

898

95th Congress }  
2d Session }

JOINT COMMITTEE PRINT

ANTICIPATING DISRUPTIVE IMPORTS

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A STUDY

PREPARED FOR THE USE OF THE

JOINT ECONOMIC COMMITTEE  
CONGRESS OF THE UNITED STATES



SEPTEMBER 14, 1978

Printed for the use of the Joint Economic Committee

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U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1978

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## LETTERS OF TRANSMITTAL

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SEPTEMBER 7, 1978.

*To the Members of the Joint Economic Committee:*

Transmitted herewith for the use of the Joint Economic Committee and other Members of Congress is a study entitled "Anticipating Disruptive Imports." It examines the growth of imports into the United States by product category from eight developing countries and assesses the impact of these imports upon domestic industries manufacturing similar products. The trends indicated by these data were studied further by the authors during visits to three of the eight countries under examination. They reach a series of conclusions regarding the outlook for the future that warrant serious consideration.

The views expressed in this study are those of the authors and do not necessarily represent the views of the committee members or the committee staff.

Sincerely,

RICHARD BOLLING,  
*Chairman, Joint Economic Committee.*

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AUGUST 31, 1978.

HON. RICHARD BOLLING,  
*Chairman, Joint Economic Committee, Congress of the United States,  
Washington, D.C.*

DEAR MR. CHAIRMAN: Transmitted herewith is a study entitled "Anticipating Disruptive Imports" by Stephen B. Watkins and John R. Karlik. This study attempts to identify which U.S. industries are likely to face heavy competition in the next 5 to 10 years from imports of products manufactured in developing countries. It includes an analysis of the growth of imports by specific product categories from 1971 through 1975 and the vulnerability of domestic industries manufacturing the same goods to import competition. The preliminary conclusions derived from this analysis were tested by Mr. Watkins and Dr. Karlik during visits they made to Taiwan, Hong Kong, and South Korea in December 1977. In their summation, they assert that "both the data analyzed in this study and the information gathered during our visits to three of the most advanced developing countries tend to confirm the hypothesis that in the future the United States will confront increasingly intense foreign competition across the full range of manufactured products.

This study is also a useful attempt to put the prospective export potential of the advanced developing countries into a specific context. It breaks new ground in the trade adjustment field by focusing on future problems rather than on industries that have already suffered severe import competition.

#### IV

The committee is very grateful to the authors for their diligent and imaginative approach to potential trade problems. Dr. Karlik was a member of the committee staff when the paper was prepared and is currently serving as the Deputy Assistant Secretary for International Research in the Department of the Treasury. Mr. Watkins is a Foreign Service Officer who studied a number of international economic questions during his assignment as a congressional fellow with the committee. He has since returned to the Department of State.

The views expressed in this study are those of the authors and do not necessarily represent the views of the members of the committee or the committee staff.

Sincerely;

JOHN R. STARK,  
*Executive Director,*  
*Joint Economic Committee.*

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## ANTICIPATING DISRUPTIVE IMPORTS

BY STEPHEN B. WATKINS AND JOHN R. KARLIK\*

This study attempts to identify which U.S. industries are likely to face heavy competition in the next 5 to 10 years from imports of products manufactured in developing countries.

The United States is committed to a liberal trade policy offering relatively unhampered access to our markets. Moreover, we have long espoused a market-oriented growth strategy for the developing countries. With this strategy in mind, and in cooperation with the other industrial countries, the United States has accepted an obligation to assist through appropriate trade policies the expansion of manufactured exports from low-income countries. Together with almost all other OECD nations, we now offer tariff preferences to developing countries on imports of a broad range of manufactured goods.

At the beginning of the current GATT trade negotiations, the developing countries requested that they be granted "special and differential" treatment. This was agreed on in general terms as an appropriate form of assistance to the development effort, although the tough questions of how much and what kind of special treatment are only now being faced.

In his September 26, 1977, speech to the Board of Governors, World Bank President Robert S. McNamara emphasized the benefits that trade expansion could confer upon the developing countries. He argued for an increase in developing country manufactured exports from \$33 billion in 1975 to \$114 billion in 1985. This increase in exports President McNamara described as necessary to achieve the targeted per capita growth rate of 2 percent annually for the poorest countries and 4 percent for the middle tier of developing nations. Whether or not the ambitious export targets are attained, the United States and other industrial countries will face a continuing and very likely growing burden of adjusting to expanding imports from developing nations.

A liberal policy has important costs, as well as benefits, for our economy. Economic theory suggests that developing countries will concentrate their efforts to export manufactured goods on products utilizing their most abundant resource—low-cost labor. These labor intensive products are bound to compete with some of the weakest sectors of the U.S. economy. The very success of our economy in paying higher wages by emphasizing capital-intensive production and advanced technology means that industries which do not conform to this pattern are likely to be in difficult straits if they are exposed to import competition. Theory says that this confrontation is to be expected, if not welcomed, since our economy should be moving workers and resources out of labor-intensive, low-technology industries into the kinds of production which will produce higher incomes for all.

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\*The authors gratefully acknowledge the assistance given them by the staff of the International Trade Commission in preparing data, Professor Raymond Vernon for his comments, and numerous government officials and private businessmen in Taiwan, Hong Kong and South Korea for their insights. The conclusions, of course, are the sole responsibility of the authors.

Textiles and footwear are the classic examples of labor-intensive U.S. industries beset by import competition from low-wage developing countries. Both these industries are particularly import-sensitive, because domestically they employ substantial numbers of low-skilled and geographically dispersed workers for which there are few alternative employment opportunities. The sad result has been a long and frustrating history of last minute attempts to curb imports and shore up failing firms. Such protectionist efforts contradict our commitment to liberal trade and to helping the developing countries expand their exports. Still, we must acknowledge and deal with the serious social and economic problems of these hard-pressed industries.

In the Trade Expansion Act of 1962, the Congress recognized that the cost of adjusting our economy to the dislocations caused by expanding trade should not be borne entirely by the particular affected industries. However, the adjustment assistance provisions of the Trade Expansion Act have generally been conceded to be a failure. This judgment is shared by both the unions and the companies involved, as well as by the bureaucrats who administer the program. The reasons for failure are diverse, but perhaps are best summed up by labor's oft repeated comment that adjustment assistance is essentially burial assistance.

Although Congress liberalized the criteria for adjustment assistance and simplified the administrative process for awarding it in the Trade Act of 1974, the basic thrust remained. Firms or groups of workers, usually unions, register a complaint with the government asserting that their economic welfare has been impaired or is threatened by imports. If investigation shows that significant injury is occurring or is threatened, the government can offer monetary, technical, and training assistance to both firms and workers. There is also a program for assisting affected communities.

The problem with this scheme is that assistance usually comes only long after injury has occurred. Moreover, the affected firms and workers will invariably prefer higher tariffs or quotas to adjustment assistance since the former relieves them of having to adjust to the new situation. A constructive third option would be a program that looks ahead to future prospects and problems, rather than backwards at past mistakes and injuries.

With the foregoing considerations in mind, the Joint Economic Committee undertook the present study to see if we could develop an "early warning" system to forecast import disruption. Such a system could bring many benefits. Industries could foresee impending problems and move to meet foreign competition or enter new lines of business. Furthermore, our trade negotiators could take a particularly close look at further concessions for products on the early warning list, and perhaps undertake studies to insure that trade conditions were, indeed, fair—i.e. that imports were not being subsidized.

## METHODOLOGY

In 1973, the Committee on Ways and Means of the U.S. House of Representatives published a study entitled, "Comparison of Ratios of Imports to Apparent Consumption, 1968-72." This study was prepared by the staff of the U.S. Tariff Commission, now renamed the

International Trade Commission (ITC). The Tariff Commission staff went through all seven U.S. tariff schedules and grouped imported goods into over 1,500 categories similar to those used in collecting data on domestic production in the United States and on exports from this country. The task was a difficult one, requiring a thorough knowledge of industrial sectors, because the U.S. tariff schedule was not constructed to parallel the Standard Industrial Classification, according to which industry-by-industry data on domestic output are collected.

Under the provisions of the 1974 Trade Act, the International Trade Commission has continued compiling the same type of data as helpful information for U.S. representatives in the current round of GATT negotiations. The Joint Economic Committee requested access to this product-by-product information on imports from selected developing countries during 1971 through 1975 to use as the basis for an initial attempt to foresee which items might be particularly troublesome in future years. The Commissioners and staff of the ITC were kind enough to agree to our request, and have been extremely helpful in doing their best to satisfy our needs.

We focused on manufactured goods, since promoting exports of these products has recently become a prime objective in the development plans of many low-income countries. Such exports serve to diversify their trade and provide jobs for the unemployed.

Rather than attempt to study imports from all developing countries, we decided to concentrate on the largest exporters of manufactured products among the less developed. To this list was added India, a country with great potential for export expansion. Thus, the final list included Brazil, Hong Kong, India, Mexico, the Philippines, Singapore, South Korea, and Taiwan. Most of these countries have notably successful histories of exporting manufactured products, and expect to enlarge on this base. They are already among our largest trade partners, accounting for 29 percent of total U.S. imports from the developing countries in 1975. This figure includes commodity and raw material imports, and if limited to manufactured products, the share would be substantially higher. In fact, according to a study by the Commerce Department, four of the countries selected, Hong Kong, Mexico, South Korea, and Taiwan, accounted for two-thirds of U.S. imports of manufactured products from developing countries in 1974.<sup>1</sup> Moreover, U.S. imports from these eight countries have been growing rapidly—up 135 percent from 1970 to 1975. The following table illustrates this growth.

U.S. IMPORTS  
(In millions of dollars)

	1970	1975
Brazil.....	669	1,464
Hong Kong.....	945	1,578
India.....	298	548
Mexico.....	1,222	3,059
Philippines.....	476	751
Singapore.....	81	532
South Korea.....	370	1,416
Taiwan.....	549	1,938
Total.....	4,610	11,286

<sup>1</sup> "U.S. Trade With Developing Countries," U.S. Department of Commerce, June 1975.



While the figures show total imports from these countries, only in the case of Brazil, Mexico, and the Philippines are there significant imports of raw materials and basic commodities.

As pointed out in the previously mentioned Commerce Department study, the 1970's have seen a dramatic increase in the share of total U.S. imports of manufactured products that came from developing countries. This share rose from 13 percent in 1972 to 20 percent in 1974. The developing country share of total U.S. imports of finished consumer goods was 36 percent in 1974. Since the countries included in the present study account for the overwhelming share of imports of manufactured products from developing nations, it is reasonable to assume that one or more of these countries is likely to be involved in most future cases of disruptive imports.

In analyzing the trade data, it was necessary to use somewhat arbitrary selection criteria. Since we were looking for rapidly growing imports of products which might cause disruption, several sets of criteria were considered. Those eventually adopted had to be broad enough to include the potentially significant cases, and at the same time narrow enough to yield a manageable list.

To be included, imported products had to meet each of the following requirements:

A. *Product selection.*—(1) Non-agricultural products processed beyond the raw material state. (2) There exists in the United States a private industry manufacturing competitive products.

B. *Developing country participation.*—Imports from developing countries were more than 10 percent by value of all U.S. imports in the specified product category during 1975.

C. *Absolute size of imports.*—Total imports from the developing countries were \$1 million in 1974 or 1975.

D. *Imports by country.*—At least one of the eight supplying countries had exports of \$500,000 to the United States in 1974 or 1975.

E. *Import growth.*—At least one of the eight supplying countries showed export growth averaging 20 percent per year from 1971 through 1975.

The criterion that the product be manufactured excludes imports which are essentially raw materials for U.S. industries, such as lumber, alumina, waste and scrap materials, all items which otherwise met the requirements for inclusion. On the other hand, plywood, sticks and blocks of wood, and similar items were considered products processed beyond the raw material stage. The requirement that there be a U.S. private industry resulted in the exclusion of metal coins, articles of ivory or beeswax, ferro nickel, and plastic flowers. In applying the other criteria relating to trade performance, some exceptions were made to include particular items that, because of special circumstances, failed to meet one or more criteria. For example, Christmas tree lights were selected, although the import growth requirement was not met due to the particular circumstances of the disastrous 1973 Christmas season, which occurred at the height of the energy crisis and when such lights were a momentary focus for energy conservation efforts.

## RESULTS

Each imported product had to meet all of the criteria in order to be selected. The imports thus identified are shown in the appendix. They total 158 items, or approximately 10 percent of the groupings of imports of manufactured goods. The eight countries studied had a total of 337 supplier positions of imports which met the criteria. In other words, often two or more of the eight countries met the criteria for a particular product.

Most of the 158 items fall naturally into several broad industrial categories. There are 18 items consisting of textiles and garments, 21 electronic items, 8 ceramic and glass products, 7 footwear, 6 leather items, 5 iron and steel, and 5 categories of wood products. The largest number of identified items were 25 in the category of various metal manufactures, such as tools, power transmission chain, and sewing machine parts. However, since the number of entries in any particular category largely depends on how finely divided are the categories for a particular industry, the absolute number of entries for an industrial grouping is not particularly significant. Furthermore, the broad industrial categories include many items which are neither competitive with each other nor produced by the same sort of industrial process.

Categorizing the potentially disruptive imports into broad industrial groupings does, however, give an idea of where competition can be expected to be the most intense. Depending on the nature of the domestic industry, as well as the trend in domestic consumption, imports in these industrial groupings are potentially disruptive.

Our methodology seemed reasonable in that it identified a number of industry groups which have long been sensitive to import competition, such as electronics, textiles, and footwear. The more interesting results of our analysis were the identification of industries which have not been recognized as subject to import disruption. These include manufactured wood products, leather garments and accessories, and a broad range of fabricated metal products. However, before concluding that imports are likely to lead to disruption in the future, one must investigate the status of domestic production and consumption as well as the volume of U.S. exports of these products.

### DOMESTIC PRODUCTION AND CONSUMPTION

Ideally, in order to estimate the potential for import disruption, it would be desirable to know the trends of domestic production and consumption, the proportion of domestic consumption supplied by imports, and the characteristics, number and concentration of employees in the domestic industry. Unfortunately, the available data at the disaggregated level required is exceedingly fragmentary and, in many cases, unavailable. In general, domestic consumption had to be estimated as domestic production plus imports minus exports, and employment data were available, if at all, only for the years when industrial censuses were collected. In many cases, broad estimates, even guesses at general trends had to be used. These, however, did represent the informed judgment of knowledgeable industry analysts.

Based on this material, each of the 158 product categories was evaluated in terms of its apparent potential for import disruption. A

rating scale ranging from very vulnerable through moderately and slightly to not vulnerable was used. The ratings as assigned are shown in the appendix.

In general, an industry was rated as highly vulnerable if it was already experiencing declines in production and employment, or if these quantities had been constant for several years in face of rapidly expanding U.S. consumption of its product. In highly vulnerable industries the share of imports in apparent consumption had risen by 10 percentage points or more over the last 5 years, and there was no reason to expect a change in the trend. Moderately vulnerable industries also showed rising import penetration, but of a smaller amount. Domestic production was constant or perhaps even rising slowly, if consumption was also rising. Low vulnerability industries usually showed small or erratic changes year-to-year in import penetration. Low vulnerability was also assigned to industries with growing import penetration if there were significant offsetting factors, such as growing U.S. exports, rapidly rising consumption, or a high rate of technological innovation to which U.S. producers usually have first access.

A fourth category of no or slight vulnerability was used for industries whose future seemed assured despite rapidly growing imports. For example, natural drugs include a range of products, some of which are produced almost exclusively in the United States. Thus, our exports largely offset imports, and the U.S. industry thrives even though import penetration overall is close to 80 percent.

Since our interest is in prospective changes over the next 5 to 10 years, not much attention was paid to the current absolute level of import penetration. Thus a market currently showing 60 percent import penetration could be considered less vulnerable to a further increase than one which showed a 20-percent level today, depending upon the future prospects of the two industries. Certain of our industries have learned to live with very high levels of import penetration, and their prospects can be considered relatively bright, despite rapid increases in import levels. For example, U.S. producers of cameras and photographic equipment have specialized in a narrow range of products which seem to have an assured future. In the case of watches, our producers either have a substantial technological lead, as in the solid state digital models, or have developed a specific corner of the market for themselves, e.g., Timex and Texas Instruments.

It should be emphasized that imports of all these items are growing rapidly, but only some of them are likely to cause disruption. The explanation is that the trend in imports can be due to many factors, some of which imply no injury to domestic producers. In some cases, apparent consumption is growing rapidly due to changes in technology, fashion, or for other reasons. A growing volume of imports may be accommodated relatively easily because, for example, the domestic market is expanding also and domestic firms are neither directly competitive nor threatened. This appears to be the case for agricultural machinery, and for the related item of sprayers and dusters. In certain other cases, U.S. production is concentrated in areas which are not directly competitive with imports.

A few comments are in order concerning the vulnerability ratings assigned to particular products. For instance, it will be noted that

many wearing apparel categories have not been assigned high vulnerability ratings despite the well known sensitivity of this industry to import competition. Based on the production and employment data, we believe the ratings as assigned are reasonable, but also that they reflect the trade distortions inherent in our present system for controlling textile imports. Under the series of bilateral export restraints in effect with most of the developing countries, U.S. imports of wearing apparel grow only slowly in the aggregate, although particular categories can increase more rapidly if imports of others are reduced. These shifts depend on changes in relative demand and profitability for the various items. Thus, the slow growth or in some cases even decline in imports of certain types of apparel reflects not the competitiveness of foreign producers, but rather the distorting effects of our import restraint system. As for the future, continued restraints on apparel imports appear highly likely.

Another industrial grouping which is difficult to assess is that of small electronic products, particularly calculators and transceivers. Transceivers (mostly CB radios) and electronic calculators have boomed as a result of remarkable improvements in technology and reductions in cost. Import growth in these industries was of course to be expected, and in part because domestic industries could not meet the surge in demand. Although the domestic industry has expanded production rapidly in recent years, its outlook is not secure unless a technological lead can be maintained. The relatively less sophisticated CB radio production is likely to be more threatened than are calculators. Moreover, within the calculator business, the U.S. industry may have to shift away from assembly operations, particularly of lower cost models, and concentrate on the production of sophisticated transistors and integrated circuits.

Apart from the many possible causes for rapidly rising imports, there are other factors to be considered. In some cases there may be a largely offsetting increase in our exports. This appears to be the case of magnetic recording media; U.S. producers of magnetic tape are exporting their product in bulk for assembly and packaging. Much of the final product is then returned to the United States.

Another interesting example is presented by the baseball and softball glove producers. Imports captured the bulk of this market during the 1960's, but since the beginning of this decade, U.S. producers have made a small comeback. Import penetration has declined slightly, but is still over 90 percent in terms of the number of gloves sold. The current wholesale value of imported gloves is about \$4, but domestically produced gloves have a comparable value of over \$20. The U.S. producers are largely selling in a distinct market. It seems probable the American-made gloves sell on the basis of their quality, and to consumers, such as professionals, for whom price is not a factor. Thus, if the American producers can maintain their quality differential, as they are apparently doing, they should enjoy assured sales.

While not taken into account in calculating import sensitivity, the individual product groupings analyzed differ greatly in the absolute size of the industries they cover. For example, agricultural machinery has an estimated employment of 100,000, while the U.S. mosaic tile industry has some 700 employees, and the bismuth industry, only 60.

For certain items, it is not possible to obtain even rough estimates of production, consumption, or employment. These items therefore could not be rated. Nevertheless, some of them appear to have a high potential for import disruption. In the case of wire rope, for example, imports are rapidly increasing from Brazil, India, Mexico, South Korea, and Taiwan. From 1971 to 1975, such imports from developing countries increased by almost 10 times, and rose from 2 percent to 14 percent of total wire rope imports. These changes are in terms of the quantities imported, and it is interesting to compare them with imports measured by dollar value. This comparison shows there was a more rapid increase in the per unit price of imports from the industrial countries, which rose 229 percent. On the other hand, the wire rope prices for imports from the developing countries rose only 138 percent.

Since we do not know whether, or to what extent, there was a shift in the product mix of imports which might account for changing unit values, it is not possible to draw firm conclusions from the data. Nevertheless, these data tend to confirm the thesis that new imports of manufactured products from developing countries are standardized items that become established in our market through price competition. Such imports serve our economic objectives by helping to curb inflation.

#### PRELIMINARY CONCLUSIONS

This study is an initial attempt to forecast potentially disruptive imports. The weakest element in the analysis is our lack of knowledge about the domestic condition of industries producing items that compete with rapidly growing imports. Nevertheless, the list of products appearing in the appendix indicates that a number of industries deserve closer examination than they have generally received in the past. Already widely recognized sore spots crop up again in the list, as well as some relatively new items.

The items on the list may be divided into approximately a score of industry groups. While individual analysts might differ somewhat about the groupings, one plausible categorization is the following:

- 1 Manufactured wood products.
- 2 Apparel.  
Ceramics and glass.  
Iron or steel rods, wire, pipe, nails and screws.
- 1 Hand tools.  
Agricultural machinery.  
Typewriters, sewing and office machines.
- 5 Electronic equipment and parts.
- 3 Footwear.
- 1 Hats and gloves.  
Cameras and photographic equipment.  
Musical instruments.  
Firearms and parts.  
Bicycles and sports equipment.  
Toys.  
Beads and pearls.  
Brushes.
- 1 Umbrellas.
- 1 Leather and items made from leather.

The numbers to the left of some items indicate how many product categories in that group were judged to be highly vulnerable to import competition. These assessments of vulnerability, as indicated above, are based on data relating to developments from 1970 through 1975. Whether in future years an industry now judged to be moderately vulnerable to import competition moves up the scale to high vulnerability or down to low can be forecast only on a basis of more careful analysis of conditions affecting production here and abroad of that particular product.

At the outset of this study, we had two fundamental questions in mind. First, are the developing countries exporting new or more sophisticated products to the United States and is this trend likely to continue or even accelerate in the future? Second, is the international competitive position of the United States being squeezed between the advanced industrial nations, which have largely eliminated the technological lead that the United States enjoyed for some 20 years after World War II, and developing nations that are becoming exporters of progressively more sophisticated standardized products?

In answer to the first question, we conclude that while newer and more sophisticated products are indeed being exported to the United States by developing countries and challenging domestic industries, most of the items on the list are simple and well recognized as areas in which sales from abroad have already subjected manufacturers in the United States to intense competition. Among these traditional items are apparel, ceramics and glass, footwear, hats and gloves, bicycles, toys, and leather products. The newer items include handtools, agricultural machinery, typewriters and office machines, electronic equipment, and cameras and photographic equipment. In both categories, we are able to see the workings of the product cycle.

Raymond Vernon extended analysis of the product cycle to international trade and the location of industry.<sup>2</sup> He observed that because of high personal incomes, the large domestic market, and high wages, new consumer goods and labor saving machines were likely to be developed first in the United States. These products would initially be exported to other industrial countries and, in smaller volumes, to developing countries as well. As the technology required to manufacture these new products became well known, and as the items themselves became standardized, production would shift to other industrial nations and later to developing countries for domestic consumption and for export to the United States and third country markets.

In speculating about exports of manufactured foods from developing countries, Vernon outlined the following characteristics:

Their production function is such as to require significant inputs of labor; otherwise there is no reason to expect a lower production cost in less-developed countries. At the same time, they are products with a high price elasticity of demand for the output of individual firms; otherwise there is no strong incentive to take risks of pioneering with production in a new area . . . . The implications of remoteness also would be critical; products which could precisely be described by standardized specifications and which could be produced for inventory without fear of obsolescence would be more relevant than those which had less precise specifications and which could not easily be ordered from remote locations. Moreover, high value items capable of absorbing significant freight costs would be more likely to appear than bulky items low in value by weight.<sup>3</sup>

<sup>2</sup> Raymond Vernon, "International Investment and International Trade in the Product Cycle," *Quarterly Journal of Economics*, May 1966, pp. 191-207.

<sup>3</sup> *Ibid.*, pp. 203-204.

The shift of the textile industry from the United States to Japan and now to even lower-wage countries is a classic example of this process. The same type of transfer is occurring with a lag of several years in the automobile and electronics industries.

Vernon's foresight is confirmed in a recent study by Donges and Riedel.<sup>4</sup> In analyzing the pattern of international specialization that developing countries have pursued in fostering exports of manufactured goods, they noted:

The industries exhibiting the strongest comparative advantage according to 1972-73 data were cotton fabrics, footwear, textile clothing, tanneries, canned fruit, household equipment, jewelry, and wood products . . . . However, the sample countries appear to have developed a comparative advantage in a number of light manufacturing products of which electrical equipment, metal containers and telecommunications equipment are the most prominent.<sup>5</sup>

Since Vernon outlined the mechanism a decade ago, our analysis of rapidly growing imports contain few, if any, surprises. However, the process by which manufacturing operations are transferred from the United States to developing countries seems to have accelerated. Indeed, in some cases, several intermediate steps have been skipped when multinational corporations have decided to transfer assembly and even in a few instances fabrication operations abroad with the intention of exporting the completed product to the United States.

#### FIELD VISITS

In an attempt to test our preliminary conclusions, we reviewed first-hand the plans and expectations of some of the developing countries supplying exports to the United States at high growth rates. We wanted to know how they expect their exports to change over the next 5 to 10 years. Due to the limitations of time and the expense involved, it was only possible to do this for three of the Asian suppliers: Hong Kong, South Korea, and Taiwan. Short visits were made to each of these countries for consultations there. We were able to talk with businessmen, economists, and foreign trade experts both in and out of government. We also examined the official development plans which Taiwan and South Korea have set out to guide their economic planning.

All three countries expect to see substantial shifts in the composition of their exports to the United States. These changes are not only the result of conscious efforts to diversify and maximize the value of their industrial production, but are also responses to the pressures of international economic developments. For example, all three countries are major textile suppliers, and all three expect to see a decline in the relative share of textiles in their exports. In addition to the influence of quota limitations, these countries face increasing competition from lower-income developing countries that still have the advantage of a virtually inexhaustible supply of very low-wage labor. Both Taiwan and Hong Kong have reached essentially full employment of the types of workers important to their traditional export industries; particularly the young, single women who work as seamstresses and do the light assembly operations. South Korea will be in this position soon. Furthermore, demographic projections foretell a slowdown in the growth of the workforce in these important categories.

<sup>4</sup> Juergen B. Donges and James Riedel, "Expansion of Manufactured Exports in Developing Countries: An Empirical Assessment of Supply and Demand Issues" *Weltwirtschaftliches Archiv*, Band 113, Heft 1, 1977, pp. 58-87.

<sup>5</sup> *Ibid.*, p. 68.

Thus the dominant objective in each of these countries is to upgrade export production by gradually shifting workers and other resources into more highly skilled or more capital-intensive industries. The desired result will be to keep the total value of exports growing in the face of external competition and internal resource limitations. However, both Taiwan and South Korea expect a slightly lower export growth rate than in the recent past, and all three countries anticipate that exports will be a declining share of their national product.

What do these trends imply in terms of specific industries? In Hong Kong, where population and physical resources are most severely limited, both government and private sector economists expect to see the shift primarily in terms of upgrading job skills. They anticipate production of more sophisticated, though not more capital-intensive, products. Examples would be watches and cameras, and fabricated parts thereof, in which Hong Kong already has a substantial start.

Although the Hong Kong government has no formal development plan, it anticipates that output of manufactured products is likely to grow more slowly in the future as the existing industrial structure is deepened. Thus, the production of household appliances and light tools, including electrically operated tools, should develop on the basis of the existing metal fabrication and light electrical industry. More sophisticated electronic products, such as integrated circuit production and medical electronics, are likely to take over as the transistor radio assembly type operations move on to lower-wage developing countries. Quality jewelry and optics should also expand as workers' skills are upgraded.

As Hong Kong's exports diversify, businessmen will aim at more specialized markets. There may be some shift from producing final consumer goods to components for incorporation into consumer products. An example of this would be auto ignition sets and auto tool kits.

In our visit to the Republic of China, we found plans for a similar upgrading of export production. In Taiwan, however, a good part of this change will result from conscious direction under the government's development plan. Another difference is that they expect to emphasize capital and resource-intensive industries. Unlike Hong Kong, industries of this type can be organized on a physical and financial scale in Taiwan that is large enough to be competitive internationally. Thus, heavy industries such as steel and basic chemicals are slated for rapid expansion. Much of their output will be for domestic use, but it should also change the composition of Taiwan's exports. For example, large scale shipbuilding is just getting underway, and there will undoubtedly be some direct steel exports.

While the share of textiles and apparel in Taiwan's exports is expected to gradually fall, there is an effort to raise quality and value. In electronics the normal upgrading via the product life-cycle theory is being hastened by some special factors. Specifically, the restriction of Japanese color television exports to the U.S. market is sure to boost Taiwan's production, which is just getting underway. Color televisions are a good example of the more sophisticated electronic products which are expected to gradually replace the assembly of the simpler sorts of transistor products. In all these light industries, a new level of vertical integration is expected, as local component and sub-assembly suppliers are being established to furnish items previously imported for the final assembly operations.



The situation in Korea is only slightly different. That country's comprehensive development plan includes an extensive discussion of foreign trade, forecasting its growth over the next few years. Like both Taiwan and Hong Kong, South Korea expects diversification in both products and markets. The U.S. share of Korean exports, which declined from about 35 percent in 1971-73 to 30 percent in 1975, is projected to fall to 28 percent by 1981. While exports will continue to be a leading sector of Korean development, their growth rate is expected to decline from the phenomenal 32 percent annually during the most recent 5-year plan to 16 percent annually from 1976 to 1981.

The product structure of Korean exports will also be diversified. Heavy industry, including steel, shipbuilding, and the export of capital goods, will be emphasized. Korea is already doing a significant business in turnkey plant construction projects, especially in the Middle East. This fits in with Korea's intention to increase the value of its exports of machines and machine parts from \$289 million in 1975 to \$1,415 million in 1981.

A Korean Government marketing and production feasibility study of machinery and parts found the best export potential in the following product lines, most of which are producer or capital goods:

Transformers, milling machines, crushers, textile machinery, industrial sewing machines, chemical machinery, bearings, blowers and fans, gasoline engines, grinders, electric motors, forklift trucks, nuts and bolts, refrigeration machinery, pumps and compressors, dies and molds, bulldozers, switchgear, farm tractors, extruders, injection molders, hydraulic machinery, boilers, and valves.

The electronics industry is expected to enjoy an only slightly lower rate of growth than machinery. Building on an already substantial base, exports are to rise from \$409 million in 1975 to \$1,940 million in 1981. A production and marketing study in this area identified twenty-four items of particular potential for Korean production. These range from consumer products, such as calculators, quartz watches, color television sets and video tape recorders, to electronic components, such as light emitting diodes, integrated circuits, and automotive electronic equipment. Also listed were various producer goods, such as telephone switching gear, cash registers, minicomputers, and computer peripheral hardware.

Korea's increasingly diversified economy seems capable of exploiting the expanded range of industrial technologies that these plans imply. Furthermore, the Korean government has had a successful record of directing a capitalistic structure by encouraging both foreign and domestic entrepreneurs along desired lines. The government promotes favored industry through the provision of industrial sites, low-cost credits, export marketing assistance, and special treatment for necessary imports.

This brief review of export prospects foreseen by three major LDC suppliers permits some cautious conclusions. Interestingly, there were several suggestions that at least for products from these particular countries, import competition may be less troubling to U.S. industries in the next decade than in the recent past. First, product diversification in and of itself should reduce the intensity of required adjustments and spread the costs over a wider spectrum of U.S. competitors. A

frequent complaint in the past has been precisely the concentration of imports on very specific lines, thus causing severe distress for certain industries or even parts of industries. Second, market diversification implies some relative shift away from the United States. Third, it seems likely that the foreign trade concentration of each of these Far Eastern suppliers will, while remaining very high in absolute terms, be somewhat reduced in the coming years. As their economies develop, services will increase relative to manufactures and domestic consumption relative to exports.

A fourth reason for anticipating alleviation of import competition is that a number of the products that are expected to receive major encouragement are not very import sensitive in the United States. For example, the shipbuilding industries of Taiwan and South Korea will compete largely with Japan. Moreover, U.S. shipbuilders are heavily protected from import competition. Another example is the production of electronic watches, expected to boom in both South Korea and Hong Kong. In the U.S. market these watches should largely provide competition either for other importers already established here, particularly Switzerland and Japan, or for highly diversified U.S. electronics manufacturers. The chemicals industries which are expected to develop in Taiwan and South Korea likewise will largely be for domestic use. U.S. chemical producers should be adequately protected by the highly capital-intensive nature of their production and the substantial freight costs for bulk chemical shipments.

All three supplying countries we examined expect some shift away from consumer goods toward producers goods, including heavy industrial equipment. They also expect to increase their exports of component parts for sale to industrial customers, as automotive electronics and tool sets. There are several reasons for thinking that imports of this type are likely to be less disruptive than the finished consumer goods these suppliers have previously concentrated on. First, they are generally not labor-intensive products of low-wage industries that employ workers with few alternative employment opportunities. Second, they are products whose sale will depend more heavily on the prosperity of U.S. business, being in demand during times of high economic activity in the United States, precisely when our economy can afford the adjustment costs most readily. Third, to the extent that these products offer severe price competition, they should provide an offsetting advantage to the U.S. industry which imports them, and allow it to sell its final products at reduced cost.

We do not wish to overstress these points. First of all, our sample of three countries is extremely small and entirely drawn from the most advanced developing countries. The changes they anticipate are themselves another phase of the product life cycle that in the past brought them low-wage, labor-intensive industries. The cycle is moving on and in the process, these industries are expected to shift toward countries which are considerably less developed. Thus, import disruption in the U.S. market may not be lessened at all, but only its source shifted to various other developing countries. This supplier shifting poses a special problem of orderly marketing agreements, a problem now being illustrated by the effect of our restraints on Japanese color television exports. Both Taiwan and South Korea had already found this to be a growth industry, and now one can expect production there to rise even more rapidly.

In comparing what we found in our survey of three Far Eastern suppliers with the results of our analysis of import data, certain similarities can be seen. The growth industries forecast by these three Asian countries are already in some cases exporting to the United States. These are principally the fabricated metal products, such as tools and housewares. Watches and metal parts for various machines are also prominent. The import statistics show many electronic items, but they are not finely enough divided to show separately the higher valued, more sophisticated products our Asian suppliers expect to emphasize in the future.

#### SUMMATION

An analysis of the growth of manufactured goods imported into the United States from developing countries and of domestic industries competing against these imports, supplemented by visits to three of the eight countries studied, leads us to the following tentative conclusions.

First, the advanced developing countries, some of which are really young industrial nations, can be expected in coming years to export a few new but generally more sophisticated products to the United States.

Second, this trend towards sophistication may well accelerate in terms of the diversity of developing country exports to the United States. Whether it will also accelerate in terms of the volume of imports of individual products is more doubtful, since nations such as Taiwan or Korea are striving to diversify the market destination of their exports. Moreover, both of these countries expect their exports to grow more slowly in the future than in the past.

Exports of electrical and non-electrical machinery from these advanced developing countries are likely to shift in composition from consumers' goods to components, intermediate products and producers' goods. Exports of electrical products, while also exhibiting some shift towards components and producers' goods, are likely to continue to be heavily concentrated on consumer items and in part to substitute for similar Japanese exports to the United States. One reason for expecting a decline in the growth rate of total exports from Taiwan, Korea and perhaps other countries is a shift in the emphasis of development plans towards fostering basic industries, such as steel and chemicals, for import substitution.

Third, the consequences of these trends for import competition in the United States are uncertain, but at least mildly encouraging. If there is less emphasis in the advanced developing countries on supplying large volumes of particular types of consumer goods—as seems probable on the basis of our limited interviews—import competition may not produce as severe adjustment strains here as in the past. Producers' goods industries in the United States employ fewer low-skilled workers with limited employment options than do domestic consumers' goods industries. Moreover, major firms manufacturing producers' goods use the most advanced technology available in this country and generally make a wider variety of products than consumers' goods firms. However, continuing competition for consumers' goods industries may come from a less advanced tier of developing countries.

Fourth, while import competition in the United States from the young industrial countries we examined may be less severe in the future, these same nations are likely to be tougher competitors than ever before for sales in other markets. These advanced developing countries have the potential for becoming the prime suppliers of basic machine tools, smaller construction equipment, motorcycles and automobiles, industrial components, and standardized electronics products both to their own domestic markets and to less developed countries.

Fifth, to anticipate the impact on U.S. domestic industries of competition from imports of manufactured goods supplied by the advanced developing countries requires a great deal of detailed knowledge about the level of capitalization and productivity in particular U.S. industries. Other factors one would need to know include the degree of geographical concentration, rates of innovation, the level of education and extent of the skills possessed by the workers in these industries, other employment possibilities, rates of investment and worker training abroad, the intentions of government planners and businessmen in developing countries, and the extent to which the output of new or more sophisticated products may be sold in the domestic markets of the producing countries or in third-country markets. Clearly, forecasting is a complex business.

Sixth, both the data analyzed in this study and the information gathered during our visits to three of the most advanced developing countries tend to confirm the hypothesis that in the future the United States will confront intense foreign competition across the full range of manufactured products. This competition is likely to be more severe in export markets than domestically. The most advanced industrial countries are pursuing high technology and are girding themselves to compete in such traditional American preserves as wide-bodied aircraft and computers. The young industrial countries are fostering their own steel, chemical and auto industries and are preparing to export a more advanced stage of manufactured goods to the industrial world and to developing nations. The developing countries will be attempting to export textiles, shoes, transistor radios and hand tools, for example, to all other countries.

The United States is likely to retain an unchallengeable competitive advantage only in products and techniques that are at the very forefront of technological development or that require a huge integrated market for their creation. Examples of these are satellite communications and photography, deep sea mining and the very largest electrical generating and delivery systems. Development of these technologies requires government support for initial research, assistance in the primary stages of marketing, and government purchases of a significant share of the final output. Offering these technologies in the export market thus brings the U.S. Government up against the sensitive and difficult problems of export subsidization and government procurement in international trade.

What do these conclusions imply for appropriate U.S. policies? The U.S. Government will be able to take remedial action only in a limited number of critical cases. Examples of such actions are the Commerce Department's program to strengthen the competitive ability of the

American shoe industry, the reference price system applied to steel imports by the Treasury Department, and the orderly marketing arrangement the President's Special Trade Representative has negotiated with Japan limiting imports of color television sets. The competitive challenge will be much too pervasive to be met with individual responses such as these. Instead, broad market-oriented initiatives are needed to minimize the pains of adjusting to import competition and to bolster the competitive abilities of our own industries. Maintaining a high level of employment and a growth rate at least consistent with the potential, while rejecting barriers to imports, can minimize the strains of adjustment without accelerating inflation. Allowing exchange rates to adjust promptly in response to balance-of-payments disequilibria, and fostering domestic investment and innovation via tax reductions can strengthen our competitive position. All of these steps would seem to be essentials if we are to respond effectively to the challenge we face.

## APPENDIX

### RAPIDLY GROWING IMPORTS FROM THE DEVELOPING COUNTRIES, AND RELATED VULNERABILITY OF U.S. INDUSTRIES

NOTE.—The following list is a preliminary effort, as described in the text of this report, to identify rapidly growing imports of manufactured products from the developing countries. It also attempts to evaluate the vulnerability of the U.S. industries competing with these imports on the basis of employment, production, and consumption trends. In particular, it should be stressed that the ratings are tentative and further analysis could well revise them.

Product description	Supplying countries <sup>1</sup>	U.S. vulner- ability <sup>2</sup>	U.S. jobs (thousands) <sup>3</sup>
Sticks and blocks, wood	T	LV	NA
Baskets and bags	M, T, K, P, HK	HV	NA
Jewelry boxes, wood	T	NV	4 1.0
Household utensils, wood	T	MV	4 2.3
Tools and handles, wood	B	LV	4 2.8
Picture and mirror frames of wood	M	MV	4 3.3
Blinds, shutters, screens, shades	T	LV	NA
Hardwood plywood	K	MV	4 14.3
Wallpaper	K	NV	4 4.2
Albums	K	LV	4 1.8
Countable cotton cloth	M	—	NA
Certain woven fibers, cotton	M	—	NA
Woven fabrics of vegetable fibers, except cotton	B	—	NA
Garments for rainwear, hunting, etc., of coated fabrics	T, K, HK	MV	6 15.4
Men's and boy's coats, jackets, suits	M, T, K, I, S, P, HK	HV	6 88.7
Playclothes and outerwear	K, P	LV	6 77.2
Men's and boy's:			
Shirts	B, K, T, I, P	MV	7 117.9
Sweaters	T	LV	6 76.5
Raincoats	K	LV	6 15.4
Pajamas	T	LV	7 117.9
Women's, girl's, infant's blouses	M, I, S, P	MV	6 49.2
Women's, etc.:			
Shirts	T, I, S, P, HK	HV	6 76.5
Sweaters	T, K, S, P	MV	6 76.5
Slacks and Shorts	M, I, S, P	LV	6 113.3
Skirts	I	MV	NA
Raincoats	T	LV	6 15.4
Coats and jackets	M, T, K, I, S, P	MV	6 56.9
Saccharine	K	—	NA
Barium sulphate	M	NV	4 1.2
Rennet and other enzymes	B	NV	NA
Menthol	T	—	NA
Natural drugs	M	NV	NA
Glue stock	B	LV	NA
Edible and photo gelatin	M	LV	NA
Inedible gelatin and glue	B	MV	NA
Antimony compounds	T	LV	NA
Mosaic tiles	K	LV	7
Ceramic tiles	K	MV	7 4
Earthenware and stoneware	K, B	MV	4 5.1
Ceramic art and ornamental	B, M, T, K	—	NA
Sheet glass	M	LV	6 2.9
Illuminating glassware	M	LV	NA
Christmas ornaments, glass	T	LV	NA
Household glassware	M, T	LV	NA
Cadmium	M	—	4
Silicon and ferrosilicon	T	—	10.0
Wire rods of iron or steel	B	MV	NA
Wire of iron or steel	T, K	LV	NA
Pipes of iron or steel	K	LV	NA
Unwrought zinc	M	—	4 1
Wrought zinc	K	LV	NA
Bismuth	K	MV	1
Wire rope	B, M, T, K, I	—	NA
Nails	K	—	NA
Wood screws	I	LV	NA

See footnotes at end of table, p. 19.

Product description	Supplying countries <sup>1</sup>	U.S. vulner-ability <sup>2</sup>	U.S. jobs (thousands) <sup>3</sup>
Harness and saddle hardware	M, K	MV	NA
Pliers	K	MV	3.0
Pipe tools, wrenches, etc.	T, I	LV	11.0
Files and rasps	I	MV	7.0
Vices and clamps	T	LV	4.0
Fixed knives, forks, spoons, etc.	T, K	MV	NA
Scissors and shears	T	HV	NA
Power transmission chain	T, S	HV	NA
Household and sanitary wares of metal	B, T, M, K	MV	NA
Miscellaneous articles, aluminum	T	—	NA
Sprayers and dusters	M, T	LV	47.0
Agricultural machinery	M	NV	495.6
Sewing machines and parts	B, T, K	LV	45.6
Handtools, nonelectric	M	MV	43.2
Typewriters and parts	S	MV	49.5
Calculating machines	B, M, T, K, S, HK	LV	41.0
Office machine parts	B, M, K, P, HK	—	419.6
Tape players, recorders	M, T, K, S, HK	HV	45.6
Ball and roller bearings	T	LV	58.0
Rectifiers, inductors, parts, etc.	M, S, HK	MV	439.0
Electrothermic house appliances	M, T, K, S, HK	MV	419.0
Loudspeakers	M, T, K	LV	48.0
Audioamplifiers	K, S	MV	1.4
Miscellaneous equipment	T	HV	1.0
TV receivers	T, K	MV	428.6
TV apparatus and parts	B, M, T, K, S	HV	12.0
Radios	T, K, S, HK	MV	20.0
Transceivers	T, K	MV	45.2
Combination electronics and parts	T, K	—	42.9
Electrical capacitors	M, K	HV	430.0
Resistors	M	MV	421.0
Voltage and current regulators	M	MV	1.8
Electronic tubes	B, M, S	HV	6.7
Transistors	K, S, HK	—	421.0
Integrated circuits	M, T, K, S, HK	MV	479.0
Other semiconductors	M, T, K, S, HK	LV	45.0
Photocells, transistor, and IC parts	M	LV	33.0
Electrical articles and parts	M, T, K	—	423.0
Pleasure boats	M, T	LV	448.0
Nonrubber footwear:			
Women's	B, M, T, I, P	HV	NA
Men's	B, M, T, K	MV	NA
Children's	B, M, T, K	HV	NA
Athletic footwear	T, K	—	NA
Slippers, etc. of leather, rubber or plastic	M, T, K	HV	NA
Protective footwear, rubber	T, K	LV	NA
Sneakers	T, K	MV	NA
Cloth headwear	K, HK	MV	NA
Hats and caps, unspun vegetable	T	—	NA
Miscellaneous headwear	M, T	—	NA
Gloves, cloth	T, K, P	LV	NA
Leather gloves	M, K, P, HK	HV	NA
Rubber gloves	T	—	NA
Rubber, plastic gloves with fabric	T, K, P	—	NA
Handbags, leather and other	B, M, T, K, I, P	MV	419.9
Luggage, leather and other	M, T, K, P	LV	467.9
Eyeglasses, etc.	M, T, K	LV	427.5
Watches and movements	M, T, K	MV	412.0
Clocks and movements	T, K	MV	418.0
Parts for timing devices	T, K	—	NA
Parts of watches	T, K, S, HK	—	45.0
Watch cases and parts	T, HK	—	4.5
Photographic cameras	S, HK	LV	NA
Photographic flashes and meters	K, S, HK	MV	NA
Magnetic recording media	M	LV	NA
Other string instruments	T, K	—	NA
Other musical instruments	HK	—	NA
Musical instrument parts	M	—	NA
Pistols	B	NV	416.0
Shotguns	B	LV	416.0
Parts, rifles, and pistols	K	MV	11.4
Fishing tackle	M, T, K	NV	NA
Bicycles	T, K	MV	49.7
Bicycle parts/tires and tubes	M, T	—	NA
Bagatelle, billiard and pool	T	—	NA
Game machines	M, T, S, HK	—	NA
Table tennis equipment	HK	MV	NA
Badminton and parts	T	—	NA
Baseball gloves	T, K	LV	4.4
Tennis balls	K	NV	NA
Tennis racquets	T	LV	NA
Other tennis equipment	T	—	NA

See footnotes at end of table, p. 19.

Product description	Supplying countries <sup>1</sup>	U.S. vulnerability <sup>2</sup>	U.S. jobs (thousands) <sup>3</sup>
Other snow sports equipment.....	T, K, P, HK.....	—	NA
Models.....	K, HK.....	—	<sup>10</sup> 58.0
Dolls.....	T, K.....	LV	<sup>4</sup> 10.7
Toys.....	K, S, HK.....	MV	<sup>10</sup> 58.0
Cameos, pearls, beads, etc.....	T, I, P.....	—	1.0
Feathers, down articles, etc.....	T, HK.....	LV	NA
Toilet brushes.....	T, h, HK.....	MV	NA
Artist brushes.....	K.....	—	NA
Umbrellas.....	T.....	HV	NA
Fireworks.....	B.....	—	<sup>6</sup> 1.0
Rubber, plastic wearing apparel.....	M, T, K, HK.....	HV	NA
Bicycle tires/tubes.....	T, K.....	HV	NA
Other tires.....	B, T, K.....	MV	NA
Other tubes.....	B, T.....	LV	NA
Christmas ornaments, rubber or plastic.....	T.....	—	NA
Clothespins.....	HK.....	MV	1.0
Dog leashes, etc.....	T.....	MV	NA
Pneumatic mattresses.....	T.....	—	NA
Leather, partly manufactured.....	M.....	LV	NA
Articles of leather.....	K.....	MV	NA
Leather wearing apparel.....	B, M, T, K.....	HV	NA
Shell articles.....	T.....	—	.2

<sup>1</sup> Principal supplying countries among the 8 developing countries whose imports were considered. The 8 countries, together with the abbreviations used in this table, are: B-Brazil; HK-Hong Kong; I-India; M-Mexico; P-the Philippines; S-Singapore; K-South Korea; T-Taiwan.

<sup>2</sup> The U.S. industry competing with the listed product was rated according to the following scale: NV—No or only slight vulnerability; LV—low vulnerability; MV—medium vulnerability; HV—high vulnerability. A dash indicates sufficient information to rate the U.S. industry was not available.

<sup>3</sup> U.S. employment from Census Bureau, U.S. Department of Commerce or ITC estimates. Data are for 1972 (the most recent U.S. industrial census year) unless indicated otherwise.

<sup>4</sup> 1975.

<sup>5</sup> Includes employment in rainwear and raincoats.

<sup>6</sup> 1976.

<sup>7</sup> Includes employment in shirts and pajamas.

<sup>8</sup> Includes employment in all sweaters and knit shirts.

<sup>9</sup> Includes employment in all small arms.

<sup>10</sup> Includes employment in toys, models, games, and children's vehicles.

