categories.

In this early period of trade with the PRC, 13 of the 21 active categories covered cotton textile or apparel products. As might be expected from China's history, resource endowment, and industrial structure, cotton

products have been their most successful exports to the American market.

The consumption of textiles and apparel in these 13 cotton categories was stable over this six year period. However, U.S. production of cotton products in these categories declined by 12.1 percent, and the U.S. market share of these commodities fell by over 14 percentage points from 1976 to 1981. China made significant gains in the American cotton market, but the other importing countries did as well. Contrary to the picture sometimes drawn by the American textile industry, data presented indicate that while the Chinese have made solid advances in this market, they are not entirely responsible for the decline in the U.S. producers' share. In fact, the PRC accounted for just over one-third of the loss suffered by American manufacturers.

Consumption and production of man-made fiber apparel in these categories showed larger gains than cotton during this time period. Consumption rose 14.8 percent, and U.S. production increased 20.2 percent. The decline in U.S. market share of 3.3 percentage points was a gain primarily for the PRC.

Overall, U.S. producers were more competitive in man-made fiber and wool apparel than in comparable cotton apparel categories. For example, American manufacturers lost 10 percentage points in women's and girls' cotton

pants, while maintaining their share in women's and girls' man-made fiber pants. In general, American producers were more competitive in the female apparel market than in the male apparel market. Male apparel is more standardized and therefore easier to produce in countries far from the market. Female apparel is more sensitive to fashion changes and quick turn-around times. Therefore, retailers may prefer to buy from domestic manufacturers so that they can reorder and make changes as the fashion season develops. Domestic producers were also competitive in the wool categories examined. The U.S. price was higher than the Chinese price, but retailers were more likely to receive their shipments of domestically produced sweaters at the appropriate selling season. The timely arrival of goods ordered from countries located far from the market is difficult to assure. New and unsophisticated suppliers like the PRC are especially vulnerable to such delivery problems.

It seems clear that the PRC currently has a comparative advantage in the production of cotton textiles and apparel. In 1982 Hong Kong's cotton exports to the U.S. declined by 4 percent, the Philippines' by 10 percent, India's by 15 percent, and Pakistan's by 21 percent. Two other large cotton exporters, Singapore and South Korea, saw their shares fall by over 20 percent each from 1981 to 1982.

China is now struggling to develop its man-made fiber and wool industries to be as competitive internationally as its cotton sector. Since textile and apparel competition is worldwide, PRC's success or failure will affect textile and apparel manufacturing in many countries. American manufacturers must also compete with China and with other developed and developing countries in the world market. The U.S. ability to compete and retain comparative advantage in specific apparel categories is critical to the industry's long-term survival.

As one possible survival strategy, U.S. producers continue to press for restraints on imports from all foreign suppliers. Opinions differ among industry and government officials as to whether limiting imports is a short-term or long-term solution. The goals of the MFA, strongly supported by the United States, are to expand textile and apparel trade worldwide and to secure a greater share of world textile trade for developing countries. The Reagan administration's actions to date, while consistent with the guidelines of the MFA, have been more supportive of the domestic industry than of industry in any developing nations. This is probably the result of pressure from the U.S. industry which has been especially strong during the past several years because of stress in the domestic economy brought about by high unemployment, decreased production, and failing enterprises.

Numerous predictions have been made about the possible survival of the U.S. textile and apparel industries and about their possible directions. Three interpretations of the industry's current plight seem plausible. It can be viewed as a temporary problem which will be over when import controls are applied equitably and economic recovery takes place. A second view holds that the current status of the industry is the inevitable fate of a mature industry which must eventually lose business to foreign competitors with lower production costs.

The third possibility is that the current problems are the result of the industry's reluctance to invest resources to change and adopt new technology. Those who hold this third view suggest that a solution to this problem would be to introduce state-of-the-art technology and to outperform the world competition in research and development. The end result would be that U.S. producers would retain a somewhat smaller, but still hefty share of the market.

The PRC's textile and apparel industries, in contrast, operate under a completely different economic system. What are future possibilities under China's centrally controlled government? China's current trade pattern, surplus with developing countries, moderate deficit with industrialized ones, puts the PRC in a strong medium-term position. The Chinese can continue to sell oil and coal to industrialized countries as well as textile products in which they have a

comparative advantage. As the developing countries with which they trade develop textile industries, consistent with the product life cycle theory of trade, the Chinese will find markets for the industries which they are currently developing: simple machinery and electrical equipment such as electrical components, fans, and sewing machines.

The PRC's recent export performance is impressive, compared to the export spurts of other countries, particularly since it occurred during a period of slow world trade. The country's recent performance suggests two possible trade strategies on the part of the Chinese.

The Chinese may be following a straightforward pattern of exporting those goods in which they have a comparative advantage. They may be exchanging goods they can produce cheaply for goods which would be too expensive for them to produce domestically. China has been selling its generally labor-intensive exports at very competitive prices relative to other countries' exports of the same goods. This competitive price ratio may be explained by the PRC's cost advantage resulting from its abundant, fairly well-educated labor force. It may also indicate that the PRC is willing to accept a less favorable relative price ratio between its Chinese labor and imported technology.

This acceptance of a less favorable price ratio may be linked to the centrally planned characteristics of the Chinese economy. In most countries the benefits of

technology are generally diffused throughout the economy rather than being captured completely by the original purchaser. Only in a centrally planned system, with a single authority responsible for the total economy, can all the benefits of a technology purchase be controlled. In such a system the central government may be willing to pay more for the acquisition of technology, and this may be reflected in a less favorable price ratio between its own labor and imported technology (Hickok & Arguelles, 1983).

It is impossible to predict with certainty the PRC's future pricing strategy or trade performance. The current performance and strategy are clearly linked to a changed political outlook after the death of Mao Zedong. Sudden sweeping changes could occur again as the result of a transfer of political power. It is likely, however, that exports will continue to rise, though perhaps at a declining rate compared to the last few years. Other commodities may slowly gain importance, but textiles and apparel products will be primary components of the PRC's export trade for the foreseeable future. Imports, especially technology from developed countries, will keep pace with export growth.

The United States faces an immense challenge in dealing with China in the coming years. If the U.S. policy on export restraints on high technology goods is modified, the PRC will be a large potential market for U.S. technology. But the PRC has to export to the United States in order to

purchase goods in return. The Chinese conservative fiscal policy will not permit large deficits among its trading partners. Japan is also prepared to export high technology goods to China. The American challenge is to find a way to open its markets to Chinese goods, so that an exchange beneficial to both countries can take place. The Chinese stand ready to supply the U.S. market with textiles and apparel. The U.S. government's policy role is to balance the interests of multiple industrial sectors to arrive at an optimum solution.

Choices like these make the formulation of U.S. trade policy a complex task. There are many variables, both tangible and intangible, which must be considered. Even though circumstances may promote the selection of politically acceptable alternatives, sound economic analyses of available data should be an important input in addition to political factors. Existing trade data were examined in this research in order to present an objective view and a thorough analysis of specific aspects of textile and apparel trade between the United States and the People's Republic of China during the past six years.

The American consumer has a stake in the decisions made by the government on this issue. Chinese textiles account for 11 percent of the American market calculated on a quantity basis. The percentage is several points lower if

calculated on a value basis. Some have argued that the Chinese have gained their market share due to straightforwardly simple economics: comparable quality at cheaper prices ("Trading the China," 1983). With some exceptions, primarily in the wool categories, Chinese goods are among the lowest priced in many categories. This pricing structure benefits the lower-income American consumer. Import quotas, in contrast, benefit no consumer. A rise in price accompanies the imposition of import quotas because quotas force consumers to buy more costly domestic goods, and because they encourage exporters to send more expensive products. Importing inexpensive Chinese textile products could work to the benefit of lower-income American consumers and to retailers who market to this segment of the population. The foreign currency gained by the Chinese could be used to purchase high technology goods in which the United States has a comparative advantage, thus benefiting the American industries and workers who manufacture these products.

The final issue is one of human equity. China has over one billion people and 11 percent of the American textile and apparel import market. The Big Three, Taiwan, Hong Kong, and Korea, with a combined population of 54 million, have 43 percent of the U.S. market. There are those who argue that the Chinese are entitled to a bigger piece of the

pie. Their arguments may be based on human considerations, or on political or economic ones. It is not difficult to see how potentially important the PRC is to the United States from a political or economic viewpoint.

The need to balance the special interests of many diverse groups makes a solution to this problem especially illusive. Retailers and importers want to buy foreign goods, and the Chinese want to sell these goods to us. U.S. producers want to make and sell textiles and apparel for a profit, and American textile and apparel workers want jobs. Other U.S. manufactures want a share of the Chinese market for their products, and consumers want the best price and the widest choice possible. A simple solution is not possible. Free trade is an attractive economic concept, but not a viable option in this case.

If a certain level of protection for the American industry is accepted as a given parameter, the question becomes how should the quotas be distributed? The answer may be adherence to the spirit of the MFA rather than the letter of its law. Less developed countries need to participate in foreign trade to develop their economies. Textile and apparel manufacturing provides these struggling-to-industrialize countries one means to step up and gain foreign currency to buy the technology they need to develop further. Trade with these countries would benefit

American citizens directly by supplying less expensive garments to consumers, and less directly, but not necessarily less importantly, by the eventual development of these primitive economies, and their long-range ability to purchase high technology exports from the United States.

If the current level of protection for the American textile industry is to be maintained, and developing countries are to be granted increasing access to the U.S. market, then quotas will have to be shifted from current patterns. There are those who argue that Hong Kong and Taiwan are not LDC's as defined by the MFA. They have other industrial alternatives to the manufacture of textiles and apparel, yet together they share over 30 percent of the U.S. market. Research to define, categorize, and index the world's economies might enable the United States to redistribute access to its market more equitably among the truly "developing" nations of the world.

Economic development of one country usually means benefits for its trading partners. The U.S. needs desperately to develop its export markets; economies which are able to progress past primitive stages are potential customers for American goods. The Multifiber Arrangement's goals were designed to bring benefit to all trading nations. These goals and their end results are still valid. Free trade may not be a viable alternative, but fair trade, the

redistribution of quotas, may be the most equitable solution for American citizens and those in less developed countries as well.

Chapter VII

RECOMMENDATIONS FOR FURTHER RESEARCH

The results of this study suggest that the actions of the People's Republic of China in the U.S. market are not consistent with the patterns established by other importing countries. Factors other than price may influence China's ability to secure and maintain a share of this market. Further research is necessary to validate these conclusions and to investigate in more detail the dynamics of the Chinese presence in the U.S. market, as well as possible responses on the part of American producers. Listed below are recommendations which merit further study.

1. Hypothesize factors other than price which may be important in explaining a country's import share in the American market. Conduct research to test the strength of the identified factors.
2. Analyze, following the pattern of this study, an additional 10 categories of textile and apparel imports from the PRC which have been identified as active (subject to actual or potential restraints) categories since the proposal for this research was written. Compare the results to those of the 21 categories already studied.

3. Update the original aggregate of 21 categories yearly in an effort to identify developing patterns and trends on the part of Chinese exporters, as well as from the perspective of U.S. consumer demands and preferences.
4. Conduct similar analyses on a few selected categories with the same variables on the TSUSA level to obtain more detailed information. Select categories with differing results on these analyses in a variety of fiber types.
5. Investigate the possibility that similar price elasticities exist in categories with more standardized garment types. Select categories that contain sets of similar garments (e.g. shirts, woven and knitted) for men and women in different fiber types. Determine statistically whether the regression coefficients of the log of relative price for selected PRC categories are equal to the regression coefficients of the log of relative price for individual competitor countries in the same categories.
6. Determine if China follows a pattern like one of its competitors by doing pairwise comparisons of regression coefficients for the log of relative price for these categories for the PRC and competitor countries. Trace the early exporting trends of any country identified in order to

predict China's future actions. Consider the following limitations which would affect any predictions made on the basis of such a comparison: 1) China is unlike any other developing country in terms of area, population, or natural resources; 2) the world economic environment in the 1980's is not comparable to previous decades; and 3) real growth of China's textile industry has occurred since the establishment of the man-made fiber industry. Proven technology is available to the Chinese which was not available to textile exporting countries whose textile and apparel industries were established two or three decades earlier.

7. Investigate the domestic industries of other developed countries that import large quantities of Chinese textiles on a per capita basis to determine their strategies for competition and survival.

REFERENCES

Amembassy Beijing. Unclassified cable to Secstate, Washington, D.C., April 1979.

Apparel trade primer. Arlington, VA.: American Apparel Manufacturers Association, 1980.

Arpan, J., & Folks, R., & Shimp, T. Effective management strategies and practices in the U.S. apparel industry. Seminar at University of South Carolina, 1981.

Belluomo, M. China: a dragon or a toothless tiger? California Apparel News, April 9, 1982, pp. 18; 78-80.

Better dressed. Textile Asia, 1981, 12(11), 85-86.

Bureau of Industrial Economics. 1983 U.S. Industrial Outlook. Washington, D.C.: U.S. Department of Commerce, 1983.

Chen, N. China's economy and foreign trade. Washington, D.C.: U.S. Department of Commerce, International Trade Administration, 1982.

Chen, N., & DiFederico, E. U.S.-China trade: a decade of development and prospects for growth. Business America, June 28, 1982, pp. 2-10.

Chen, V. Hong Kong's connection with China. Japan Textile News, September 1980, 45-47.

China: International trade first quarter, 1981. Washington, D.C.: National Foreign Assessment Center, Central Intelligence Agency, August 1981. (NTIS No. ER CIT 81-004)

China readjustment policies likely to continue; trade, investment prospects remain bright. Business America, October 5, 1981, pp. 17-19.

China's textile industry. Ministry of Textile Industry, 1981 Almanac of China's economy, as translated by the Joint Publications Research Service, 1981.

Chinese textile industry in 1981. Japan Textile News, July 1982, pp. 14-15.

Curzon, G., Donges, J. B., Waelbroeck, J., de la Torre, J., MacBean, A. I., & Wolf, M. MFA forever? future of the arrangement for trade in textiles. London: Trade Policy Research Centre, 1981.

- de la Torre, J. R., Jr. Marketing factors in manufactured exports from developing countries. In L. T. Wells, Jr. (Ed.), The Product life cycle and international trade. Boston: Harvard University Graduate School of Business Administration, 1972.
- Department of Commerce official statistics compiled by the Office of Textiles and Apparel, Washington, D.C.: International Trade Administration, 1983.
- Diab, M. A. The United States capital position and the structure of its foreign trade. Amsterdam: North Holland, 1956.
- Doing business with China. Washington, D.C.: U.S. Department of Commerce, International Trade Administration, 1980.
- Emerging textile-exporting countries (USITC publication 1273). Washington, D.C.: United States International Trade Commission, August 1982.
- Fashion invasion. Textile Asia, 1981, 12(11), 86.
- Federal Register. December 29, 1982, 46(249), p. 62836.
- Finer wool. Textile Asia, 1981, 12(11), 86.
- Glad rags. The Economist, February 13-21, 1983, p. 47.
- Hager, C. J. Textiles: U.S. trade agreements, imports, and consumption (USDA Economics, Statistics, and Cooperatives Service No. ESCS-75). Washington, D.C.: U.S. Government Printing Office, 1979.
- Harrod, R. (Ed.) International trade theory in a developing world. New York: St. Martin's Press, Inc., 1963.
- Henderson, J. M., & Quandt, R. E. Microeconomic theory a mathematical approach (2nd ed.). New York: McGraw-Hill Book Company, 1971.
- Hickok, S.A., & Arguelles, R. China's rapid trade growth and impact on the world economy. Federal Reserve Bank of New York Quarterly Review, Winter 1982-83, 41-51.
- Hirsh, S. The United States electronics industry. In L. T. Wells, Jr. (Ed.), The Product life cycle and international trade. Boston: Harvard University Graduate School of Business Administration, 1972.

The History and current status of the multifiber arrangement. U.S. International Trade Commission, publication 850, 1978.

Hoy, H. J., & Shaw, J. J. The United States' comparative advantage and its relationship to the product life cycle theory and the world gross national product market share. Columbia Journal of World Business, 1981, 26(1), 40-52.

Japan External Trade Organization (JETRO). China a business guide-the Japanese perspective on China's opening economy. Tokyo, Japan: Press International, Ltd., 1979.

Kreinin, M. E. International economics a policy approach (3rd ed.). New York: Harcourt Brace Jovanovich, Inc., 1979.

Large increase seen in Chinese apparel imports. Japan Textile News, September 1980, 43-44.

Lee, J. H. China continues to emphasize trade and foreign investment. Business America, February 8, 1982, pp. 44-45.

Leontief, W. Domestic production and foreign trade: the American capital position re-examined. Proceedings of the American Philosophical Society, 1953, 97, 332-349.

Leung, P. Regional advance. Textile Asia, 1981, 12(9), 129-130. (a)

Leung, P. Spinning starts. Textile Asia, 1981, 12(11), 86-88. (b)

Liang, L. The Textile industry in China. Textile Industries, 1972, 136(8), 41-45.

Ludlow, N.H. A guide to market information on China. In C. MacDougall (Ed.), Trading with China. London: McGraw-Hill Book Company, 1980.

MacDougall, C. Introduction. In C. MacDougall (Ed.), Trading with China. London: McGraw-Hill Book Company, 1980.

Miller, R. L. Economics today. San Francisco: Canfield Press, 1973.

National pace-setter. Textile Asia, 1981, 12(7), 80.

Naya, A. Natural resources, factor mix, and factor reversal in international trade. American Economic Review, 1967, 57, 561-570.

Obenski, B.J. Nonwovens and other textiles in China. Textile Industries, 1982, 146, 76-82.

Probable economic effect on domestic industries of the designation of the People's Republic of China as a beneficiary developing country for purposes of the U.S. generalized system of preferences (USITC Investigation No. 332-123). Washington, D.C.: United States International Trade Commission, 1981.

Profitable pigs? Textile Asia, 1981, 12(11), 88.

Qi, W. China a general survey. Beijing: Foreign Language Press, 1979.

Quarterly economic review of China, Hong Kong, North Korea annual supplement 1981. London: The Economist Intelligence Unit, Ltd., 1981.

28th quarterly report to the Congress and the Trade Policy Committee on Trade Between the United States and the nonmarket economy countries during July-September 1981. (USITC Publication 1209.) Washington, D.C.: United States International Trade Commission, 1981.

29th quarterly report to the Congress and the Trade Policy Committee on Trade Between the United States and the nonmarket economy countries during 1981. (USITC Publication 1236.) Washington, D.C.: United States International Trade Commission, 1982.

31st quarterly report to the Congress and the Trade Policy Committee on Trade Between the United States and the nonmarket economy countries during April-June 1982. (USITC Publication 1294.) Washington, D.C.: United States International Trade Commission, 1982.

Quirk, J.P. Intermediate Microeconomics. Chicago: Science Research Associates, Inc., 1976.

Scheier, S. Shipments by U.S. to China up 67%. Daily News Record, April 12, 1982, p. 1.

- Seidel, L. Textiles in, to and from China. Textile Industries, 1981, 145(7), 26-29.
- State Statistical Bureau, PRC. Statistical yearbook of China 1981. Hong Kong: Economic Information and Agency, 1982.
- Trading the China card. The Wall Street Journal, January 18, 1983, p. 30.
- Uno, O. The Textile industry in China. Paper presented at the ITMF 1982 Annual Conference, Tokyo, Japan, October 1982.
- U.S. general imports of cotton, wool, and man-made manufacturers textile and apparel import report, Washington, D.C.: International Trade Administration, 1982.
- U.S. textile and apparel import program. International Agreements and Monitoring Division, Office and Textiles and Apparel, Department of Commerce, 1982.
- U.S. trade with China 1976-1981. Industry Assessment Division, Office of Textiles and Apparel, Department of Commerce, 1982.
- Ventures at work. Textile Asia, 1981, 12(11), 84-85.
- Vernon, R. International investment and international trade in the product cycle. Quarterly Journal of Economics, 1966, 80, 190-207.
- Verzariu, P. An update on countertrade with China. Business America, January 11, 1982, pp.8-10.
- Weisskopf, M. China, U.S. renew touchy textile talks. The Washington Post, January 1, 1983, p. A-24.
- Wells, L. T., Jr. (Ed.) The Product life cycle and international trade. Boston: Harvard University Graduate School of Business Administration, 1972.

APPENDICES

APPENDIX A

GLOSSARY OF TEXTILE AND APPAREL TRADE TERMS

Base: Under the MFA, the establishment of a new quota level for a category is set in terms of the trade (quantity) in that category during the first 12 months of the succeeding 14 months. From this base the next year's quota is negotiated.

Basket: The basket is the residual measured in square yards of a group ceiling not accounted for by specific category limits in that group.

Bilateral: A written agreement governing apparel and textile trade between the U.S. and another country. Currently the U.S. has bilateral agreements covering about 90 percent of its total textile and apparel trade.

Carryover: Carryover permits the exporting country to utilize some of any unused ceiling from one agreement year to apply to the subsequent year's ceiling.

Carryforward: Carryforward allows the exporting country to borrow from the next year's ceiling to apply to the present year's level. In combination, carryover (C.O.) and carryforward (C.F.) can utilize up to 11 percent of the receiving category's ceiling in SYE. However, only seven percent can come from carryforward. These provisions apply to cotton and man-made fiber apparel. Wool apparel categories have less flexibility.

Category: An apparel/textile product or aggregation of similar products for import control purposes. There are several thousand apparel and textile products covered under most multifiber bilateral agreements. These products are aggregated into 104 categories: 39 for cotton, 24 for wool, and 41 for man-made fiber. Apparel items are defined in 61 categories. The numbering system of the categories designates both the fiber content and the product. All 300 categories are cotton; 400, wool; and 600, man-made fiber. The first digit indicates fiber content and the second two digits the product line.

Ceilings

Aggregate Ceiling: The total amount of square yard equivalent (SYE) a country can export to the United States in any year under the terms of its bilateral.

Group Ceiling: A breakdown of the aggregate ceiling into groupings. In the Korean bilateral the Group I ceiling of 124 million square yards covers yarn, fabric, and made-up and miscellaneous goods of cotton and man-made fiber products. The sum of the groups equals the aggregate ceiling.

Chief Value: Chief value means the dollar value of the predominant fiber in an apparel item.

Chief Weight: Chief weight means the weight of the predominant fiber in an apparel item. The distinction between chief value and chief weight is important. U.S. tariffs on apparel are based on chief value, and the price of fiber can determine whether the item falls in the cotton or man-made tariff schedule. Man-made fiber apparel has a higher rate of duty than cotton apparel. Most other countries apply duty rates by chief weight, but efforts to change the U.S. structure have not been successful.

CIF: Import data accounting for the cost of insurance and freight which raises the imported value of goods. Most countries except the U.S. levy tariffs on the CIF value.

CITA: The Committee for the Implementation of Trade Agreements consists of representatives from the Departments of State, Commerce, Labor, Agriculture, and the Treasury, as well as a non-voting participant from USTR. CITA is responsible for administering textile and apparel import restraints.

Consultation Levels

DCL: A designated consultation level is a second-tier control level for categories. DCLs are usually above existing levels of trade and once reached cannot be exceeded unless the U.S. agrees to further shipments. They usually apply to categories in which trade is not as great as those for which specific limits have been set and are determined annually through the consultation procedure with each bilateral country with which they exist.

MCL: A minimum consultation level is the level up to which any country may ship in any category before the U.S. will request consultations for controlling imports in that category. MCLs apply by default to all categories which do not have specific ceilings or designated consultation levels. For cotton and man-made fiber apparel the MCL is 700,000 SYE; for wool products it is 100,000 SYE.

Economies of Scale: A situation in which an increase in all factors of production brings about a more than proportionate increase in output.

EEC: The European Economic Community: France, Italy, West Germany, Denmark, Belgium, Netherlands, the United Kingdom, Ireland, Luxembourg, and Greece.

Embargo: An absolute prohibition on the entry of textiles and apparel in a category and is imposed when a category ceiling has been filled.

Existing Trade Level: The current 12 month level of trade in a category from a country.

FAS: Import data by the value of goods "free alongside the ship" in the foreign port. The U.S. levies its tariffs on the FAS value of the imported product rather than CIF.

Flexibility: Flexibility is the degree of variation permitted under the MFA and bilateral agreements in the volume of products which can be shipped in the aggregate, in group ceilings, and in categories with specific limits. Flexibility includes swing, carryover, and carryforward.

GATT: The General Agreement on Tariffs and Trade is the international framework which establishes the ground rules for worldwide trade among its signatories.

Globalization: A system of import controls limiting the total amount of apparel that could be imported each year from all sources based on historical trade patterns and the U.S. domestic market. Within the overall limit, specific limits would be established for individual apparel items.

IRTAC: The Importers and Retailers' Advisory Committee consists of importers and retail representatives appointed by the Secretary of Commerce. It advises the government on apparel and textile trade policy.

LTA: The Long Term Arrangement negotiated in 1962 for five years and covering only cotton products. It was twice renewed and replaced by the MFA in 1974.

- MFA:** The Multifiber Arrangement, the international document negotiated under the auspices of GATT, which allows its signatories to control trade of apparel and textiles as an exception to GATT rules. Article 3 of the MFA provides the international authority and criteria by which the U.S. can impose unilateral restraints on apparel imports. It is used only when bilateral negotiations fail to achieve restraints. Article 4 of the MFA contains the bilateral negotiating authority.
- MFN:** Most-favored-nation is a designation which permits a nation to take advantage of U.S. tariff reductions since 1930 such that no other country pays a lesser tariff rate for imports into the U.S.
- MLTAC:** The Management-Labor Textile Advisory Committee consists of industry and labor representatives appointed by the Secretary of Commerce. It advises the government on textile and apparel trade policy.
- Non-Market Economy:** The economic system of a country, usually Communistic, which operates outside the market system; goods and services are allocated by administrative actions rather than by the forces of supply and demand.
- NTB:** Non-tariff barriers to trade which can be special regulations or specifications that in effect restrict imports.
- Overhang:** The difference in volume between what is actually shipped in a category in any one agreement year and the allowable ceiling for that category in any year.
- Quota:** Under the MFA, a quota is the limit set on the trade in any category, group, or aggregate ceiling.
- SL:** A specific limit on the quantity of a category which a country can ship to the U.S. Specific limits are designated in a bilateral agreement and normally cannot be changed unless both parties agree.
- STA:** The Short Term Arrangement negotiated in 1961 with about 20 countries covering trade in cotton products for one year. It was the predecessor of all subsequent international arrangements covering textiles and apparel.
- Surge:** A sharp increase in imports that disrupts or threatens to disrupt the domestic market.

Swing: Swing is the ability to use a portion of the unfilled ceiling of one category to fill another. In the case of cotton and man-made fiber apparel, swing of seven percent of the receiving category is normally allowed. If category X has a one million square yard ceiling, the exporting country can add 70,000 more to it with swing and reduce another category by a like amount.

SYE: The square yard equivalent of imports of apparel and textile articles. It is an overall generic measure of trade in quantity. With the exception of fabric, all apparel and textile products are assigned a conversion factor which converts units into SYE. For example, a dozen men's and boy's woven shirts represents 24 square yards equivalent. SYE is an essential measure because limits within bilaterals are set in this unit.

Transshipment: The exportation of goods from one country which are in fact, the product of another country. Transshipments are used to breach quotas.

TSB: The Textile Surveillance Body created by the MFA to monitor activities under the arrangement. Consisting of nine importing and exporting countries, it reviews terms of bilateral agreements and unilateral restraints and serves as a sounding board for complaints from signatories to the MFA. It has only advisory authority. The United States is a permanent member of the TSB.

TSUSA: The Tariff Schedule of the United States Annotated. It is a seven digit number which permits detailed definition of products for tariff collection on imports.

USTR: The United States Trade Representative. The Chief Textile Negotiator reports to the United States Trade Representative.

807: Paragraph 807 of the U.S. Tariff Schedules permits the export of pieces of garments, their assembly into apparel offshore, and their reimportation with duty paid only on value added in the assembling. Garments imported under paragraph 807 are not charged against individual country quotas.

(Apparel Trade Primer, 1980).

APPENDIX B

MAJOR TEXTILE TRADE AGREEMENTS

Title and year negotitated	Subject
Hawley-Smoot Act, 1930	Tariffs on cotton textile imports
Reciprocal Trade Agreement Act, 1934	Allow for reduction of tariffs on cotton textile imports
Bilateral agreements, after 1934	Reduce tariffs on cotton textile imports
General Agreement on Tariffs and Trade, 1947	Reduce tariffs multilaterally
Voluntary agreement with Japan, 1957	Restrict cotton textile imports from Japan
Short Term Cotton Agreement, 1961	Control cotton textile imports
Long Term Cotton Agreement, 1962	Control cotton textile imports
Bilateral agreements, after 1962	Control textile imports of cotton, wool, and man-made fibers
Multifiber Arrangement, 1974 1977 1981	Extend tariff and quantity agreements to textile imports of wool, man-made, and cotton fibers

Source: Hager, Textiles: U.S. Trade Agreements, Imports, and Consumption, p. 7.

APPENDIX C

MFA SIGNATORIES

Austria
Bangladesh
Bolivia
Brazil
Canada
Colombia
Czechoslovakia
Dominican Republic
EEC
Egypt
El Salvador
Finland
Ghana
Guatemala
Haiti
Hungary
India
Indonesia
Israel
Jamaica
Japan
Korea
Malaysia
Mexico
Peru
Philippines

Portugal (for Macau)
Romania
Singapore
Sri Lanka
Sweden
Switzerland
Thailand
Trinidad and Tobago
Turkey
UK (for Hong Kong)
U.S.
Uruguay
Yugoslavia

Source: International Agreements and Monitoring Division,
May 1982.

APPENDIX D

MFA SIGNATORIES WITH WHICH THE U.S. HAS BILATERAL
AGREEMENTS (as of March 1983)

Expiration Date

A. With Specific Restraints:

Brazil	3/31/85
Colombia	6/30/86
Dominican Republic	5/31/83
Haiti	2/29/84
U.K. for (Hong Kong)	12/13/87
Hungary	12/31/86
India	12/31/86
Indonesia	6/30/85
Japan	12/31/85
Korea	12/31/87
Macau	12/31/83
Malaysia	12/31/84
Mexico	12/31/85
Pakistan	12/31/86
Philippines	12/31/86
Poland	12/31/84
Romania (wool and man-made fiber)	12/31/84
Singapore	12/31/85
Sri Lanka	4/30/83
Thailand	6/30/83
Yugoslavia	12/31/83

B. Without Specific Restraints:

Czechoslovakia	None
Egypt	None
Greece	None
Jamaica	None
Peru	None

MFA NON-SIGNATORIES WITH WHICH THE U.S. HAS
BILATERAL AGREEMENTS

A. With Specific Restraints:

Mauritius	9/30/85
Costa Rica	12/31/83
Taiwan	12/31/87

B. Without Specific Restraints:

Malta	None
Nicaragua	None
Portugal	None
Spain	None

**The vita has been removed from
the scanned document**