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IMPORT PENETRATION IN THE MANUFACTURING SECTOR

by

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EXECUTIVE SUMMARY

This study examines the issue of import penetration and injury to domestic manufacturing industry. The problem is that import-injury is typically remedied by the introduction of protectionist measures which obviously limits the potential export growth of the trading partners. Occasionally protectionism will be introduced when the underlying causes of injury to a domestic industry are factors other than imports. Therefore, it is important to be able to distinguish between the causes of injury to domestic industry in order to guard against the improper introduction of protectionism measures. Of particular interest, is the extent to which imports from the LDCs are causing injury to firms and workers in the industrial countries.

The introductory section clarifies the problem to be analyzed, i.e., the relationships between imports, injury to domestic firms and workers, and possible policy responses to

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import competition.

The second section surveys world manufacturing activity and trade in manufactured products. The LDCs as a group have experienced healthy growth in manufacturing activity (as measured by manufacturing valued added, MVA) but they still account for only 10 percent of world MVA. Moreover, the LDCs' growth in exports of manufactured products has far exceeded that of their growth in MVA, but from a smaller base. Thus, by the end of 1984 their share of world exports of manufactured products was only 10 percent -- the same as their share of world MVA. It must be recognized, however, that LDC exports are heavily concentrated by country since almost 70 percent of LDC exports of manufactured products originate in Hong Kong, the Republic of Korea, Singapore, India, Brazil, Mexico, Argentina and Pakistan. Though all regional groupings of LDCs experienced growth in manufactured exports the performance varied across groups with the LDCs in Africa and the Asia Subcontinent growing more slowly than the other groups.

Section 3 examines the linkage between import penetration and injury to domestic industry. Criteria were examined (a) to identify injury and (b) to distinguish between injury caused by imports and injury caused by other factors such as weak domestic demand. Increasing imports in the presence of a healthy expansion of domestic output would occur without causing injury. Thus, in order for imports to cause injury domestic output must

decline and imports must increase (both measured in real terms, i.e., net of inflation). However, if domestic output is declining but domestic consumption is declining more rapidly, any injury caused by imports would be secondary to the injury caused by the declining domestic market.

These criteria are applied to data for the EC, Japan and the US. Four broadly defined industry sectors are identified as facing sufficient import competition to cause injury to domestic industry, namely the textile and clothing industries in the EC and the clothing and footwear industries in the US. Six additional cases involving four industries are identified in which the tests did not conclusively reject import-injury, namely footwear, leather, and rubber products in the EC and textiles, leather, and rubber products in the US. Thus, a total of five industries in two import markets were identified as potentially being impacted with injurious import competition. Japan seems to have avoided import-injury.

Since allegations of import injury are often based on import penetration data (i.e., import-consumption ratios), a second examination is conducted. Using the same sample of broadly defined industry sectors, 21 cases of potential import-injury are identified -- ten in the EC, one in Japan, and ten in the US. In each of these cases the import-consumption ratio was at least 15 percent and was increasing by at least one percent annually. Eight of these 21 cases involve the same five industries as

identified on the basis of trends in production, consumption and trade, namely, textiles, clothing, leather, and rubber products in the EC and clothing, footwear, leather, and rubber products in the US. In all 13 of the remaining cases domestic output was expanding indicating that injury is not an issue.

The next question to be addressed is: Are imports from the LDCs a major contributor to import-injury in the five sectors identified above? This question is answered on the basis of two criteria, namely the share of imports supplied by the LDCs and the rate of growth of imports originating in the LDCs. On the basis of both market share and growth rates, the LDCs are identified as major contributors to import-injury in three cases, namely the clothing, footwear, and leather products industries in the US. US imports of rubber products from the LDCs account for less than 25 percent of total imports but are growing quite rapidly; thus, future import-injury may be an issue.

Intra-EC imports dominate EC trade in all of the industries though the LDCs are major suppliers of extra-EC imports of textiles, clothing, and leather products. But even in these industries imports from the LDCs are not growing significantly faster than imports from other nonEC countries.

It must be recognized, however, that world trade in textiles and clothing are controlled by numerous OMA's as authorized under the GATT Multifibre Arrangement. In the absence of these OMA's it is possible that imports from the LDCs would constitute a much

higher share of the market and be growing more rapidly.

Section 4 presents the results of an exploratory case study of import penetration in the US. This study emphasizes the data problems inherent in observing import-injury. Recall that import penetration data indicated that 21 cases of import-injury existed whereas production trends revealed that in 13 of these cases domestic output was expanding to indicate that no injury exists. This result emphasizes that import penetration data alone may tend to overstate the number of import-injury cases.

The problem is that most countries of the world collect data on international trade using different product classifications that are used in collecting data on the domestic economy such as production, consumption, employment, and other characteristics of industrial activity. Thus, in order to conduct an integrated analysis of import-injury it is necessary to concord data from different sources and collected on the basis of different product classifications.

The simplest solution to this problem is to aggregate products into very broadly defined industrial sectors such as those examined in section 2 of this study. However, such data covering broadly defined sectors might conceal more than they reveal about import-injury. After all individual firms and workers suffer from import-injury not industries, sectors or industrial branches. Is it not possible that import-injury is a problem for a narrowly defined product (e.g., radio and TV

receivers) when it does not seem to be a problem for a broadly defined industry (electrical machinery) because the domestic industry is dominated by a different product (e.g., heavy electronic machinery) which is facing an expanding market?

Section 4 examines a relatively large sample of more narrowly defined products imported into the US using the same test criteria as above. As expected, the two branches identified as facing import-injury are clothing and footwear; however, not all subsectors of these industries are so impacted. For example, outerwear and athletic footwear are not identified as facing import-injury. Conversely, some subsectors of those broadly defined industries determined to be competitive with imports are identified as being impacted by imports. Of the 13 subsectors so identified, seven involve products for which the domestic market is stagnant or declining; this implies that the major source of injury to the industry is the lack of growth in the domestic market. The other six product categories are facing significant import competition; these products are women's handbags, personal leather goods, radio and TV receivers, passenger cars, watches and clocks, and dolls and stuffed animals.

As before, the same product sample was examined using import penetration criteria with similar results. Five broadly defined sectors are identified as facing import-injury, but in three of these sectors domestic output was expanding in real terms. The remaining two import-impacted sectors were clothing and footwear.

At the subsector level 39 products (of a total of 72 products in our sample excluding clothing and footwear) were identified as potential import-injury products, i.e., the import-consumption ratio was at least 15 percent and growing by at least one percent annually. Of these 39 products the import-consumption ratio is growing very slowly for 13, domestic output is growing in real terms for 18, and the US market is declining in real terms for one. The remaining seven product subsectors are characterized by domestic consumption that is growing, though modestly, domestic output that is stagnant or declining and imports that are growing; these products are leather, women's handbags, personal leather goods, radio and TV receivers, passenger cars, watches and clocks, and dolls and stuffed animals.

The LDCs are clearly the more significant suppliers of only three of these seven products, i.e., dolls and stuffed animals, women's handbags, and personal leather goods. Further they provide roughly half of US imports of three other products, i.e., leather, radio and TV receivers, and watches and clocks. And finally they supply less than one percent of US imports of passenger cars.

IMPORT PENETRATION IN THE MANUFACTURING SECTOR

1. The Problem

The industrial nations of the West have experienced dramatic economic growth during the post-War period generating significant improvements in the standards of living of their peoples. The growth in world trade was an important contributor to this trend. This growth in trade was, in turn, significantly due to reductions in barriers to trade that were negotiated under the auspices of the General Agreement on Tariffs and Trade (GATT). These negotiations resulted in an orderly international trading system, based on the principles of nondiscrimination and reciprocity. The philosophy of freer trade dominated, though free trade does not exist nor is it ever likely to exist.

Whether a particular GATT round effectively reduces trade restrictions ultimately depends upon how governments interpret and administer the resulting agreements. The most recent negotiations produced a number of agreements (called codes of conduct) which limit the extent to which governments distort trade through such policies as subsidies, government purchasing preferences for domestic firms, etc. However, due to the extreme pressures facing governments to limit import access to domestic markets these codes have not fully been implemented. Governments today are essentially protectionist, notwithstanding their

agreement to initiate a new round of negotiations (the Uruguay Round).

We must recognize, however, that protectionism is really not an international trade policy but instead a domestic policy aimed at maintaining the existing structure of domestic industry, output and employment. Protectionism does have international impacts but it is motivated to achieve domestic economic objectives. We must also recognize that protectionism is the result of political forces that are stimulated by economic adversity.² Specific protectionist measures that are introduced to appease political pressure often have little beneficial effect on the underlying economic adversity.

Protectionism tends to fail for three reasons. First, protectionism is the result of a political process that often results in measures being introduced that do not apply to the imports that actually cause damage to the industry facing import competition. For example, in the late 1970s orderly marketing agreements (OMAs) were negotiated between the U.S. and Taiwan and South Korea to restrict their exports of shoes; these OMAs essentially limited U.S. imports of children's shoes, sporting footwear, and miscellaneous nonleather footwear whereas the import-sensitive U.S. firms produce adult leather footwear which

2. R.E. Baldwin, The Political Economy of Postwar U.S. Trade Policy, New York University Graduate School of Business Administration, Bulletin 1976-4, 1976.

is more directly competitive with imports from Italy, Spain and Brazil. Second, protectionism may safeguard the economic viability of producers without preventing unemployment among the industry's workers. Employment in the U.S. textile and apparel industry has continued to fall even in the presence of very strict import limits as a result of the textile OMAs imposed under the GATT Multifibre Agreement; labor saving technology has been introduced to reduce the degree of noncompetitiveness. Third, protection in favor of domestic producers of input materials and components may stimulate the importation of downstream products thereby reducing the domestic demand for the inputs. For example, U.S. participation in the worldwide cartelization of steel markets administered through negotiated OMAs has decreased the international competitiveness of U.S. firms that produce steel intensive products. Indirect imports of steel (i.e., embodied in automobiles, farm equipment, construction machinery, etc.) are eroding the U.S. market for steel and undermining the economic viability of the U.S. steel industry. Thus, even if protectionism is warranted because of import-injury it is unlikely to be a solution to the problem; at best it can only slow the rate of decline of the domestic industry.³

3. See A.O. Krueger, "LDC Manufacturing Production and Implications for OECD Comparative Advantage" paper prepared for the Conference on Prospects and Policy for Industrial Structure Change in the U.S. and Other OECD Countries (University of Minnesota, mimeo., January 1979).

Several causes have been suggested for the recent rise in protectionism such as the international financial crises, the rapid growth in exports of manufactured products from the third world, and poor internal management of domestic economic policies. In all likelihood it is some combination of of these factors. But in most cases domestic market conditions are more significant than imports as the cause of economic problems for the industry. When protectionism is warranted, however, it is product specific and is due to an imbalance between supply and demand. If an excess supply develops gradually, factors of production in the impacted industry should be able to adjust to the adversity through retirement and normal attrition. However, in this age of increasing technological sophistication international comparative advantage may change more rapidly than domestic industry is willing to adjust. This unwillingness to adjust is translated into political pressure for protectionism, with the ultimate aim of avoiding adjustment altogether.⁴

This story of protectionism can be boiled down to a simple chain of events:

- 1 imports increase rapidly;
- 2 domestic workers and producers are adversely effected;
- 3 political pressure is exerted;

4. This same unwillingness to adjust and resulting political pressure also occurs when the source of the economic adversity is purely domestic.

- 4 protectionism is introduced;
- 5 imports increase less rapidly (quite slowly); and
- 6 the domestic industry suffers a gradual erosion instead of a more rapid adjustment.

For years economists have been arguing that the solution to this problem is to reallocate resources out of internationally noncompetitive industries and into other industries in which the country has a comparative advantage. But the reallocation of resources is costly; the issue then boils down to the question: Who pays? If those adversely impacted by imports are the ones who pay, they will resist adjustment through the political process, i.e., they will become a lobby for protectionism. A more efficient approach would be to substitute a government sponsored adjustment policy for items (3), (4) and (5) above. Following this advice President Kennedy suggested a program of adjustment assistance which was contained in the U.S. Trade Expansion Act of 1962. Under an effective adjustment assistance program, the chain of events would become:

- 1 imports increase rapidly;
- 2 domestic workers and producers are adversely effected;
- 3 adjustment assistance is granted;
- 4 resources are reallocated out of the import-impacted industry and into more competitive industries;
- 5 the import-impacted industry contracts in a manner that enables it to maintain a degree of international

competitiveness.

Even though the adjustment assistance concept is sound in theory, it has been a disaster in practice. Studies of the operation of the U.S. program have revealed four major problems which explain the failure.⁵

First, the time lag between the initial increase in imports, which cause injury, and the date when adjustment assistance payments are received by the impacted workers and producers is typically more than a year. During this period imports might cause damage to the domestic industry that is irreparable.

The second reason for the failure of adjustment assistance is that the assistance typically falls far short of that required to remedy damage. To illustrate, in the case of small import-impacted firms, a valid adjustment program might call for the firm to cease operations entirely, i.e., to go out of the business. In such cases the retirement benefits which the workers have accumulated over previous years will be lost. Workers who have to move to find suitable reemployment might be forced to sell their homes in a depressed market. Such losses of retirement benefits and home equity were not covered by the adjustment assistance program.

The third problem with the U.S. adjustment assistance program involves the certification and design process.

5. C.R. Frank, Jr., Foreign Trade and Domestic Aid, Brookings Institution, Washington, D.C., 1977.

Obviously, adjustment assistance should be limited to those firms and workers which are truly impacted by imports and whose injury is significant. Moreover, the adjustment program must be effective in moving workers and other factors of production into viable alternative employments. Thus, criteria must be established to identify those cases which deserve assistance and have effective adjustment programs. In practice, the workers are able to seek reemployment in any field and receive retraining if necessary. However, the firm programs typically involve modernization in an attempt to regain the lost competitive position.⁶ Thus, when assistance has been granted, it has often been ineffective in reallocating resources into employments that are internationally competitive. The result is simply to delay the erosion of competitiveness; the firm eventually returns to the list of import-impacted firms.

The fourth reason for the failure of adjustment assistance is that it has not been accepted by the workers and producers as an attractive alternative to protection which in turn might be due to its failure. As a result, political pressure has been brought to bear on politicians in opposition to the adjustment

6. The reason for this is that firm adjustment programs must include provisions to provide employment opportunities for the workers, and thus, firms are effectively limited to adjustment programs based on modernization. Further, the owner/manager of the firm only knows the business that he is in; we cannot expect him to be competitive in another industry.

assistance concept in the U.S. But even if adjustment assistance was effective this political opposition would not completely disappear. After all, the voice of organized labor movements is not the workers but labor union leaders. An effective adjustment program could result in workers taking jobs in the same industry but outside the local community or in another industry. In both cases, the local labor union membership shrinks and, consequently, labor union jobs are lost. In addition, the community which loses jobs experiences economic hardship as the job-related reduction in spending spreads throughout the community.

This introduction illustrates the difficulties in dealing with changing international comparative advantage. The best solution involves reallocating resources, and the sooner the better. On the other hand, the natural political process results in protectionism; this pressure is primarily due to entrenched positions that would be jeopardized by effective adjustment. But even if a country does follow the protectionist route it cannot avoid adjusting to the dictates of changing international comparative advantage forever; sooner or later adjustments will come. What we are searching for is the most efficient way to adjust, recognizing that in order to be feasible the adjustment process must be politically acceptable.

The Plan of this study: Section 2 will present a survey of world manufacturing activity and exporting, with emphasis of the

developing countries (LDCs). Section 3 will discuss the linkage between import penetration and injury to domestic industry.

Import penetration for broad categories of manufactured products will be examined for the three major import markets, namely the European Community (EC), Japan and the United States of America (US). Attention will be paid to the question of whether import injury (when it exists) is due to imports from LDCs. Section 4 will present a brief case study of a sample of narrowly defined industries in the US.

2. Survey of world manufacturing

Growth rates of world output of manufactured products have been higher during the last two decades in comparison with previous periods; the growth in manufacturing value added (MVA) has averaged 5.2 per cent annually in real terms (i.e., after adjustment for inflation). Data on MVA are reported in Table 1 below. Manufacturing value added is used to measure the contribution of manufacturing activity to national income because the alternative measure (the value of output of manufactured products) includes two components that do not contribute to income, namely the extraction or production of indigenous raw materials that have income value without manufacturing activity and imported components and materials which are used in the manufacturing process.

Table 1: Growth and distribution of MVA

Country Group	Growth Rate(a)			Share of World MVA	
	63-73	73-81	63-81	73	81
World	6.8	3.1	5.2	100	100
CPE	9.8	5.8	8.0	19	24
DME	5.9	2.1	4.0	72	65
LDC	8.4	5.4	8.2	9	10
LDC Subtotal				100	100
Africa	8.7	2.8	6.0	6	5
LAC	8.2	4.6	6.6	58	53
N Afr & Mid East	9.1	5.3	7.4	13	13
SE Asia	12.2	10.7	11.5	12	18
Subcont	4.1	5.3	4.6	12	11
Memo items					
NICs(b)	9.8	5.9	8.0	42	44
Debtors(c)	8.3	5.4	7.0	58	58

Source: UNIDO, Handbook of Industrial Statistics, 1984.

- (a) The growth rates are in real terms, i.e., adjusted for inflation.
- (b) The selected "newly industrializing countries" include Argentina, Brazil, Mexico, Hong Kong, Rep. of Korea and Singapore.
- (c) The selected debtor countries include Argentina, Brazil, Chile, Egypt, India, Indonesia, Rep. of Korea, Mexico, Turkey and Venezuela.

The developed market economy countries (DMEs) account for roughly two-thirds of the world's manufacturing activity and only 15 percent of the world's population; the more mature countries in this group (i.e., Western Europe and the United States) account for almost one-half of the world's manufacturing output. The DMEs as a group have experienced rather steady increases in manufacturing activity growing at an average rate of roughly 4 percent annually.

The centrally planned economy countries of Eastern Europe,

including the USSR, (CPEs) account for roughly 8 percent of the world's population and almost one-fourth of the world's manufacturing activity. The average growth of MVA for this group of countries is higher than that of the DMECs.

The developing countries, excluding China, (LDCs) account for over one-half of the world's population but only 10 percent of the world's manufacturing. However, their annual growth rate during the last two decades (over 8 percent) has been greater than that of the other two country groupings.

Data for two time periods are reported in Table 1, namely pre-OPEC (1963-1973) and post-OPEC (1973-1981). The growth rates were lower during the latter period for all groups of countries, but especially so for the DMEs who experienced a two-thirds decline in their average annual growth rates.

Data on growth and distribution of exports of manufactured products are reported in Table 2 . World growth in manufactured exports has averaged 13 percent since 1963. The DMEs are the major exporters of manufactured products and account for a significantly higher share of exports than their share of world MVA. Conversely, the CPEs are less successful in exporting manufactured products than they are in manufacturing activity. The LDC's share of world exports of manufactured products has increased each period and is now roughly equal to their share of MVA.

Table 2: Growth and distribution of exports of manufactured products

Country Group	Growth Rate (a)			Share of World Exports of Manufactured Products		
	63-73	73-84	63-84	63	73	84
World	15.9	10.8	13.2	100	100	100
CPE	12.2	9.9	11.0	12.8	9.3	8.5
DME	16.0	10.4	13.0	83.8	84.8	81.5
LDC	22.4	16.1	19.1	3.4	5.9	10.0
LDC subtotal				100	100	100
Africa	16.7	8.4	12.3	2.1	1.3	0.6
LAC	26.7	15.4	20.5	13.8	18.9	17.5
N Afr & Mid East	20.8	21.9	21.4	5.8	5.0	8.6
SE Asia	26.2	16.6	21.1	47.6	64.5	67.5
Subcont	9.7	10.3	10.0	30.8	10.3	5.8
Memo items						
NIC(b)	26.5	16.0	20.9	54.0	74.9	74.1
Debtors(c)	21.1	13.0	16.8	42.4	38.0	28.2

Source: UNIDO, Handbook of Industrial Statistics, 1984 and UN, Yearbook of International Trade Statistics, various years.

- (a) The growth rates were calculated in current US\$.
 (b) See Table 1.
 (c) See Table 1.

Tables 1 and 2 also present data for various groupings of developing countries, i.e., by region and for selected economic groups. These data depict different experiences for the different groups of LDCs. Southeast Asia is the most rapidly growing region in both MVA and manufactured exports; the top five LDCs in growth of MVA are the Republic of Korea, Singapore, Hong Kong, Thailand and Indonesia, in that order.⁷ Countries in the Asian subcontinent are the slowest growing countries (as a

7. This ranking omits some more rapidly growing LDCs whose share of world MVA is less than .05 of one percent.

group) among the LDCs.

It should be noted, however, that growth rate data for country groupings are weighted averages with the weights being the country's share of world MVA (or manufactured exports for export growth rates) during 1973. These averages are heavily influenced by the few larger countries. For example, MVA growth rates are heavily influenced by Brazil, Mexico, India, Argentina, Turkey, Venezuela, the Republic of Korea, the Philippines and Peru; these countries account for almost 60 percent of LDC MVA. The growth rates for exports of manufactured products are similarly concentrated with Hong Kong, the Republic of Korea, Singapore, India, Brazil, Mexico, Argentina, and Pakistan dominating; these countries account for almost 70 percent of LDC exports of manufactures.

3. Import Penetration and Injury to Domestic Industry

The purpose of this section is to examine the extent of import penetration and the related consequences for domestic producers and workers in the importing countries. The examination will incorporate data on imports, exports and domestic production for the three major import markets, namely the EC, Japan and the US. But first we should examine the causal linkages between import penetration and injury to domestic industry. After all, it is possible that domestic industry might face economic hardship in the absence of import competition. Furthermore, it is possible that import competition does exist

yet the major problems facing the domestic industry are essentially domestic in nature. And finally, of particular interest to the LDCs, it is possible that domestic industry is facing import-caused injury but the injury is due to imports from particular source countries and not from imports in general, or imports from LDCs.

Our concern is to identify those cases of industrial restructuring that are necessitated by increasing import-competition rather than by domestic market factors. Secondly, we are particularly interested to identify those cases in which alleged import injury to domestic industry is not due to imports from LDCs. For example, in order for import-competition to be the cause of injury to domestic producers imports must be increasing in absolute volumes; if imports are constant (or declining) any loss of sales by domestic firms must be due to (a) increased competition from other domestic firms or (b) a decline in the domestic market for the product. Similarly, if import-competition is to cause a decline in employment, domestic output must have declined; if domestic output is constant (or increasing) any decline in employment must be due to (a) labor-saving innovations in the production process, i.e., an increase in labor productivity, or (b) general inflation such that the value of output might be increasing but real volume of output is actually declining. Secondly, if real output is declining in the presence of an expanding domestic market and increased import

volumes the source of the increase in imports is critical in determining the underlying cause of injury.

The above considerations yield two necessary (though not sufficient) conditions for import-competition to be a cause of industrial restructuring,⁸ namely (a) that imports have increased in absolute volumes and (b) that domestic production has declined in real terms. These two conditions are a joint test, i.e., both must be met simultaneously.

In addition, there are situations that would constitute evidence that imports are not a cause of alleged injury to a domestic industry. If domestic production is declining but in the presence of a more rapidly declining domestic market, the injury facing the domestic industry is more domestic in nature. At most imports are only contributing to an otherwise bad situation.

To summarize, we have two tests.

Test one implies that import competition is a cause of injury to domestic industry; this test requires both of the following conditions to be true:

- 1a imports are growing in real terms, and
- 1b domestic production is declining in real terms.

Test two denies a causal linkage between imports and injury to

8. Our approach will be, first, to identify those industrial sectors that appear to face import injury and, second, to determine whether imports from LDCs are likely to be major contributors to that import injury.

the domestic industry; the condition is as follows:

- 2 the growth in domestic consumption is less than the growth in domestic production.⁹

Tables 3, 4 and 5, respectively, present data on EC, Japan and US output, trade, consumption and employment. The data are in current terms converted to US dollar values. Since test one is based on positive or negative growth in real terms, we must deflate the current dollar growth rates of imports and domestic production by the US dollar rate of inflation; the US GNP deflator grew at an annual rate of 6.6 percent during 1970-84. On the other hand, test two can be conducted using comparisons of current dollar growth rates.

9. This test is based on nominal data. In general even when consumption and production are decreasing in real terms inflation will cause both to rise in nominal terms.

Table 3: Growth trends in EC production, consumption, trade and employment (Percentage growth rates 1970-84)

ISIC	Description	dQ	dM	dX	dC	dEMP
311	Food products	9.4	8.2	12.5	9.2	-0.7
313	Beverages	9.4	9.1	11.6	9.2	-2.3
314	Tobacco	10.4	7.5	10.6	10.3	-2.3
321	Textiles	5.7	12.7	9.0	6.1	-4.6
322	Clothing	6.6	19.2	13.9	7.5	-3.6
323	Leather and products	7.8	13.6	12.0	8.1	-3.6
324	Footwear	8.3	19.9	9.3	8.8	-3.1
331	Wood products	7.3	7.9	9.2	7.4	-2.7
332	Furniture, fixtures	10.0	15.5	12.5	9.9	-0.5
341	Paper and products	8.8	9.4	12.2	8.8	-2.5
342	Printing, publishing	9.4	13.8	10.2	9.5	-1.3
351	Industrial chemicals	11.1	12.7	12.6	10.9	-1.6
352	Other chemicals	9.8	13.5	11.7	9.7	-0.6
353	Petroleum refining	15.0	28.1	14.6	16.3	-1.0
354	Petroleum, coal products	12.1	12.9	11.0	12.3	-2.9
355	Rubber products	7.7	14.0	9.4	8.0	-2.3
356	Plastic products	12.5	15.3	11.5	13.8	1.0
361	Pottery, china, etc.	10.3	14.7	12.3	10.2	-2.8
362	Glass and products	9.0	15.6	10.6	9.0	-2.4
369	Nonmetal products	8.9	8.6	12.4	8.7	-2.3
371	Iron and steel	5.8	7.7	9.5	5.4	-3.0
372	Nonferrous metals	7.2	4.4	9.2	6.1	-2.5
381	Metal products	7.9	13.2	11.0	7.6	-2.0
382	Machinery	8.9	14.2	10.1	9.2	-1.5
383	Electrical machinery	9.2	16.9	11.2	9.6	-1.3
384	Transport equipment	9.9	14.9	11.0	10.0	-0.6
385	Professional goods	8.6	16.0	11.9	9.4	-2.3
390	Other manufactures	7.8	12.7	12.3	7.5	-2.1
300	Total manufacturing	9.2	12.7	11.1	9.3	-1.8

Source: UNIDO secretariat calculations.

Trade 4: Growth trends in Japan's production, consumption, trade and employment (Percentage growth rates 1970-84)

ISIC	Description	dQ	dM	dX	dC	dEMP
311	Food products	14.4	14.0	6.9	14.5	0.9
313	Beverages	16.2	18.6	23.9	16.2	-2.3
314	Tobacco	13.0	15.8	3.7	13.0	-0.8
321	Textiles	9.1	13.4	8.1	9.6	-3.3
322	Clothing	13.0	25.5	5.0	14.8	2.2
323	Leather and products	11.9	19.2	15.7	12.1	0.3
324	Footwear	13.5	28.2	2.1	14.4	0.9
331	Wood products	9.3	11.6	-0.5	9.5	-2.9
332	Furniture, fixtures	13.7	17.7	20.1	12.8	0.0
341	Paper and products	12.7	15.5	13.3	12.8	-1.0
342	Printing, publishing	14.7	7.9	11.0	14.7	0.8
351	Industrial chemicals	12.8	17.9	13.0	13.1	-2.6
352	Other chemicals	14.5	13.2	19.5	14.2	-0.1
353	Petroleum refining	23.9	21.5	16.9	23.6	1.2
354	Petroleum, coal products	16.7	1.4	21.8	15.6	0.2
355	Rubber products	13.8	16.5	12.6	15.5	-0.6
356	Plastic products	16.1	15.3	17.9	15.7	2.1
361	Pottery, china, etc.	12.6	17.6	11.9	13.0	-1.0
362	Glass and products	13.0	17.3	22.4	10.2	-1.5
369	Nonmetal products	14.1	11.9	17.8	14.0	-0.5
371	Iron and steel	11.3	14.8	12.1	11.2	-2.0
372	Nonferrous metals	11.0	12.1	14.5	11.0	-0.8
381	Metal products	12.2	12.3	15.1	11.8	-0.5
382	Machinery	12.7	8.8	21.2	11.2	-0.3
383	Electr. cal machinery	13.8	17.2	20.0	12.6	0.8
384	Transport equipment	15.0	12.8	21.3	13.3	0.4
385	Professional goods	15.9	15.6	20.6	12.4	1.4
390	Other manufactures	12.8	14.3	12.5	13.0	-0.9
300	Total manufacturing	13.5	14.8	17.0	13.1	-0.3

Source: UNIDO secretariat calculations.

Table 5: Growth trends in US production, consumption, trade and employment (Percentage growth rates 1970-84)

ISIC	Description	dQ	dM	dX	dC	dEMP
311	Food products	8.8	11.3	9.9	8.8	0.2
315	Beverages	9.0	11.7	16.1	9.1	-0.4
314	Tobacco	7.6	13.4	11.3	7.3	-0.7
321	Textiles	7.3	13.0	12.5	7.5	-0.3
322	Clothing	6.6	19.0	11.7	7.9	0.3
323	Leather and products	7.9	16.5	14.0	8.9	0.1
324	Footwear	5.3	18.2	20.6	7.0	-1.9
331	Wood products	9.9	12.1	11.6	10.1	1.0
332	Furniture, fixtures	9.1	26.2	10.5	10.1	2.0
341	Paper and products	9.8	11.9	9.7	9.9	0.4
342	Printing, publishing	9.2	16.6	12.0	9.2	1.6
351	Industrial chemicals	11.6	21.4	16.8	11.7	0.3
352	Other chemicals	8.3	18.9	13.2	8.2	-0.8
353	Petroleum refining	17.9	20.2	20.6	18.0	0.5
354	Petroleum, coal products	12.4	13.0	10.4	12.5	2.3
355	Rubber products	7.2	17.8	11.3	8.6	-0.1
356	Plastic products	13.1	23.6	11.2	15.7	4.4
361	Pottery, china, etc.	8.9	15.6	21.6	10.4	0.4
362	Glass and products	8.8	25.9	12.1	10.5	0.6
369	Nonmetal products	9.6	16.3	10.6	9.8	1.0
371	Iron and steel	9.1	13.3	2.6	9.7	-0.3
372	Nonferrous metals	9.1	12.0	6.6	9.6	0.3
381	Metal products	8.6	17.4	10.3	9.0	0.9
382	Machinery	10.2	19.3	12.0	10.6	1.8
383	Electrical machinery	9.2	20.5	14.6	9.9	1.3
384	Transport equipment	9.7	17.7	11.4	10.5	1.6
385	Professional goods	10.8	19.8	14.0	11.1	2.5
390	Other manufactures	6.9	15.9	10.2	10.1	0.7
300	Total manufacturing	9.8	18.1	12.5	10.2	0.9

Source: UNIDO secretariat calculations.

Based on the data reported in Tables 3, 4 and 5 there are only four cases in which all of the tests are consistent with the allegation that imports are the cause of injury to the domestic industry. The cases are as follows: the textile and clothing industries in the EC and the clothing and footwear industries in the US; there was no industry in Japan which met all of the tests

for import injury.¹⁰ These trends have serious implications for EC employment in the effected industries; EC employment declined by 50 percent during the 1970-84 period in the textile industry and by 40 percent in the clothing industry. US employment in the footwear industry has also declined dramatically (by 24 percent); contrary to expectations, US employment in the clothing industry has actually increased, though modestly, during the period.

There are six additional cases in which the tests did not conclusively reject a possible linkage between increasing imports and injury. In all of these cases imports were increasing quite rapidly in the presence of domestic markets that were growing very slowly and domestic output was essentially unchanged in real terms over the period. These additional cases include footwear, leather and rubber products in the EC and textiles, leather and rubber products in the US. Again the implications of these trends on employment are more serious for the EC than for the US; employment in the EC in all three of the industries mentioned declined by more than 2 percent annually whereas employment in the US was essentially unchanged in these industries. Even under these more liberal indicators of import injury there is no evidence of import injury for any industry in Japan. The

10. The EC iron and steel industry has experienced declining real output in the presence of marginal increases in real imports. However, output grew more rapidly than domestic consumption with exports growing more rapidly than imports. Thus, any injury facing the domestic industry is due more to stagnating domestic markets than imports.

industries facing the greater import pressure in Japan would include textiles and wood products in which employment is declining by 3 percent annually; however, real output is growing by more than 2 percent per year which indicates that the employment trends are more the result of labor saving innovations than import penetration.

Allegations of import injury are quite often based on import penetration data. Essentially, the argument goes as follows. If imports increase as a share of the domestic market, then domestic industry is facing a shrinking share of the domestic market, i.e., imports are causing injury to domestic industry. Following this heuristic argument, import injury would exist whenever the import-consumption ratio is increasing. However, since in an expanding world economy import-consumption ratios tend to increase in general, this criteria is tempered somewhat to include two considerations. Concerned observers concentrate on those industries for which (a) the import-consumption ratio is increasing more rapidly and (b) the import-consumption ratio itself is above some minimum threshold.

Data on import penetration for the EC, Japan and the US are reported in Table 6.

Table 6: Import Penetration (a)

ISIC	Description	US			Japan			EC		
		M/C	d(M/C)	Sh	M/C	d(M/C)	Sh	M/C	d(M/C)	Sh
311	Food products	4	2	4	5	0	10	8	-1	8
313	Beverages	9	3	1	4	-2	1	4	0	1
314	Tobacco	3	6	0	3	3	1	4	-3	0
321	Textiles	10	6	3	9	4	6	18	7	5
322	Wearing apparel	21	11	4	11	11	3	26	12	4
323	Leather and products	23	8	1	12	7	1	26	6	1
324	Footwear	27	11	1	7	14	0	10	11	0
331	Wood products	8	2	1	5	2	2	22	1	3
332	Furniture, fixtures	14	16	1	4	5	1	6	6	1
341	Paper and products	8	2	3	4	3	3	21	1	5
342	Printing, publishing	3	7	1	1	-7	1	6	4	1
351	Industrial chemicals	9	10	4	11	5	10	13	2	6
352	Other chemicals	5	11	1	6	-1	4	8	4	2
353	Petroleum refining	8	2	7	13	-2	17	18	12	12
354	Petroleum, coal prod	5	0	0	2	-14	0	7	1	0
355	Rubber products	26	9	3	14	1	2	24	6	2
356	Plastic products	32	8	5	5	0	2	28	2	3
361	Pottery, china, etc.	39	5	0	3	5	0	8	4	0
362	Glass and products	37	15	2	7	7	1	26	7	1
369	Nonmetal products	4	6	1	2	-2	1	4	0	1
371	Iron and steel	10	4	4	3	4	3	8	2	3
372	Nonferrous metals	13	2	3	17	1	8	26	-2	4
381	Metal products	8	8	4	2	0	2	10	6	3
382	Machinery	12	9	10	4	-2	6	17	5	11
383	Electrical machinery	18	11	12	3	5	5	15	7	8
384	Transport equipment	18	7	19	3	-1	5	11	5	7
385	Professional goods	15	9	3	27	3	4	59	7	4
390	Other manufactures	11	6	3	11	1	3	65	5	3
300	Total manufacturing	11	7	100	6	2	100	14	3	100

Source: UNIDO secretariat calculations.

(a) The three columns for each country represent, respectively, the import-consumption ratio in percentages for 1984, the annual percentage change in the import-consumption ratio during 1970-84, and the country's imports of the product as a percentage share of the country's total imports of manufactured products during 1984.

An examination of the data reported in Table 6 reveals 21 cases in which the import-consumption ratio exceeds 15% and

has increased during the 1970-84 period. These cases include ten industries in the EC, one in Japan, and ten in the US.

The EC cases include four industries previously identified as likely to be experiencing import injury, namely, textiles, clothing, leather products, and rubber products. The remaining six cases include two industries for which real domestic output is expanding quite strongly, i.e., by more than 8 percent annually (petroleum refining and electrical machinery), and four industries for which real domestic output and consumption are expanding roughly at the same slow rates of between 1 percent and 2 percent annually (glass products, machinery, professional goods and other manufactures).

One case applies to Japan with minor consequences. This case involves professional goods for which Japanese real domestic output is expanding at an annual rate of 9 percent.

The ten cases affecting the US include four of the five industries identified earlier, namely clothing, footwear, leather products and rubber products (interestingly the textile industry is not indicated to be suffering from import injury based on import-consumption indicators). In all of the other six cases US real output has been growing by at least 2 percent annually (pottery and china, glass products, transportation equipment, and electrical machinery) and up to 4 percent annually (professional goods) and 6 percent annually (plastic products).

To summarize the results of this examination of import

peretration in the EC, Japan and the US, we have identified five industries in which allegations of import injury appear to have some validity; none of these instances relate to Japan which appears to have escaped import injury as a serious problem affecting broadly defined manufacturing industries. The problems industries for the EC and the US are textiles (EC only), clothing, footwear (US only), leather products, and rubber products.

Import injury and imports from LDCs: We now turn to the question of whether imports from the LDCs are a major contributor to import injury problems facing the industries identified above. Obviously this issue is one depending upon subjective judgments as to which imports are the major causes of injury. We will use two factors in attempting to arrive at objective answers to these subjective questions. First, if imports from the LDCs constitute a minor share of total imports into the import-impacted markets, then we will judge imports from nonLDC sources as the major threat of injury. Secondly, if imports from the LDCs are not growing more rapidly than imports from other sources, then imports from LDC should not be judged to be the major threat of injury. One additional consideration is relevant for the EC, namely the significance of intra-EC trade as a potential cause of injury to domestic producers in the EC. If EC imports from other member states are the dominant source of imports or are the more rapidly growing imports, then imports into the EC from nonmember

countries should not be judged to be the major threat of injury.

Data on these considerations are reported below in Table 7.

Table 7: Import injury and imports from LDCs (percentage shares, 1984, and growth rates, 1970-84)

Industry	US imports from LDCs		EC imports(a)		
	Share	Growth LDC World	Shares EC	LDC	Growth LDC World
Textiles	no injury		64	42	12 (10)
Clothing	86	23 (19)	47	68	19 (15)
Footwear	72	31 (17)	no injury		
Leather and products	65	21 (15)	51	57	13 (13)
Rubber and products	23	33 (19)	71	21	13 (13)

Source: UNIDO secretariat calculations.

(a) EC import shares are, first, intra-EC imports as a share of total EC imports from the world (including intra-EC trade) and, second, EC imports from LDCs as a share of extra-EC imports (excluding intra-EC trade).

The data reported in Table 7 do support the allegation that imports from the LDCs constitute a major threat of injury to domestic firms in the following US industries: clothing, footwear and leather and leather products. The evidence is less conclusive regarding the US rubber and rubber products industry since the LDCs supply less than one-fourth of total US imports -- though imports from the LDCs are growing quite rapidly, i.e., roughly double the rate of growth of imports from other sources.

Our interpretation of the evidence regarding the EC is quite different. First, intra-EC trade accounts for over one-half of EC imports in three of the four imports-sensitive industries identified above. Second, in these three cases (textiles, leather and rubber products) imports from the LDCs are not growing significantly faster than imports from other nonEC member

states. And finally, even in the clothing industry where intra-EC trade accounts for less than one-half of total EC imports (47 percent) and where the LDCs supply the major share of extra-EC imports (68 percent), the rate of growth of imports from LDCs is only marginally greater than the rate of growth of extra-EC imports in total (19 percent versus 15 percent).¹¹

In regarding the LDCs as a source of import injury, it is also important to distinguish among the LDCs themselves. The three major industries facing serious import injury in the US include clothing, footwear, and leather and leather products. In a simple generalization, the NICs account for the lion's share of imports from the LDCs. The NICs in Asia account for over two-thirds of all US imports of clothing from LDCs; however, due to the import restraint program under the GATT MFA, imports from the Asian NICs are growing much slower than imports from the other LDCs. US imports of footwear from the NICs (both in Asia and Latin America) account for over 95 percent of total US imports from the LDC. These same suppliers provide the more rapidly growing imports of footwear into the US, as do the other less advanced countries in Asia. The NICs also account for more than 90 percent of total US imports of leather and leather products from the LDCs. However, the Latin American NICs, which supply

11. The reason for this experience in the clothing industry might be the "export restraint agreements" which the EC has negotiated with major supplying countries under the GATT monitored Multifibre Arrangement (MFA).

just under one-fourth of US imports, do not provide a rapidly growing supply of US imports of leather and leather products. Instead the rapidly growing sources of supply include the Asian NICs and other countries in Asia.

The import penetration story in the EC is somewhat different from that in the US. In particular, the NICs are not so dominant among the LDCs as suppliers of textiles and clothing. Due to the MFA restraint agreements between the EC and the various LDC suppliers, EC imports are widely distributed among the LDCs. And the growth rates of these imports are decidedly biased in favor of the less advanced LDCs. In contrast, EC imports of leather and leather products from the LDCs are significantly dominated by India, other countries in the Asian Subcontinent, and countries in Latin America; however, the more rapidly growing imports are coming from Asia (both the Asian NICs and other countries in the region). Finally, the pattern of EC imports of rubber and rubber products is different still. In this case, the Asian exporters account for over two-thirds of EC imports from the LDCs; these same suppliers, especially the NICs in Asia, account for the more rapidly growing imports.

4. Import Penetration in the U.S. -- A Case Study

The above exercise to identify import-sensitive industries in the EC, Japan and the US was based upon very aggregated definitions of what constitutes an industry. Such an exercise runs the risk of analyzing data that actually conceal more than

they reveal about import-injury. Each broadly defined industry consists of several (and in some cases, many) more-narrowly defined industries (or product sectors). Is it not possible that import-injury is a problem for a particular narrowly defined product when, at the same time, import-injury does not seem to be a problem for the broadly defined industry as a whole? For example, the electronics industry in the US may be quite healthy overall when, at the same time, US producers of consumer electronic products (such as radio and TV receivers) are facing extreme difficulty in competing with imports. This would be possible if US production of, say heavy electronic machinery, accounts for a large share of US output and employment in the electronics industry and production and employment in this industry is growing to satisfy an expanding market. Thus, the hardships befalling the consumer electronics subsector of this industry might be concealed in the aggregate data which describe total production, sales, profit rates, employment, exports, imports and other characteristics of the industry.

This section will report the results of one attempt to overcome the problems of aggregation in identifying industries that might face import injury. It will consist of an investigation of the same types of issues analyzed above but based upon more narrowly defined industry data.

At the very beginning it must be pointed out that our efforts toward this end are heavily dependent upon the

availability of suitable data describing more narrowly defined industries. In general, the data problems in such an exercise are quite serious. Most countries of the world collect data on international trade (i.e., imports and exports) using different product classifications than are used in collecting data on the domestic economy such as production, employment, and other characteristics of industrial activities. In order to conduct an integrated analysis of the product sector it is necessary to concord data from different sources and collected on the basis of differing product classifications. For example, US import data are collected from customs sources which are primarily interested in administering US import duties; imported products are initially classified according to the Tariff Schedules of the United States, Annotated (TSUSA). US export data are collected and recorded by products classified under the US Schedule E classification (the US variant of the Standard International Trade Classification, i.e., SITC). Data describing general characteristics of US industry are collected for industries defined under the US Standard Industrial Classification (SIC). Thus, if one needs comparable data on US production, imports, exports and consumption for given industries it is necessary to concord three different product classifications -- the TSUSA, SITC (i.e., the US Schedule E) and the US SIC.

Unfortunately, for narrowly defined product sectors it is often impossible to obtain data that are truly comparable. One

approach is to examine the various industry classifications in detail to identify cases in which, say two or more TSUSA products, can be clearly defined to constitute a single SIC industry, and visa versa. This approach essentially aggregates products into more broadly defined industries. Often, in order to get clean sets of data in which there are only a few insignificant misclassified problems, one must aggregate the data to very broadly defined industries -- such as the definitions used in the earlier sections of this study. A second approach is to examine actual data for narrowly defined products and attempt to assign "shares of an industry" to the various components of overlapping industries. This approach is suspect when data over time are necessary to study the economic relationship of interest. Essentially, one is assuming that the "shares" used in assigning product data to the various industry subsectors remain constant over the period under investigation. A third approach is to base one's study on a sample of products for which clean concordances are possible. This latter approach yields information on narrowly defined products and, is therefore, preferable to the first approach. It also avoids the problem of assigning "shares" of an industry to various components of that industry and, more importantly, avoids the biases that may occur when true shares change over time. However, this latter approach is based on the implicit assumption that the sample of cleanly concorded industries is representative of a random sample.

Unfortunately, the sample of products to be studied is not selected on the basis of well accepted sampling techniques; instead the sample is based upon the availability of data. Thus, all three approaches have their methodological problems.

Recognizing the alternative shortcomings, we have chosen to employ the third approach in this study. We have done so for the following reason. The product sectors selected in our sample will be cleanly concorded across variables such that data on all characteristics of the industries being studied will be the most accurate available. The conclusions drawn from our investigation will be based upon valid data analysis. However, we must be careful in generalizing our results to other product sectors. This does not mean that no generalizations can be drawn; it only means that whatever generalizations are drawn must be conditioned by the assumption that our sample is representative of other product sectors that might be covered by such generalizations.

As a starting point for this case study of import penetration in US manufacturing, data have been collected for the major manufacturing activities. Due to concordance problems all sectors are not equally represented, however, significant effort has been expended in collecting as complete a sample as possible. These data are reported in Table 8 below.

Table 8: Import penetration into the US

ISIC	Description (import coverage %)	M	M/C	dQ	dH	dX	dC	d(M/C)
311/2	Food and kindred products (95)	8932	4	10	9	16	10	-1
	Meat products	2463	5	8	8	17	8	0
	Sugar	2435	28	9	12	57	9	2
	Canned fruits and vegetables	960	18	3	17	14	4	13
	Chocolate, candy, etc.	577	7	11	20	23	11	9
	Dairy products	567	2	13	18	5	10	8
	Oils and fats	553	4	16	18	13	16	-6
	Canned seafood	459	30	11	12	22	10	2
	Coffee	273	5	9	16	19	9	7
	Flour, bread, etc.	228	1	11	12	19	10	2
321	Textiles (79)	2776	5	8	8	18	7	1
	Manmade fibre woven fabrics	737	8	10	15	20	10	5
	Cotton woven fabrics	626	13	7	14	10	7	7
	Carpets	348	6	9	19	30	9	10
	Jute, linen, etc., goods	245	117	-24	20	25	2	18
	Cordage and twine	123	25	21	-6	19	6	-12
	Yarns	111	2	5	-7	11	4	-11
322	Clothing (86)	8251	17	7	18	20	8	10
	Outerwear, nec	2888	25	9	17	20	11	6
	Men's and boys' clothing	2305	16	7	19	21	7	12
	Women's and misses' clothing	1735	16	3	18	20	4	14
	Leather clothing	224	48	-1	13	32	3	10
323	Leather and products (92)	1368	26	9	18	20	10	8
	Leather	373	21	7	16	20	7	9
	Women's handbags	348	40	7	17	35	10	8
	Luggage	336	33	11	25	20	13	11
	Personal leather goods	198	31	6	23	25	9	14
324	Footwear (96)	2888	33	6	19	27	9	10
	Women's and misses' footwear	1280	35	3	15	31	6	10
	Athletic footwear	974	79	10	41	33	24	17
	Men's and boys' footwear	586	19	6	11	29	6	5
331	Lumber and wood products (66)	3869	11	9	11	17	9	2
	Softwood lumber	1928	23	24	11	17	20	-8
	Hardwood veneer and plywood	617	33	7	7	22	6	1
332	Furniture and fixtures	1349	6	10	18	29	10	8
341	Paper and products (91)	5755	7	12	14	16	12	1
	Paper mill products	3484	15	13	12	14	13	-1
	Pulp mill products	1885	45	18	15	23	15	0

351/2	Chemicals and products (69)	8430	5	13	19	19	12	7
	Industrial inorganic chem, nec	2341	24	21	23	16	24	-1
	Medicinals	1040	33	16	20	17	17	3
	Industrial organic chem, nec	1415	5	26	26	21	27	-1
	Cyclic crudes and intermediates	994	13	15	14	21	14	0
353/4	Petroleum and coal products	16476	7	24	25	22	24	2
	Petrol refinery products	16418	7	23	25	23	23	2
355/6	Rubber and plastic products (95)	3046	6	12	15	18	12	3
	Tires	1386	13	8	19	21	8	10
	Rubber/plastic footwear	433	44	2	6	35	3	3
	Plastic sheets, film, etc.	387	6	18	14	20	18	-3
361/9	Nonmetal products (70)	1991	5	10	19	17	10	8
	China and earthen tableware	413	59	8	13	20	11	3
	Pottery, nec	375	51	11	17	22	13	4
	Ceramic tiles	220	36	11	22	25	14	8
	Abrasive products	219	9	13	17	11	13	4
	Cement	179	5	9	15	23	5	6
	Cut stone	142	22	8	19	25	9	9
362	Glass and glass products	711	6	10	14	16	10	4
371	Iron and steel (73)	11952	12	11	16	15	11	5
	Steel pipe and tubes	4906	29	18	31	19	20	11
	Bars, plates and structurals	2215	15	10	13	16	10	3
	Sheets and strip	1585	10	8	9	12	8	1
372	Nonferrous metals (68)	9645	18	11	22	28	12	11
	Precious metals	3668	135	16	42	54	19	23
	Other metals	2179	65	11	14	29	12	3
	Copper bars, sheet and pipe	419	11	4	14	22	4	10
	Wire and cable	340	4	10	19	25	9	10
381	Fabricated metal products (57)	5290	5	10	19	16	10	9
	Valves and pipe fittings	871	10	13	27	16	13	14
	Wire products	680	15	11	21	24	11	10
	Bolts, nuts, rivets and washers	616	13	16	19	13	17	2
	Hand tools	442	15	12	19	15	13	7
	Heating equip, exc electrical	247	12	4	36	8	5	31
	Cutlery	175	17	10	15	18	11	4
382	Machinery, exc electrical (41)	17590	9	14	21	18	13	8
	Farm machinery and equip	1578	13	21	18	20	21	-4
	Metal cutting machine tools	1562	25	17	33	17	20	13
	Internal combustion engines	1546	16	14	28	19	14	13
	Construction machinery	1439	15	13	26	18	12	15
	Textile machinery	674	45	5	7	8	6	2

	Ball and roller bearings	498	13	12	19	14	12	7
383	Electrical equip and supplies (61)	19392	13	11	20	21	11	9
	Radio and TV receivers	5589	54	6	14	20	8	6
	Solid state semiconductors	3591	32	18	34	22	20	14
	Radio and TV communication equip	2750	10	13	29	17	13	16
384	Transport equip (81)	34448	15	10	15	15	10	5
	Passenger cars and chassis	18657	30	5	14	13	7	7
	Trucks, tractors and chassis	4547	23	9	22	14	10	12
	Auto parts and truck trailers	4538	18	11	11	14	10	1
385	Professional goods (70)	5788	13	14	22	18	14	8
	Photo equip and supplies	2187	15	13	23	17	14	10
	Watches and clocks	1268	52	5	21	27	10	11
	Optical instruments and lenses	584	28	21	28	28	19	1
390	Other manufactures (82)	6872	23	11	19	17	12	8
	Precious stones (mainly diamonds)	2234	189	9	24	14	23	1
	Games and toys	1232	26	11	24	25	12	12
	Sporting and athletic goods	652	28	11	14	13	11	3
	Precious jewelry	782	19	14	35	19	15	19
	Dolls and stuffed animals	387	49	6	17	19	10	8
	Costume jewelry	246	21	8	18	30	8	10
	Artificial flowers	204	46	13	16	31	14	2

Source: U.S. Commodity Exports and Imports as Related to Output 1981 and 1980, (Washington, D.C.: US Department of Commerce, Bureau of Census, 1984). The data are 1981 imports in \$mil, 1981 import-consumption ratios in percentages, 1971-81 annual growth rates of manufacturing shipments, imports, exports and consumption measured in percentages, and the 1970-81 annual rate of increase in import-consumption ratios in percentages.

The data presented in Table 8 parallel the industrial breakdown as contained in Tables 5 and 6. However, it must be noted that the aggregations of sector data reported in Table 8 do not necessarily match the broadly defined sectors reported in Tables 5 and 6. For example, the growth rates for imports of textiles, furniture and fixtures, and glass products are significantly lower for the industrial aggregates presented in

Table 8 compared with Table 5.12 Recognizing the problems in concording trade data with production data, we nevertheless felt that it was important to report the growth rates for the same aggregated product sectors that were reported in the earlier tables.

Based upon the tests for import-injury discussed above, only two broadly defined industries are identified as suffering from import-injury, namely clothing and footwear.¹³ However, as we expected, some subsectors in these industries are not facing import-injury. For example, outerwear (i.e., jackets and coats), which is a subsector of the clothing industry, and athletic footwear, a subsector of the footwear industry, are not facing import-injury. Conversely, some subsectors of those broadly defined industries determined to be competitive with imports are facing import displacement problems. Those subsectors identified as subject to import-injury on the basis of the data presented in Table 8 are listed below:

12. The growth rates for exports in Table 8 are not comparable with those reported in Table 5.

13. The tests are summarized on pages 23 and 24 above. The clothing and footwear industries were also the only two US industries identified as suffering from import-injury on the basis of the data presented in Table 5 above.

canned fruits and vegetables (a subsector of ISIC 311/2)

cotton woven fabrics (321)

jute, linen, etc., goods (321)

leather (323)

women's handbags (323)

personal leather goods (323)

copper bars, sheet and pipe (372)

heating equipment, except electrical (381)

textile machinery (382)

radio and TV receivers (383)

passenger cars and chassis (384)

watches and clocks (385)

dolls and stuffed animals (390)

Of the 13 product categories listed above, seven involve products for which the domestic market is stagnant or declining. In these cases this lack of growth in the market may constitute a significant factor in the poor health of the domestic industry. Nevertheless, it is still true that domestic firms are unable to compete with imports which are growing in real terms in the presence of a declining total market. The other six product categories are facing intense import competition based on all of the criteria used above. These six products are women's handbags, personal leather goods, radio and TV receivers, passenger cars, watches and clocks, and dolls and stuffed animals.

The above product sectors identified to be facing import-injury were identified on the basis of growth trends in production, consumption and trade. In the previous section we also examined this issue on the basis of import penetration data. That examination concentrated on two indicators, namely (a) an increasing import-consumption ratio and (b) an import-consumption ratio above a minimum threshold of 15 percent. Data to conduct such an examination is also reported in Table 8 above.

There are five aggregated sectors that meet these criteria for import injury. The five sectors are clothing, leather, footwear, nonferrous metals and other manufactures; however, domestic production was actually expanding in real terms in three of these sectors (leather, nonferrous metals and other manufactures). Thus, at the branch level import-injury is indicated for the same two branches (clothing and footwear) as indicated in the earlier sections of this study.

At the subsector level of aggregation there are 39 product sectors (of a total 72 products listed in Table 8, excluding the branch level and excluding subsectors in the clothing and footwear industries) identified as facing import-injury, i.e., the import-consumption ratio is at least 15 percent and the import-consumption ratio is increasing. Of these 39 cases, the import-consumption ratio is increasing at a rate of at most 3 percent annually for 13 product sectors.¹⁴ Domestic production

is expanding in real terms for all of these products except two -- rubber and plastic footwear (for which domestic consumption and imports are also declining in real terms) and textile machinery (for which domestic consumption is declining and imports are stagnant in real terms).

Of the 26 remaining cases (products for which the import-consumption ratio is growing at a rate of more than three percent annually) 18 products are in sectors in which US domestic production is growing in real terms.¹⁵ One of the remaining eight product sectors involves a product for which the US market is declining in real terms.¹⁶ In this sector domestic production is declining more rapidly than domestic consumption is declining and imports are increasing in real terms. Thus, imports might contribute to injury to a domestic industry that is also facing economic hardships that are domestic in nature. The remaining seven sectors involve products whose consumption is not declining

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14. These products include sugar, canned seafood, hardwood veneer and plywood, medicinals, china and earthen tableware, iron and steel bars, miscellaneous nonferrous metals, textile machinery, optical instruments and lenses, precious stones, sporting and athletic goods, and artificial flowers.
 15. These sectors include luggage, pottery, ceramic tiles, cut stones, steel pipe, precious metals, wire products, hand tools, cutlery, metal cutting machine tools, internal combustion engines, construction machinery, solid state semiconductors, trucks, photo equipment, games and toys, precious jewelry and costume jewelry.
 16. This product is jute.

in real terms but where consumption is growing very modestly -- less than three percent annual in real terms. Further, domestic output is stagnant or declining in all of these seven sectors. Finally, in all of these product sectors imports into the US market are growing by at least seven percent annually in real terms. Thus, all of the indicators of import-injury that have been examined consistently identify these seven products as cases in which the allegation of import-injury is valid. These sectors include the following products: leather, women's handbags, personal leather goods, radio and TV receivers, passenger cars, watches and clocks, and dolls and stuffed animals.

Import injury and imports from the LDCs

The seven products identified above as being seriously impacted by imports involve production technologies ranging from small scale labor intensive mature products through labor intensive assembly operations to capital intensive assembly operations; none of the products would be considered as frontier or high technology products. From this description one would anticipate that the LDCs would have a comparative advantage in all of these products. As of 1981, however, the LDCs were dominant suppliers (i.e., accounting for over 80 percent of US imports) of only two of the seven products; majority suppliers (i.e., accounting for more than 50 percent of US imports) of two more products, and minority suppliers of the remaining three products. It is interesting that if the products were ranked by

the hierarchy suggested above, the significance of LDCs as suppliers of US imports would decrease monotonically. This hierarchy is indicated below with LDC shares of US imports:

<u>Product hierarchy</u>	<u>LDC market share</u>
Dolls and stuffed animals	93%
Women's handbags	81%
Personal leather goods	70%
Leather	62%
Radio and TV receivers	53%
Watches and clocks	44%
Passenger cars	0%

In terms of import-injury it is clear that the LDCs are not the uniform sources of injurious imports. They do supply more than one-half of US imports of five of the seven products listed above (but only marginally above for one product). Certainly, DMEC suppliers of US imports also contribute significantly to import-injury in the US. But of course, this does not mean that the LDCs will not become increasingly competitive in those product sectors.

To summarize this case study of import injury in the US, we have produced two lists of likely import-injury products. The first list was based upon an examination of growth trends in domestic output, consumption and trade whereas the second list was based upon an examination of import penetration data. Both

of these lists were pared down by eliminating products for which import-injury was judged to be due to factors other than import competition. The resulting two lists follow:

Growth trends data

women's handbags
 personal leather goods
 radio and TV receivers
 passenger cars
 watches and clocks
 dolls and stuffed animals

Import penetration data

women's handbags
 personal leather goods
 radio and TV receivers
 passenger cars
 watches and clocks
 dolls and stuffed animals
 leather

The only differences in these two lists involve the last product in the second list. This product faces a domestic market that is stagnant, with domestic production unchanged during the decade under review, and imports are significant and growing; however, exports are also growing and growing more rapidly than imports although from much smaller base levels.

There are two important methodological lessons to be learned from this exercise. First, import penetration indicators of import-injury are significantly biased on two counts. They tend to indicate import-injury in situations in which both domestic output and imports are growing; in such cases no injury exists. They also tend to indicate import-injury when domestic consumption is declining; in such cases the major cause of injury is more likely to be domestic than due to imports.

The second methodological lesson is that when import-injury is present it is possible to identify the source of imports that cause injury. Most importantly, imports from the LDCs are not the major cause of injury in a majority of the import-injury cases examined in this study.