U.S. TRADE-RELATED EMPLOYMENT: 1978-84

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David B. Rohr
Anne E. Brunsdale

Kenneth R. Mason, Secretary to the Commission

This report was principally prepared by
Donald J. Rousslang and Andrew M. Parks, Office of Economics

Office of Economics
John W. Suomela, Director

Address all communications to
Kenneth R. Mason, Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

C O N T E N T S

	Page
Executive Summary	v
Introduction	1
Methodology and data:	
Methodology:	
The labor content of U.S. exports	3
The labor content of U.S. imports	3
The calculations and data	5
Translating labor content estimates into employment effects	6
Trade and aggregate employment	6
The concept of trade-related employment:	
General considerations	10
Labor content, job opportunities, and employment	10
Noncompetitive imports	10
Changes in prices and in the input-output structure of the economy	11
Substitution between imports and domestic output	11
Average and marginal production and employment effects	11
Estimates of the labor content of U.S. Trade:	
U.S. world trade	12
U.S. trade with selected trading partners	15
Appendix A. 1985 Projections for trade-related employment	101
Appendix B. Country group descriptions	111
Appendix C. Substitution between imports and domestic output	115
Appendix D. Calculating the labor content of U.S. trade--the equations	121
Appendix E. Review of previous studies	125
Appendix F. Data for U.S. exports and imports	131
Appendix G. Notice of investigation on U.S. trade-related employment	147
Bibliography	151

Tables

1. Summary of aggregate results for labor content and labor intensity of U.S. trade	13
2. Summary: Labor content of U.S. trade with the world, 1978-1984	16
3. Labor content of U.S. trade with the world, 1978-1984 (details)	18
4. Change in net labor content of U.S.-world trade between 1980 and 1984 and change in net labor content as a share of total 1984 employment by input-output categories	32
5. Change in net labor content of U.S-world trade between 1980 and 1984 and change in net labor content as a share of total 1984 employment by summary categories	34
6. Labor content of U.S. trade with selected trading partners, 1984	35
7. Summary of labor content of U.S. trade with the Organization for Economic Cooperation and Development (OECD), 1978-1984	36

CONTENTS

Page

8. Summary of labor content of U.S. trade with the European Economic Community (EEC), 1978-1984 ---------- 38
9. Summary of labor content of U.S. trade with the Newly industrializing countries (NICs), 1978-1984 ---------- 40
10. Summary of labor content of U.S. trade with the Caribbean Basin Countries, 1978-1984 ---------- 42
11. Summary of labor content of U.S. trade with South America, 1978-1984 ---------- 44
12. Summary of labor content of U.S. trade with the Less Developed Countries, 1978-1984 ---------- 46
13. Summary of labor content of U.S. trade with the Non-Market Economies (NME's) 1978-1984 ---------- 48
14. Summary of labor content of U.S. trade with the Organization of petroleum Exporting Countries (OPEC), 1978-1984 ---------- 50
15. Summary of labor content of U.S. trade with the Pacific Rim Countries, 1978-1984 ---------- 52
16. Summary of labor content of U.S. trade with Canada, 1978-1984 ---------- 54
17. Summary of labor content of U.S. trade with Mexico, 1978-1984 ---------- 56
18. Summary of labor content of U.S. trade with Brazil, 1978-1984 ---------- 58
19. Summary of labor content of U.S. trade with Venezuela, 1978-1984 ---------- 60
20. Summary of labor content of U.S. trade with Argentina, 1978-1984 ---------- 62
21. Summary of labor content of U.S. trade with Japan, 1978-1984 ---------- 64
22. Summary of labor content of U.S. trade with Hong Kong, 1978-1984 ---------- 66
23. Summary of labor content of U.S. trade with Korea, 1978-1984 ---------- 68
24. Summary of labor content of U.S. trade with Taiwan, 1978-1984 ---------- 70
25. Summary of labor content of U.S. trade with People's, Republic of China (PRC), 1978-1984 ---------- 72
26. Summary of labor content of U.S. trade with Singapore, 1978-1984 ---------- 74
27. Summary of labor content of U.S. trade with the Philippines, 1978-1984 ---------- 76
28. Summary of labor content of U.S. trade with the United Kingdom, 1978-1984 ---------- 78
29. Summary of labor content of U.S. trade with Italy 1978-1984 ---------- 80
30. Summary of labor content of U.S. trade with France 1978-1984 ---------- 82

CONTENTS

		Page
31.	Summary of labor content of U.S. trade with West Germany 1978-1984	84
32.	Summary of labor content of U.S. trade with the Netherlands, 1978-1984	86
33.	Summary of labor content of U.S. trade with Australia, 1978-1984	88
34.	Summary of labor content of U.S. trade with Israel, 1978-1984	90
35.	Summary of labor content of U.S. trade with South Africa, 1978-1984	92
36.	Changes in labor content of U.S.trade with selected trading partners	94
37.	Labor intensities of U.S. trade with selected trading partners, 1978, 1981, and 1984	95
38.	Labor intensities of U.S. manufacturing trade with selected trading partners, 1978, 1981, and 1984	98
A-1.	Projected labor content of U.S. trade with the world, 1985	104
A-2.	Estimated 1985 labor output ratios by two-digit I-O sector	106
A-3.	Results of labor-output estimating regressions	108
C-1.	Indexes of ratios of domestic price to import price for selected input-output sectors and U.S. dollar effective exchange rate	119
F-1.	U.S. trade with the world, 1978-1984	132
F-2.	Summary of U.S. trade with the world, 1978-1984	136
F-3.	Summary of U.S. trade with the OECD, 1978-1984	136
F-4.	Summary of U.S. trade with the EEC, 1978-1984	136
F-5.	Summary of U.S. trade with the NICs, 1978-1984	137
F-6.	Summary of U.S. trade with the Caribeen Basin Countries 1978-1984	137
F-7.	Summary of U.S. trade with South American, 1978-1984	137
F-8.	Summary of U.S. trade with the Less Developed Countries, 1978-1984	138
F-9.	Summary of U.S. trade with the Non-Market Economies (NMEs), 1978-1984	138
F-10.	Summary of U.S. trade with OPEC, 1978-1984	138
F-11.	Summary of U.S. trade with the Pacific Rim countries 1978-1984	139
F-12.	Summary of U.S. trade with the Canada, 1978-1984	139
F-13.	Summary of U.S. trade with Mexico, 1978-1984	139
F-14.	Summary of U.S. trade with Brazil, 1978-1984	140
F-15.	Summary of U.S. trade with Venezuela, 1978-1984	140
F-16.	Summary of U.S. trade with Argentina, 1978-1984	140
F-17.	Summary of U.S. trade with Japan, 1978-1984	141
F-18.	Summary of U.S. trade with Hong Kong, 1978-1984	141
F-19.	Summary of U.S. trade with Korea, 1978-1984	141

CONTENTS

		Page
F-20.	Summary of U.S. trade with Taiwan, 1978-1984	142
F-21.	Summary U.S. trade with the People's Republic of China (PRC), 1978-1984	142
F-22.	Summary of U.S. trade with Singapore, 1978-1984	142
F-23.	Summary U.S. trade with the Philippines, 1978-1984	143
F-24.	Summary of U.S. trade with the United Kingdom, 1978-1984	143
F-25.	Summary of U.S. trade with Italy, 1978-1984	143
F-26.	Summary of U.S. trade with France, 1978-1984	144
F-27.	Summary of U.S. trade with West Germany, 1978-1984	144
F-28.	Summary of U.S. trade with the Netherlands, 1978-1984	144
F-29.	Summary of U.S. trade with Australia, 1978-1984	145
F-30.	Summary of U.S. trade with Israel, 1978-1984	145
F-31.	Summary of U.S. trade with South Africa, 1978-1984	145

Executive Summary

This study provides estimates of the labor content of U.S. merchandise trade for the years 1978 through 1984, with projections for 1985. 1/ It provides estimates for both the direct and the total labor content of this trade. The total labor content includes the labor required to produce all of the intermediate inputs embodied in the traded goods. Labor content estimates are given for 79 individual industry sectors. Labor content estimates are given for total U.S. trade, and for U.S. trade with selected country groups and selected countries. The country groups are the other members of the Organization for Economic Cooperation and Development (OECD), the European Economic Community, the newly industrializing countries, the Caribbean Basin countries, the South American countries, the less developed countries, the nonmarket economy countries (NMEs), the Organization of Petroleum Exporting Countries (OPEC), and the Pacific Rim countries. The selected countries are, Canada, Mexico, Brazil, Venezuela, Argentina, Japan, Hong Kong, Korea, Taiwan, the People's Republic of China, Singapore, the Philippines, the United Kingdom, Italy, France, West Germany, the Netherlands, Australia, Israel, and South Africa.

Labor content estimates are an important first step toward estimating the employment effects of trade, but actual employment effects depend on a number of additional factors that are difficult to determine. Simply stated, an increase in imports does not necessarily cause a reduction in aggregate domestic employment, and an increase in exports does not necessarily cause an increase in aggregate domestic employment. In some cases, quite the reverse may be true. For example, elimination of petroleum imports would cause severe economic dislocations and job losses in a number of sectors that use petroleum as an intermediate input. These factors are not accounted for in simple trade and employment exercises, where domestic producers generally are assumed capable of replacing imports with no increase in their production costs. Even if the changes in trade are the result of deliberate government actions, like a tariff that restricts imports or a subsidy that promotes exports, the effects on employment are ambiguous. A review of the academic literature indicates that the magnitude and, indeed, the direction of the employment effects of such policy-induced changes in trade have not been definitely determined.

Finally, it should be noted that the estimates of trade-related employment presented in this report take no account of differences in the labor among industries. For example, a man-hour of labor with a wage of $4.00 counts the same as a man-hour of labor with a wage of $20.00. Thus, the estimates in this report show only the quantity, not the value, of trade-related employment.

1/ Vice Chairman Liebeler and Commissioner Brunsdale voted to disapprove issuance of this study. To obtain copies of their views, contact the Secretary's Office and request CO63-J-29 (May 9, 1986) for Vice Chairman Liebeler's memorandum and CO65-J-16 (April 25, 1986) for Commissioner Brunsdale's memorandum.

Results for U.S. world trade

The United States ran increasingly larger deficits in jobs related to merchandise trade since 1982, after running small surpluses in 1980 and 1981. The total labor content of U.S. imports grew from 6.3 million jobs in 1978 to 8.1 million jobs in 1984. The total labor content of U.S. exports grew from 5.2 million jobs in 1978 to a high of 6.7 million jobs in 1980 and then declined to 5.5 million jobs in 1984. The balance of trade-related employment went from a deficit of 1.1 million jobs in 1978 to a surplus of 0.3 million jobs in 1980 and then to a deficit of 2.6 million jobs in 1984. The deficit for 1985 is projected to reach 2.8 million jobs. Between 1980 and 1984, the balance on trade-related employment fell by 2.9 million jobs, an amount equal to 3.2 percent of total U.S. employment in 1984, but total employment rose by 5.2 percent over the same period.

Results for individual industries

On average over the period 1978-84, the industries with the largest total labor content of imports were Other agricultural products (input-output industry 2), Apparel (IO 18), Primary metals manufacturing (IO 37 and 38), Motor vehicles and equipment (IO 59), Miscellaneous manufacturing (IO 64), Wholesale and retail trade (IO 69), and Business services (IO 73). In terms of the simple trade and employment exercise, these are the industries most adversely affected by imports, either because imports occur in the industries directly or because imports displace domestic output that uses intermediate inputs from these industries. Industries that contributed the largest labor content to all U.S. exports were Other agriculture products (IO 2), Transportation and warehousing (IO 65), Wholesale and retail trade (IO 69), and Business services (IO 73).

Summary estimates were calculated for the labor content of merchandise trade for five aggregate sectors: Agriculture, Manufacturing, Mining, Petroleum, and Services. In 1984, the balance in U.S. agriculture labor embodied in total merchandise trade (the agriculture labor embodied in U.S. exports minus the agriculture labor embodied in U.S. imports) was a surplus of 175,000 jobs; the balance in manufacturing labor was a deficit of 2,289,000 jobs; the balance in mining labor was a deficit of 41,000 jobs; the balance in petroleum labor was a deficit of 189,000 jobs; and the balance in services labor was a deficit of 216,000 jobs. These balances fell between 1980 and 1984 in every sector except petroleum, where the balance rose slightly. The balance declined by 124,000 jobs in agriculture, 1,859,000 jobs in manufacturing, 27,000 jobs in mining, and 871,000 jobs in services. The balance improved by less than 7,000 jobs in petroleum. The pattern of changes

in actual employment between 1980 and 1984 was much different from the changes in trade-related employment. Changes in trade-related employment are only one part of the change in actual employment. Changes in actual employment are the sum of changes due to changes in U.S. demand, changes in foreign trade, and changes in the productivity of labor. Actual employment grew by 90,000 jobs in agriculture, fell by 702,000 jobs in manufacturing, fell by 100,000 jobs in mining, grew by 24,000 jobs in petroleum, and grew by 5,458,000 jobs in services.

Results for selected trading partners

In 1984, the United States ran deficits of 900,000 jobs or more with the other members of the OECD as a group, the NIC's as a group, the Pacific Rim countries, and with Japan. The deficit with the other OECD members was 1.4 million jobs, the deficit with the NIC's was 1.1 million jobs, the deficit with the Pacific Rim countries was 1.0 million jobs, and the deficit with Japan was .9 million jobs. The United States ran small surpluses in 1984 with the NMEs, OPEC, Venezuela, the United Kingdom, the Netherlands, Australia, and Israel. Only one of these surpluses (that with the Netherlands) is greater than 100,000 jobs. The United States ran small deficits in 1984 with all the other trading partners considered in this study. These small deficits ranged from 1,000 to 432,000 jobs.

U.S. exports were more labor intensive than U.S. imports for overall U.S. trade and for U.S. trade with most of the selected trading partners considered in this study. The exceptions were U.S. trade with the NICs and the Pacific Rim countries. For each of these country groups, the labor intensity of U.S. imports significantly exceeded the labor intensity of U.S. exports, largely as a result of the high labor intensities of U.S. imports from Hong Kong, Korea, and Taiwan.

For overall U.S. trade in manufactured goods, the labor intensity of U.S. exports is less than the labor intensity of U.S. imports, although by only a small margin. However, in U.S.-manufactured trade with the more developed countries (members of the OECD), the labor intensity of U.S. exports generally exceeds the labor intensity of U.S. imports.

Introduction

The purpose of this study is to provide estimates of the labor content of U.S. merchandise trade for the years 1978 through 1984, with projections through 1985. 1/ These labor content estimates are often loosely referred to as the employment or job opportunities related to trade. 2/ However, great care must be exercised in translating the labor content estimates into employment effects of trade.

The labor content estimates are given for each industry in the Commerce Department's small input-output table. This table has 79 industries, of which 62 contain merchandise trade. 3/ Estimates are given for both the direct labor content and the total labor content of trade in each industry. The direct labor content refers to the labor in the industry that is related to the industry's own trade. For example, the direct labor content of glass exports is the labor needed in the glass industry to produce the exported glass. The total labor content includes employment in the industry that is related to all trade, including trade of other industries. For example, the total labor content of glass exports is the direct labor content of exports from the glass industry plus the labor needed to make the glass contained in exports of other industries that use glass, such as the auto industry. 4/

Interest in the labor content of trade has recently been strengthened by record U.S. trade deficits and large adjustment costs for some U.S. traded-goods industries. Much of the recent disruptive effect of trade is due to the high value of the dollar in foreign-exchange markets. However, at least some

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1/ The 1985 projections are given in app. A.

2/ See, for example, Eva E. Jacobs and Ronald E. Kutscher, "Employment in Relation to U.S. Imports," Monthly Labor Review July 1962, pp. 771-773; Donald P. Eldridge and Norman Saunders, "Employment and Exports, 1963-72," Monthly Labor Review August 1973, pp. 16-27; Bureau of International Labor Affairs, "The Impact of Changes in Manufacturing Trade on Sectoral Employment Patterns-Progress Report," Trade and Employment; National Commission for Manpower Policy, Special Report No. 30, November 1978; and Lester A. Davis, Office of Trade and Investment Analysis, International Trade Administration, U.S. Department of Commerce, Domestic Employment Generated by U.S. Exports, April 1983.

3/ The input-output table is a matrix showing the intermediate inputs that each industry needs to produce its output. The industry classifications are not the same as those of the Standard Industrial Classification.

4/ There is an alternative way of presenting the indirect effects. The alternative is to show for each sector the total jobs in the economy related to trade in that sector. For example, using this alternative, the total labor content of glass exports would include jobs in the industries that supply inputs to make the glass exports, such as stone and clay mining, and chemicals. The total number of jobs related to trade is the same for both alternatives. The only diferences between the two alternatives is the industry classification of the indirect effects.

of the adjustment burden is due to structural shifts in comparative advantage between the United States and its trading partners. Of particular importance has been the rapid assimilation of technology and the growth of capital stocks in the newly industrializing countries (NIC's). As these countries continue to develop, they are expected to become competitive in goods that are higher up on the technological ladder and goods that require more capital to produce.

Theoretically, the structure of bilateral trade flows between two countries does not necessarily reveal true patterns of comparative advantage. 1/ However, the structure of U.S. trade with individual trading partners does appear to mirror differences in comparative advantage. 2/ Therefore, this study provides separate labor content estimates for U.S. trade with selected country groups and selected countries. The selected country groups are the Organization for Economic Cooperation and Development (OECD), the European Economic Community (EEC), the newly industrializing countries (NICs), South America, the Caribbean Basin (CB), the less developed countries (LDC's), the nonmarket economy countries (NMEs), the Organization of Petroleum Exporting Countries (OPEC), and the countries of the Pacific Rim (CPR). 3/ The selected individual countries are Canada, Japan, Brazil, Mexico, Hong Kong, the Republic of Korea (Korea), Taiwan, the People's Republic of China (China), the United Kingdom, Italy, France, West Germany, Philippines, Singapore, Netherlands, Argentina, Venezuela, Israel, Australia, and South Africa.

The present study updates the results of the previous Commission study of U.S. trade-related employment (USITC Publication 1445). (The previous study presented estimates for 1978 through 1982.) It also makes several important modifications to the estimates in the previous study. First, the previous study used the technical coefficients of the 1972 input-output table. These results have been updated using the coefficients of the 1977 input-output table, which first became available in 1984. Second, the results for 1982 in the previous study were based on labor-output ratios that were projected by the Bureau of Labor Statistics (BLS). The present study uses the 1982 ratios obtained by the BLS through actual surveys. The results for 1984 are based on BLS projected labor-output ratios, since the actual BLS survey data on these ratios are not yet available. The projections for 1985 are based on regression estimates of 1985 productivity done by the Commission staff. Finally, an error in the concordance used to allocate coal exports to the input-output categories in the previous study has been corrected.

The Commission studies make several important contributions to existing estimates of the labor content of U.S. imports and exports. They provide the first comprehensive set of detailed sector estimates of the labor content of

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1/ This point is explained by Robert E. Baldwin, "Determinants of the Commodity Structure of U.S. Trade," American Economic Review, March 1971, pp. 126-146.

2/ This point is made in Robert E. Baldwin and R. Spence Hilton, "A Technique for Indicating Comparative Costs and Predicting Changes in Trade Ratios," Review of Economics and Statistics August 1984, PP. 105-110.

3/ The member countries included in each of the groups are given in app. B.

total U.S. merchandise imports since the BLS estimates published in 1962, 1/ and the first detailed sector estimates of the labor content of trade in manufactured goods since the Bureau of International Labor Affairs (ILAB) study published in 1978. 2/ Also, they are the first studies to provide separate labor content estimates for U.S. trade with individual countries and groups of countries.

The labor content estimates contained in this study provide information about the effects of changes in trade on demand for labor in individual industry sectors in the United States. Since the role of trade in the U.S. economy is expanding rapidly, this information is important for analyzing changes in the structure of employment in the economy and for predicting future changes in this structure. This information is also useful in formulating U.S. policies to deal with adjustment problems that arise when changes in trade cause large and sudden shifts in the pattern of labor demand.

Methodology and Data

Methodology

The labor content of U.S. exports.--The direct labor content per dollar of exports from an industry, is measured as the industry's total employment divided by the total dollar value of the industry's output. That is, the direct labor content per dollar of exports is assumed to be the same as the average labor content per dollar of output from the industry. The estimates for the labor content of exports include the labor required to transport and handle the exports between the production site and the U.S. port of embarkation. However, the estimates do not include any U.S. labor that may have been involved in the international transportation of the exports, such as U.S. airfreight or shipping of the exports from the port of embarkation to the importing country.

Estimates of the total labor content of exports are made using the small (79 sector) U.S. input-output table produced by the Department of Commerce. Both direct and total labor content estimates are presented for exports in each sector. The direct labor content estimate shows the number of jobs within the sector that are related to the sector's own exports. The total labor content estimate shows the number of jobs within the sector that are related to all U.S. exports, whether these exports originate within the sector or in other sectors. The total labor content estimates are based on the assumption that all the intermediate inputs are also produced domestically. This obviously overstates the number of U.S. jobs related to U.S. exports, since we import some of the inputs needed to make these exports. However, this overstatement is not present in the estimates of the net labor content of trade, in which the labor content of imports is subtracted from the labor content of exports.

The labor content of U.S. imports.--It is difficult to estimate the actual foreign labor content of U.S. imports, because these estimates would require data on foreign employment and production technology. Therefore,

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1/ Eva E. Jacobs and Ronald E. Kutscher, op. cit.
2/ Bureau of International Labor Affairs, op. cit.

following the approach first adopted by Wassily Leontief, the labor content of U.S. imports of a good are estimated to be the labor inputs that would be required to make the same dollar amount of the domestic substitute. Imports are valued at the U.S. port of entry. These import values include trade and transportation margins required to ship them from the foreign port, and U.S. tariff duties. This value of imports is assumed to have the same labor content as an equal value of domestic output at the plant or production site.

Labor involved in transportation and handling of imports from the domestic port to the consumer are not imported and are thus not part of the labor embodied in U.S. imports. Also, there are no accurate measures available for the labor involved in transport and distribution of imports after they reach the U.S. port. Furthermore, if imports were replaced by domestic production, there would be labor involved in transporting and handling the domestic output between the plant and the consumer, and this labor may be greater or less than the labor involved in transporting and handling the imports between the port and the consumer.

There are two major problems with the approach used in this study to measure the labor content of imports. First, some imports, such as chromium and manganese, have no close domestic substitute. Second, even if a close domestic substitute exists, the U.S. labor required to produce the same dollar amount of this substitute may differ significantly from the labor needed to produce the same quantity of this substitute. For example, imports of apparel are apparently much lower priced than the domestic substitute of equal quality. 1/ Thus, the U.S. labor involved in a dollar of apparel output is significantly less than the U.S. labor that would be required to produce the quantity of apparel represented by a dollar of apparel imports. Dr. Rudy Oswald has argued that recent changes in the dollar exchange rate have caused imports over virtually all sectors to be lower priced than the domestic substitute of equal quality, 2/ indicating that in a direct calculation, the labor content of imports might be understated in most sectors.

Despite these problems, it is reasonable to use the dollar-for-dollar assumption where a single methodology must be applied consistently across a number of individual industries. In any event, extensive data and resources would be required to replace it with a better alternative. Therefore, this assumption is used to derive the comprehensive industry estimates of the labor

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1/ Imports are priced at the port of entry, inclusive of trade and transport margins. Domestic output is priced at the factory gate of the U.S. producer. Presumably, goods of equal quality sell for the same price at the retail level. See the report by the Research Department, International Ladies' Garment Workers' Union, "Estimation of Apparel (Knit and Woven) Imports, Methodological Note," September 1985. Also, see the Economic Consulting Services, Inc., "Fibers, Textiles, Apparel: A Unified Industry Dealing With the Import Problem," January 1981. An alternative to the dollar-for-dollar assumption for textiles and apparel is presented in Joseph Pelzman and Randolph Martin, "Direct Employment Effects of Increased Imports: A Case Study of the Textile Industry," Southern Economic Journal, October 1981 pp. 412-426.

2/ See the statement by Rudy Oswald in the transcript of the hearing, U.S. International Trade Commission, in the matter of U.S. Trade-Related Employment, investigation No. 332-154, June 30, 1983, p. 77.

content of imports in this report. However, appendix C provides an adjustment factor for the direct labor content of apparel imports on the basis of information supplied by the International Ladies' Garments Workers' Union. Appendix C also contains adjustment factors for certain other sectors where available data allowed us to account for changes in relative prices of imports and domestic output caused by recent appreciation of the dollar.

Two kinds of labor contents of imports are estimated for each sector, just as was done for exports. These are the direct labor content of imports in the sector and the total labor in the sector related to imports in all sectors.

The calculations and data

The labor content of U.S. imports from each group of supplying countries was calculated for each year as follows. Imports were measured inclusive of international transportation costs and tariff duties, and classified by input-output sector. They were then deflated to 1977 dollar values using U.S. price deflators. To obtain the direct labor content of imports for each industry, the deflated import value was multiplied by the deflated (1977 constant dollar) labor-output ratio for the appropriate year.

To obtain the total labor content of imports, the deflated import values were first multiplied by the total requirements inverse of the 1977 input-output table. The total requirements inverse is a matrix that shows the total amount of each input required to produce a dollar of final output in each industry. The resulting industry outputs were then multiplied by the appropriate deflated labor-output ratios. The total labor content estimates for each sector give the labor content in the sector that is related to U.S. imports in all sectors.

The labor content of U.S. exports for each sector was calculated in the same way as the labor content of imports, except that since export data give the value of exports at the U.S. port, these values must be adjusted to get the value of U.S. exports at the domestic producer's plant gates. To make this adjustment, margins compiled by the Bureau of Economic Analysis were used to allocate part of the port value of exports to transportation, and to warehouse and wholesale expenses incurred in moving the exports from the producer's plant gates to the port of embarkation. 1/ The equations used to calculate the labor content of imports and exports are given in appendix D.

Data on U.S. imports and U.S. exports are from official statistics of the U.S. Bureau of the Census. Imports are classified by the Tariff Schedules of the United States (TSUS), and exports are classified by Schedule B. These trade data are concorded to the Bureau of Economic Analysis input-output categories using concordances prepared by the Commission's Office of Industries. Imports are landed, duty-paid value of imports (cost, insurance and freight plus duties collected). Exports are valued F.A.S. at the U.S. port.

1/ Thus, services in Transportation and warehousing (IO 65), and Wholesale and retail trade (IO 69) that are used to move exports from the producer's plant gates to the port of embarkation are treated as exports.

Data on ratios of labor to output are from the Office of Economic Growth and Employment Projections in the BLS. Data for domestic output in 1984 are not yet available, so the BLS projected these data using indexes of industrial production in order to obtain ratios of labor to output for 1984.

Translating Labor Content Estimates Into Employment Effects

This study presents estimates only of the labor content of imports and exports. Although labor content estimates are commonly interpreted as the employment impact of imports and exports, actual employment effects depend on a number of additional factors that are difficult to quantify. First, a change in imports or exports does not automatically translate into a change in the trade balance or in aggregate employment. Second, there are major technical problems involved in translating estimates of the labor content of exports and imports into employment effects even for disaggregate industry sectors. This section first discusses how changes in trade can affect aggregate employment. 1/ It then discusses the relationship between estimates of trade-related employment and the employment effects of trade. 2/

Trade and aggregate employment

Changes in trade can affect domestic employment in the same way that changes in investment, government expenditures, or private consumption expenditures can affect employment. However, under the current system of flexible exchange rates, policy-induced changes in exports or imports do not necessarily translate into corresponding changes in the trade balance. These policies will affect the U.S. trade balance only if they also affect net U.S. borrowing from abroad. 3/ In many cases, the effects on foreign borrowing are either short term or nonexistent. For example, unless the imposition of a tariff on imports causes a lasting net decrease in U.S. borrowing, the net effect on the trade balance will be offset by appreciation of the dollar. The issue of the timing, duration, and extent of the net trade balance and employment effects of import restrictions and export subsidies ("commercial" policies) is still a matter of some debate. Until fairly recently, the

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1/ App. E contains a review of the academic literature on this issue.

2/ An excellent survey of these issues is contained in the monogram by Walter Salant, "The Effects of Increases in Imports on Domestic Employment: A Clarification of Concepts," A Special Report of the National Commission for Manpower Policy, January 1978. Our discussion of these problems borrows heavily from his work.

3/ This is true because imports must be paid for either by exporting or by borrowing.

conventional wisdom among economists was that, if exchange rates are flexible, exchange-rate adjustments will fairly quickly and completely eliminate the trade-balance effects of commercial policies. 1/

More recently, Russell Boyer (1977) 2/ showed that the short-run trade-balance effects of commercial policies depend on whether the home country is a net debtor or a net creditor with the rest of the world. Barry Eichengreen 3/ showed that tariffs may have some positive short-run trade-balance effect, but are likely to have a negative trade-balance effect in the longer run. Donald Rousslang and Joseph Pelzman 4/ showed that Eximbank loans can have a small, positive short-run trade-balance effect even if exchange rates adjust to immediately offset the trade-balance and employment effects of other commercial policies.

The recent experience with the large fiscal deficit, dollar appreciation, and large trade deficit helps clarify how revenues from a tariff would affect the U.S. trade balance. By reducing the Federal fiscal deficit, tariff revenue would reduce government borrowing and thus put downward pressure on domestic interest rates. The reduction in domestic interest rates would reduce net inflows of foreign capital and thus allow the dollar to depreciate somewhat. The fall in the value of the dollar would reduce the trade deficit. 5/

1/ See, for example, Edward Tower, "Commercial Policy Under Fixed and Flexible Exchange Rates.," Quarterly Journal of Economics, August 1973, pp. 436-454; Egon Sohmen, Flexible Exchange Rates. Chicago: University of Chicago Press, 1969; S.C. Tsiang, "The Role of Money in Trade Balance Stability: A Synthesis of the Elasticity and Absorption Approaches, American Economic Review, December 1961, pp. 912-936. Reprinted in Readings in International Economics. Homewood, IL: Richard D. Irwin, 1968, pp. 389-412; Harry G. Johnson, "Towards a General Approach to the Balance of Payments," International Trade and Economic Growth, London: Allen and Unwin, 1958, p. 6. Reprinted in Richard N. Cooper, ed., International Finance, Middlesex, England: Penguin Modern Economics, 1969, p. 11; Svend Laursen and Lloyd A. Metzler, "Flexible Exchange Rates and the Theory of Employment," Review of Economics and Statistics, vol. 32 November 1950, pp. 281-299; and Arnold C. Harberger, "Currency Depreciation, Income and the Balance of Trade," Journal of Political Economy, vol. 58, February 1950, pp. 47-50.

2/ Russell S. Boyer, "Commercial Policy Under Alternative Exchange Rate Regimes," Canadian Journal of Economics, vol. 43, May 1977, pp. 219-232.

3/ Barry Eichengreen, "A Dynamic Model of Tariffs, Output and Employment Under Flexible Exchange Rates," Journal of International Economics May 1981, pp. 341-359.

4/ Donald Rousslang and Joseph Pelzman, "Export-Import Bank Loans and the Trade Balance Under Flexible Exchange Rates," Mimeo, Bureau of International Labor Affairs, U.S. Department of Labor, January 1983.

5/ This process is modeled in Donald J. Rousslang and John W. Suomela "The Trade Effects of a United States Import Surcharge," Journal of World Trade Law, September-October 1985, pp. 441-450.

Although commercial policies apparently can have some effect on the short-run trade balance, the effects of other factors such as business cycles, domestic monetary policies, and sudden changes in prices of important traded commodities appear to be much more significant. Business cycles cause shifts in the trade balance, because U.S. imports depend largely on U.S. income, whereas U.S. exports depend largely on foreign incomes. When U.S. income and demand are at a cyclical high, imports tend to be high, and when foreign income and demand is at a cyclical high, U.S. exports tend to be high. Thus, for example, if the U.S. economy is experiencing a boom and foreign demand is low, the U.S. trade balance will tend toward deficit. Likewise, when foreign demand is high and the U.S. economy is depressed, the U.S. trade balance will tend toward surplus. This tends to cause the trade balance and aggregate employment to be negatively correlated.

Domestic monetary and fiscal policies can affect the short-run trade balance through their effect on interest rates and capital flows. This effect was demonstrated recently when continued deficit spending, combined with a movement toward noninflationary growth of the money stock, caused U.S. inflation to abate and interest rates to rise, so that the United States experienced a high real rate of interest that attracted substantial short-term capital inflows from abroad. With the current system of flexible exchange rates, these capital inflows caused the dollar to appreciate, U.S. international price competitiveness to decline, and the U.S. trade balance to move toward deficit.

Sudden and large shifts in prices of important exports or imports also tend to cause short-run shifts in the trade balance. For example, most countries financed their increased oil bills following the sudden oil price increase in 1973 by borrowing rather than by increasing their exports. Later, payment in goods was made as oil exporters adjusted to their increased wealth and imported more goods, allowing oil importers to pay for more oil through exports rather than through borrowing. Thus, trade of oil exporters and oil importers both moved toward balance after the initial effects of the oil price increase.

Long-term international lending and borrowing are an important source of surpluses or deficits in the U.S. trade balance. The trade-balance effects of these loans can best be understood in terms of the following identity that relates capital flows and the trade balance within the overall balance of payments:

$$PCF + TB + OCF = 0.$$

Here, PCF is net private capital inflows (new borrowing, minus new lending, plus receipt of repayments on old loans made to foreigners, minus repayments on old loans to U.S. citizens); TB is the trade balance (exports minus imports); and OCF is official capital flows (net changes in holdings of foreign reserves by the U.S. Treasury and Federal Reserve). This identity shows that a trade deficit (surplus) is equal to the sum of net private capital inflows (outflows) plus net official capital inflows (outflows). Completely floating exchange rates would mean that OCF is equal to zero,

because official institutions would no longer buy or sell foreign reserves. Thus, under floating exchange rates, an increase in new private lending to foreigners or repayments of old foreign loans would move the trade balance toward surplus, whereas new private borrowing or receipt of interest from old loans to foreigners would move the trade balance toward deficit.

The United States has gone through several stages of borrowing and lending as it progressed from a young agricultural nation to a mature industrialized nation. 1/ In the first stage, as a young growing nation (from the Revolutionary War until after the Civil War) the United States borrowed from Europe. Matching this financial flow, the United States imported more than it exported, and the additional resources allowed it to build up its capital stocks more quickly. In the second stage (from shortly after the Civil War to World War I), the United States was a mature debtor nation. This stage was characterized by little net borrowing or lending. New lending just about canceled new borrowing. However, the U.S. trade balance showed small surpluses, so that it could pay interest and dividends on the debt built up as a young debtor nation. In the third stage (from World War I until the oil price shocks) the United States was a new creditor nation. In this stage, the United States became a net lender to the rest of the world and ran corresponding balance-of-trade surpluses to affect the loans in real terms. These loans were large during and just after World War I, and in the years following World War II when the United States lent billions of dollars overseas to help rebuild the industries of Europe and Japan.

More recently (since the oil price shocks), the United States appeared to enter a fourth stage by becoming a mature creditor country. New lending became much less important than income from U.S. investment stocks abroad. For example, in 1981, net foreign investment income (receipts of this income, which includes fees and royalties, minus such income payments to foreigners) was $30.6 billion. The book value of the U.S. stock of direct investment abroad was $227 billion, whereas the stock of foreign direct investment in the United States was only $90 billion. New lending abroad was actually negative that year, with inflows of direct investment from other countries being greater than U.S. direct investment outflows. With flexible exchange rates, the inflow of investment income tended to cause the dollar to appreciate and to push the trade balance into deficit. This tendency to deficit could have been eliminated only if the United States refused to allow repayment of its prior foreign loans, either by increasing net new lending abroad to offset repayments of these loans or by turning the loans into gifts.

Most recently, large inflows of short-term capital from abroad have caused very large U.S. trade deficits. In 1985, the size of these inflows may actually have caused the United States to become a net debtor to the rest of the world. 2/

1/ This paragraph borrows heavily from Paul Samuelson's text, Economics, (10th ed.) New York: McGraw-Hill, 1976, pp. 660 and 661.

2/ Official figures of the Department of Commerce show the value of foreign investment stocks in the United States exceeds the value of U.S. investment stocks abroad. However, much of the U.S. investment stock abroad has been in place for a number of years and may have appreciated from the book value at which it is recorded.

The concept of trade-related employment

General considerations.--The basic macroeconomic assumptions used by those who interpret labor content estimates as employment effects are that prices and total expenditures would both remain unchanged if trade were eliminated. This assumption tends to cause trade and employment exercises to show a negative employment effect of trade. This is true, because trade acts much the same as a technological innovation that allows us to increase total output with the same or smaller amounts of inputs.

Walter Salant and Beatrice Vaccara noted this similarity between the effects of trade and improvements in technology. They state "Both types of changes create the opportunity, when the resources displaced can be absorbed elsewhere, to attain a higher output or more leisure; neither contains any guaranty that the opportunity will be used instead of being dissipated in involuntary unemployment." 1/ Imagine, for example, the inefficiency of growing coffee and bananas domestically, of using substitute domestic energy sources for all oil imports, of Hong Kong and Singapore growing their own wheat, and of less developed countries producing (or attempting to produce) their own computers and aircraft. Such endeavors might increase total employment, but they would not benefit the local population. Elimination of trade would reduce overall productivity, so that more labor would be required to produce the same amount of goods and services.

Labor content, job opportunities, and employment.--The concept of employment related to imports is very different from the concept of employment related to exports, because the domestic jobs that would produce imported goods do not actually exist, whereas those required to produce exports do exist. It is also important to remember that changes in employment related to imports or exports in a sector refer to changes in demand for labor and do not translate directly into layoffs or new hires. For example, an increase in imports in a growing industry probably would not cause domestic workers to be displaced in the industry, but rather would reduce the number of new hires in the domestic industry. For this reason, the ILAB study refers to trade-related employment as "job opportunities" and is very careful to distinguish between this concept and actual employment changes.

Noncompetitive imports.--Another problem in relating changes in the labor content of imports to changes in employment is that some imports are not produced domestically or are produced under limitations that prevent output from expanding to replace imports. This problem is usually more serious for raw materials and primary products than for manufactured products. For example, reductions in imports of chromium, tungsten, or oil would reduce domestic employment in industries that rely on those materials for inputs to production. Reductions in imports of coffee, tea, or tropical fruits and vegetables would reduce consumption of those products, with unpredictable effects on demand for items that complement or substitute for the imported products. The BLS studies avoided these problems by measuring the labor content for imports of competitive goods only. The ILAB study examined only the manufacturing sector, where the problem of noncompetitive imports is greatly reduced.

1/ Walter S. Salant, and Beatrice N. Vaccara, Import Liberalization and Employment, Washington, DC.: The Brookings Institution, 1961, p. 96.

Changes in prices and in the input-output structure of the economy.--Some goods are not produced domestically because imports are much more economical. Replacing such imports with domestic output would raise prices substantially. Even where domestic output is undertaken, a restriction on imports would result in significant price increases if additional domestic supply can be produced only at much higher cost. Also, prices of some exports would fall dramatically if U.S. exporters were cut off from foreign markets. The resulting changes in prices would cause producers to substitute between inputs in production and would cause consumers to substitute between goods in consumption. The further one moves from actual trade and production patterns, the greater is the error in using fixed input-output coefficients and fixed prices for intermediate and final output. The ILAB study tried to account for this difficulty by concentrating on the changes in job opportunities related to changes in trade over a short-run period of several years.

Substitution between imports and domestic output.--The assumption that a dollar of imports substitutes for a dollar of domestic output can give misleading results, particularly where labor content estimates are interpreted as employment effects of imports. Previous studies used this assumption, because they lacked a viable alternative, especially where consistent estimates were needed for a wide range of disaggregated industries. The assumption has come under severe criticism from producer and labor organizations in the textile and apparel industries, and their criticism appears to be well justified. 1/

Average and marginal production and employment effects.--The labor content estimates are based on average labor-output ratios in each sector. These averages may give misleading indications of the short-run employment effects of trade changes for two reasons (in addition to those we have already discussed). First, the labor input may change by a greater or smaller percentage than output, because the marginal productivity of labor may differ from its average productivity. For example, as the output of an industry contracts, older, less productive facilities usually are closed down first, and the least productive workers dismissed first, so that the marginal productivity of the displaced workers is less than the average. From this, one might expect employment to contract by a greater percentage than output. But in some cases, scale economies may cause employment to contract by a smaller percentage than output.

Second, and more important for the short run, employers tend to "hoard" labor in the face of short-run changes in output due to the costs associated with labor turnover. This effect usually outweighs the effects of changes in productivity. For example, labor-output ratios typically increase during recessions and decrease during recoveries. This is contrary to the expected result that labor-output ratios would decrease during a business decline, because less productive facilities would be removed from production first.

1/ Research Department, International Ladies' Garments Workers' Union, op. cit; and Economic Consulting Services, op. cit. App. C gives adjustment factors for the direct labor content in these industries on the basis of estimates of price differences between domestic output and imports supplied by the International Ladies' Garments Workers' Union.

Estimates of the Labor Content of U.S. Trade

U.S. world trade

Table 1 summarizes the estimates of the labor content and labor intensities of U.S. merchandise imports and exports during 1978-84. Entries in the table show that the U.S. trade balance in terms of total labor content rose from a deficit of 1.1 million jobs in 1978 to a surplus of 0.3 million jobs in 1980, and then fell to a deficit of 2.6 million jobs in 1984. The total labor content of exports climbed fairly rapidly, from 5.2 million jobs in 1978 to 6.7 million jobs in 1980, and then declined steadily to 5.5 million jobs in 1984, even though the dollar value of exports climbed between 1982 and 1984. The total labor content of imports rose steadily from 6.3 million jobs in 1978 to 6.6 million jobs in 1983 and then jumped dramatically to 8.1 million jobs in 1984. In contrast, as shown in the tabulation below, the dollar value of imports fell after 1981 and did not recover to the 1981 levels until 1984, when it increased dramatically.

U.S. trade with the world
(billion dollars)

Year	Exports	Imports
1978	137.4	189.9
1979	176.7	224.9
1980	214.3	259.0
1981	225.3	280.1
1982	201.7	261.9
1983	202.8	277.9
1984	220.1	350.4

Table 1 also shows that the labor intensity of exports exceeded the labor intensity of imports in 1978-84, which reflects the well-known Leontief paradox. However, the gap between the two averages narrowed considerably, from a difference of 6,500 jobs per billion dollars in 1980 to a difference of 2,000 jobs per billion dollars in 1984.

Table 2 summarizes the results for five aggregate sectors: agriculture, manufacturing, mining, petroleum, and services. These results indicate that the largest deficits in trade-related jobs were in manufacturing, where the deficit fell from 1.1 million jobs in 1978 to less than 0.5 million jobs in 1980 and then rose to 2.3 million jobs in 1984. The growth in this deficit since 1980 was due more to a growth in the jobs related to imports than to a decline in the jobs related to exports. Among the five sectors, only agriculture maintained a positive balance in trade-related jobs over the entire 7-year period, although 1984 was the first year in which the balance on trade-related jobs became negative for the services sector.

Table 3 presents the detailed industry estimates of labor content for U.S. merchandise trade with the rest of the world for each of the years from 1978 through 1984. (The detailed trade data for these years are given in app. F.) Although the industry results vary from year to year, there is a fairly consistent pattern. On the import side, the sectors with the largest direct labor content are consistently Apparel (IO 18), Motor vehicles and

Table 1.--Summary of aggregate results

Year	Labor content of U.S. trade with the world (1,000 work-years)				
	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978	2,531	2,423	5,220	6,276	-1,055
1979	2,883	2,442	6,047	6,386	-339
1980	3,225	2,470	6,727	6,412	315
1981	3,156	2,509	6,549	6,478	70
1982	2,830	2,564	5,899	6,514	-615
1983	2,670	2,560	5,545	6,620	-1,075
1984	2,606	3,166	5,529	8,090	-2,561

	Labor intensity of U.S. world trade (1,000 work-years per billion dollars)				
	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	
1978	18.4	12.8	38.0	33.0	-
1979	16.3	10.9	34.2	28.4	-
1980	15.0	9.5	31.4	24.8	-
1981	14.0	9.0	29.1	23.1	-
1982	14.0	9.8	29.2	24.9	-
1983	13.2	9.2	27.3	23.8	-
1984	11.8	9.0	25.1	23.1	-

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics

equipment (IO 59), and Miscellaneous manufacturing (IO 64). Other sectors with a large direct labor content are Other agricultural products (IO 2), Footwear and other leather products (IO 34), Primary iron and steel manufacturing (IO 37), Radio, TV, and communication equipment (IO 56), and Electronic components and accessories (IO 57).

On the export side, the sectors with the largest direct labor content are Other agricultural products (IO 2), and Wholesale and retail trade (IO 69). Other sectors with a large direct labor content are Office, computing, and accounting machines (IO 51), Aircraft and parts (IO 60), and Transportation and warehousing (IO 65).

The sectors with the largest net deficit in labor content of trade are consistently Apparel, Motor vehicles and equipment, and Miscellaneous manufacturing. The sectors with the largest net surplus in labor content of trade are consistently Other agricultural products, and Wholesale and retail trade.

The most dramatic declines in labor content of trade occurred between 1980 and 1984. These declines are shown in table 4, both in absolute terms and as shares of total industry employment in 1984. The first column in the table shows the change in net trade-related employment. This is the change in the labor content of exports minus the change in the labor content of imports. For example, the entry for Livestock and livestock products (IO 1) indicates that the balance on trade-related employment for that industry moved toward deficit by 15.93 thousand jobs between 1980 and 1984. The second column shows the change in net trade-related employment as a percent of domestic employment in 1984. For example, the second column entry for Livestock and livestock products indicates that the 15.93 thousand jobs shown in the first column were 1.69 percent of the industry's total employment in 1984. The third column shows the change in actual employment from 1980 to 1984 as a percent of the 1984 employment level. The change in actual employment is influenced by changes in industry productivity and domestic demand as well as by changes in trade, and changes in these non-trade factors are often more important than changes in trade. For example, the entries for Other agricultural products (IO 2) show an increase in actual employment of 6 percent between 1980 and 1984, whereas trade-related employment moved toward deficit by an amount equal to 5 percent of the industry's total employment over this same period.

The largest absolute declines were in Apparel (226,000 jobs), Footwear and other leather products (108,000 jobs), Miscellaneous manufacturing (108,000 jobs), Transportation and warehousing (125,000 jobs), Wholesale and retail trade (406,000 jobs), and Business services (140,000 jobs). The largest declines relative to total employment were in Nonferrous and metal ores mining (21.4 percent), Leather tanning and finishing (66.6 percent), Footwear and other leather products (57.9 percent), Primary nonferrous metals manufacturing (28.0 percent), Construction and mining machinery (23.8 percent), and Miscellaneous manufacturing (25.1 percent). Overall, the decline in trade-related employment from 1980 to 1984 amounted to just slightly more than 3 percent of total U.S. employment.

Table 5 presents these changes for aggregate groups. The decline in trade-related employment was greatest in manufacturing, representing more than 1.8 million jobs, or slightly more than 9 percent of 1984 manufacturing

employment. Mining was hurt relatively more than agriculture. The effect on services employment was minimal relative to the size of this sector. Petroleum showed a slight gain owing to a drop in oil imports.

The entries in the last columns of tables 4 and 5 illustrate the dangers in interpreting trade-related changes in employment as effects on actual employment, and particularly on job displacements or unemployment. For example, in many sectors trade-related employment showed declines during 1980-84 while actual employment increased.

U.S. trade with selected trading partners

Tables 6 through 35 summarize the labor content estimates for U.S. merchandise trade with selected countries and country groups during 1978-84. As with aggregate trade, the most dramatic changes with individual trading partners occurred between 1980 and 1984. For example, the balance on trade-related employment in U.S. trade with the OECD went from a surplus of 201,000 jobs in 1980 to a deficit of 1.4 million jobs in 1984. The balance on trade with the EC went from a surplus of 460,000 jobs in 1980 to a deficit of 226,000 jobs in 1984. The deficit with Japan grew from 366,000 jobs to 943,000 jobs, and the deficit with the NIC's grew from 116,000 jobs to 1.1 million jobs, just to highlight a few of the more dramatic changes. Table 36 summarizes the changes in U.S. trade-related employment for trade with each of the countries and country groups from 1980 to 1984.

Table 37 shows the total labor content per billion dollars of U.S. imports and exports in 1978, 1981, and 1984 for various U.S. trading partners. The labor content per billion dollars of exports varies only slightly across trading partners in each year. For example, in 1984 U.S. exports had an average labor content of 25.1 thousand jobs per billion dollars. Among the countries individually considered in this study, U.S. exports to the Philippines displayed the highest ratio (27.3) and U.S. exports to Argentina displayed the lowest ratio (23.9).

In contrast, the labor content of U.S. imports varied widely across trading partners in any given year. In 1984, the average labor content of all U.S. imports was 23.1 thousand jobs per billion dollars of imports. But among the countries individually considered, this ratio varied from a high of 35.3 for U.S. trade with Hong Kong to a low of 10.1 for Venezuela. U.S. imports from major oil exporters typically have a very low labor intensity, whereas U.S. imports from Asian trading partners in the Pacific Rim (which includes the Asian NIC's and the Philippines) have a very high labor intensity.

Table 38 shows the total labor intensities of U.S. trade in manufactures with selected trading partners. Overall, U.S.-manufactured imports are more labor intensive than U.S.-manufactured exports. The labor intensity of U.S.-manufactured exports is fairly uniform across countries. The labor intensity of U.S.-manufactured imports is more uniform across countries than overall U.S. imports, but again imports from the Asian trading partners in the Pacific Rim tend to be the most labor intensive.

It should be noted that the measures of labor intensity in tables 37 and 38 compare only the quantity of labor in imports and exports, and not the value. For example, a man-hour of labor with a wage of $4.00 is counted the same as a man-hour of labor with a wage of $20.00.

Table 2.--Summary of labor content of U.S. trade with the world, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	439	227	605	424	181
Manufacturing	1,428	1,989	2,517	3,602	-1,085
Mining	33	73	88	162	-73
Petroleum	4	93	39	242	-203
Services	627	41	1,971	1,846	125
Total	2,531	2,423	5,220	6,276	-1,055
1979:					
Agriculture	430	195	597	384	212
Manufacturing	1,673	2,039	2,964	3,690	-725
Mining	51	69	126	162	-36
Petroleum	3	94	45	255	-210
Services	726	44	2,315	1,895	420
Total	2,883	2,442	6,047	6,386	-339
1980:					
Agriculture	488	181	672	373	299
Manufacturing	1,850	2,048	3,264	3,694	-430
Mining	60	64	144	157	-13
Petroleum	3	87	53	249	-196
Services	824	90	2,595	1,939	655
Total	3,225	2,470	6,727	6,412	315
1981:					
Agriculture	480	150	648	333	316
Manufacturing	1,806	2,162	3,166	3,822	-657
Mining	60	54	133	145	-12
Petroleum	4	84	61	257	-196
Services	805	58	2,540	1,921	619
Total	3,156	2,509	6,549	6,478	70
1982:					
Agriculture	443	160	597	337	259
Manufacturing	1,633	2,228	2,891	3,959	-1,068
Mining	59	49	124	135	-12
Petroleum	7	75	64	232	-168
Services	689	53	2,224	1,850	374
Total	2,830	2,564	5,899	6,514	-615

Table 2.--Summary of labor content of U.S. trade with the world, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	500	183	667	395	272
Manufacturing	1,506	2,234	2,626	3,947	-1,321
Mining	37	32	89	107	-19
Petroleum	6	73	63	238	-175
Services	621	39	2,100	1,933	167
Total	2,670	2,560	5,545	6,620	-1,075
1984:					
Agriculture	406	169	543	369	175
Manufacturing	1,535	2,846	2,675	4,964	-2,289
Mining	33	36	84	125	-41
Petroleum	6	72	63	252	-189
Services	627	43	2,165	2,380	-216
Total	2,606	3,166	5,529	8,090	-2,561

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1978				
1	Livestock and livestock products	4	11	69	90	-20
2	Other agricultural products	434	199	521	299	223
3	Forestry and fishery products	2	16	14	36	-21
4	Agricultural, forestry, and fishery services	0	0	55	48	7
5	Iron and ferroalloy ores mining	4	13	11	26	-16
6	Nonferrous metal ores mining	2	23	19	51	-32
7	Coal mining	21	7	42	38	4
8	Crude petroleum and natural gas	1	9	26	139	-114
9	Stone and clay mining and quarrying	3	21	10	35	-24
10	Chemical and fertilizer mineral mining	3	8	7	12	-6
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	53	98	-45
13	Ordnance and accessories	1	2	1	2	-1
14	Food and kindred products	69	87	100	129	-29
15	Tobacco manufactures	4	0	5	0	4
16	Broad and narrow fabrics, yarn and thread mills	20	35	53	137	-84
17	Miscellaneous textile goods and floor coverings	6	7	13	20	-7
18	Apparel	20	228	29	293	-264
19	Miscellaneous fabricated textile products	8	6	17	28	-10
20	Lumber and wood products, except containers	55	78	105	156	-51
21	Wood containers	1	2	4	5	-1
22	Household furniture	6	21	7	25	-17
23	Other furniture and fixtures	3	6	4	8	-4
24	Paper and allied products, except containers	26	48	59	94	-36
25	Paperboard containers and boxes	0	0	18	27	-9
26	Printing and publishing	16	12	35	33	1
27	Chemicals and selected chemical products	54	32	136	133	3
28	Plastics and synthetic materials	21	5	47	52	-5
29	Drugs, cleaning and toilet preparations	16	10	20	16	4
30	Paints and allied products	1	1	5	7	-2
31	Petroleum refining and related industries	3	84	13	103	-89
32	Rubber and miscellaneous plastic products	29	68	95	167	-73
33	Leather tanning and finishing	2	3	3	12	-9
34	Footwear and other leather products	4	101	6	108	-102
35	Glass and glass products	10	11	25	33	-8
36	Stone and clay products	10	34	29	65	-36
37	Primary iron and steel manufacturing	24	105	138	268	-131
38	Primary nonferrous metals manufacturing	27	55	99	156	-57
39	Metal containers	1	1	7	9	-2
40	Heating, plumbing, and structural metal products	18	9	31	26	5
41	Screw machine products and stampings	4	12	43	75	-32
42	Other fabricated metal products	21	49	65	119	-54
43	Engines and turbines	24	2	36	14	22
44	Farm and garden machinery	19	8	23	11	12
45	Construction and mining machinery	52	11	61	22	39
46	Materials handling machinery and equipment	12	9	14	11	3
47	Metalworking machinery and equipment	45	36	67	61	6
48	Special industry machinery and equipment	25	29	31	37	-6

18

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1978				
49	General machinery and equipment	39	23	66	52	14
50	Miscellaneous machinery, except electrical	27	0	64	45	19
51	Office, computing, and accounting machines	81	42	97	51	46
52	Service industries machines	23	1	28	9	19
53	Electric industrial equipment and apparatus	48	17	83	52	30
54	Household appliances	14	21	15	23	-8
55	Electric lighting and wiring equipment	15	13	22	24	-2
56	Radio, TV, and communication equipment	61	142	76	158	-82
57	Electronic components and accessories	64	69	129	148	-19
58	Misc. electrical machinery and supplies	24	22	34	37	-3
59	Motor vehicles and equipment	84	199	120	278	-158
60	Aircraft and parts	127	17	156	23	133
61	Other transportation equipment	12	30	16	34	-19
62	Scientific and controlling instruments	63	40	73	49	23
63	Optical, ophthalmic, and photographic equipment	22	33	26	37	-11
64	Miscellaneous manufacturing	72	199	81	220	-139
65	Transportation and warehousing	100	0	261	232	29
66	Communications, except radio and TV	0	0	25	29	-5
67	Radio and TV broadcasting	0	0	0	0	-0
68	Electric, gas, water, and sanitary services	0	0	50	79	-29
69	Wholesale and retail trade	526	0	940	582	358
70	Finance and insurance	0	0	84	111	-26
71	Real estate and rental	0	0	23	35	-12
72	Hotels, personal and repair services exc. auto	0	6	54	68	-14
73	Business services	0	0	264	332	-68
74	Eating and drinking places	0	0	89	104	-15
75	Automobile repair and services	0	0	21	26	-5
76	Amusements	0	1	10	12	-2
77	Medical, educ. services and nonprofit org.	0	3	16	26	-10
78	Federal Government enterprises	0	31	24	62	-39
79	State and local government enterprises	0	0	2	3	-1
80	Noncomparable imports	0	0	0	0	0
81	Scrap, used, and secondhand goods	0	0	0	0	0
	Total	2,531	2,423	5,220	6,276	-1,055

19

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1979				
1	Livestock and livestock products	3	9	64	82	-18
2	Other agricultural products	425	170	512	263	249
3	Forestry and fishery products	2	17	20	39	-19
4	Agricultural, forestry, and fishery services	0	0	63	49	14
5	Iron and ferroalloy ores mining	6	11	14	24	-10
6	Nonferrous metal ores mining	4	22	30	51	-21
7	Coal mining	34	5	61	38	23
8	Crude petroleum and natural gas	0	11	31	154	-123
9	Stone and clay mining and quarrying	4	21	13	35	-23
10	Chemical and fertilizer mineral mining	4	9	8	13	-5
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	66	107	-41
13	Ordnance and accessories	1	2	1	2	-1
14	Food and kindred products	74	98	109	143	-33
15	Tobacco manufactures	4	0	5	0	5
16	Broad and narrow fabrics, yarn and thread mills	27	30	69	128	-59
17	Miscellaneous textile goods and floor coverings	7	8	15	20	-5
18	Apparel	28	224	40	289	-250
19	Miscellaneous fabricated textile products	9	6	21	30	-9
20	Lumber and wood products, except containers	79	81	144	163	-19
21	Wood containers	1	2	5	5	-0
22	Household furniture	6	24	8	28	-20
23	Other furniture and fixtures	3	5	4	7	-3
24	Paper and allied products, except containers	29	50	67	97	-31
25	Paperboard containers and boxes	0	0	21	29	-7
26	Printing and publishing	18	12	39	34	5
27	Chemicals and selected chemical products	66	31	162	131	31
28	Plastics and synthetic materials	29	4	59	49	10
29	Drugs, cleaning and toilet preparations	18	10	23	17	6
30	Paints and allied products	1	1	6	7	-1
31	Petroleum refining and related industries	3	83	14	101	-87
32	Rubber and miscellaneous plastic products	34	72	114	179	-65
33	Leather tanning and finishing	2	3	4	15	-11
34	Footwear and other leather products	5	102	7	109	-102
35	Glass and glass products	12	13	30	37	-7
36	Stone and clay products	11	31	34	63	-29
37	Primary iron and steel manufacturing	32	97	161	261	-100
38	Primary nonferrous metals manufacturing	61	61	165	171	-6
39	Metal containers	1	0	7	9	-2
40	Heating, plumbing, and structural metal products	19	9	34	26	8
41	Screw machine products and stampings	4	13	49	78	-29
42	Other fabricated metal products	22	50	74	121	-48
43	Engines and turbines	30	3	45	16	28
44	Farm and garden machinery	19	10	24	12	11
45	Construction and mining machinery	58	11	69	21	48
46	Materials handling machinery and equipment	13	10	15	12	2
47	Metalworking machinery and equipment	47	46	74	73	1
48	Special industry machinery and equipment	33	29	41	38	3

20

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1979				
49	General machinery and equipment	41	27	72	56	16
50	Miscellaneous machinery, except electrical	26	0	68	45	23
51	Office, computing, and accounting machines	93	42	112	52	61
52	Service industries machines	23	1	29	9	20
53	Electric industrial equipment and apparatus	52	20	92	57	35
54	Household appliances	15	19	16	20	-4
55	Electric lighting and wiring equipment	13	13	21	24	-3
56	Radio, TV, and communication equipment	62	128	78	144	-65
57	Electronic components and accessories	76	83	146	159	-12
58	Misc. electrical machinery and supplies	28	26	39	41	-2
59	Motor vehicles and equipment	95	212	137	296	-160
60	Aircraft and parts	153	21	187	28	159
61	Other transportation equipment	13	32	16	36	-20
62	Scientific and controlling instruments	77	44	88	54	35
63	Optical, ophthalmic, and photographic equipment	23	31	27	35	-8
64	Miscellaneous manufacturing	80	192	91	213	-122
65	Transportation and warehousing	114	0	301	230	70
66	Communications, except radio and TV	0	0	28	29	-1
67	Radio and TV broadcasting	0	0	0	0	-0
68	Electric, gas, water, and sanitary services	0	0	59	78	-19
69	Wholesale and retail trade	611	0	1,101	596	505
70	Finance and insurance	0	0	101	115	-14
71	Real estate and rental	0	0	27	37	-10
72	Hotels, personal and repair services exc. auto	0	7	66	72	-7
73	Business services	0	0	308	337	-29
74	Eating and drinking places	0	0	109	112	-2
75	Automobile repair and services	0	0	25	27	-1
76	Amusements	0	1	11	12	-0
77	Medical, educ. services and nonprofit org.	0	4	19	26	-8
78	Federal Government enterprises	0	32	27	63	-36
79	State and local government enterprises	0	0	3	4	-1
	Total	2,883	2,442	6,047	6,386	-339

21

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1980				
1	Livestock and livestock products	3	9	63	77	-13
2	Other agricultural products	483	157	587	262	325
3	Forestry and fishery products	2	15	22	35	-13
4	Agricultural, forestry, and fishery services	0	0	71	50	21
5	Iron and ferroalloy ores mining	6	9	15	21	-7
6	Nonferrous metal ores mining	6	23	38	57	-19
7	Coal mining	39	2	67	29	38
8	Crude petroleum and natural gas	1	11	38	156	-119
9	Stone and clay mining and quarrying	4	21	15	36	-21
10	Chemical and fertilizer mineral mining	5	10	9	14	-5
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	75	105	-30
13	Ordnance and accessories	1	2	2	2	-1
14	Food and kindred products	76	94	112	137	-25
15	Tobacco manufactures	4	0	5	1	5
16	Broad and narrow fabrics, yarn and thread mills	26	29	69	125	-56
17	Miscellaneous textile goods and floor coverings	10	8	18	20	-2
18	Apparel	33	226	46	291	-245
19	Miscellaneous fabricated textile products	8	8	19	30	-11
20	Lumber and wood products, except containers	80	62	146	131	15
21	Wood containers	1	2	5	4	0
22	Household furniture	7	23	9	26	-17
23	Other furniture and fixtures	4	6	5	8	-3
24	Paper and allied products, except containers	37	48	78	93	-15
25	Paperboard containers and boxes	0	0	23	28	-5
26	Printing and publishing	19	13	42	35	7
27	Chemicals and selected chemical products	70	32	180	135	45
28	Plastics and synthetic materials	34	4	69	51	17
29	Drugs, cleaning and toilet preparations	19	10	24	16	8
30	Paints and allied products	1	1	6	6	-0
31	Petroleum refining and related industries	3	76	16	93	-77
32	Rubber and miscellaneous plastic products	38	68	126	174	-48
33	Leather tanning and finishing	2	2	4	10	-7
34	Footwear and other leather products	6	83	8	88	-80
35	Glass and glass products	13	12	31	35	-4
36	Stone and clay products	12	30	38	62	-24
37	Primary iron and steel manufacturing	39	95	183	261	-78
38	Primary nonferrous metals manufacturing	71	74	186	191	-4
39	Metal containers	1	0	8	9	-1
40	Heating, plumbing, and structural metal products	23	7	40	23	17
41	Screw machine products and stampings	4	14	52	78	-26
42	Other fabricated metal products	23	49	80	118	-38
43	Engines and turbines	34	2	51	16	35
44	Farm and garden machinery	22	22	27	25	2
45	Construction and mining machinery	72	10	86	20	66
46	Materials handling machinery and equipment	15	10	18	13	5
47	Metalworking machinery and equipment	55	49	85	77	8
48	Special industry machinery and equipment	39	31	47	40	8

22

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1980				
49	General machinery and equipment	45	28	80	58	22
50	Miscellaneous machinery, except electrical	31	0	78	45	32
51	Office, computing, and accounting machines	114	44	136	54	82
52	Service industries machines	26	1	32	9	23
53	Electric industrial equipment and apparatus	58	22	103	59	44
54	Household appliances	15	18	16	19	-3
55	Electric lighting and wiring equipment	13	14	22	25	-3
56	Radio, TV, and communication equipment	65	124	82	140	-58
57	Electronic components and accessories	85	94	163	171	-8
58	Misc. electrical machinery and supplies	30	27	42	42	-0
59	Motor vehicles and equipment	91	216	133	303	-170
60	Aircraft and parts	174	39	213	50	163
61	Other transportation equipment	18	33	22	38	-16
62	Scientific and controlling instruments	84	48	97	59	38
63	Optical, ophthalmic, and photographic equipment	23	28	28	32	-5
64	Miscellaneous manufacturing	80	188	91	209	-118
65	Transportation and warehousing	125	0	335	233	102
66	Communications, except radio and TV	0	0	29	27	2
67	Radio and TV broadcasting	0	0	0	0	0
68	Electric, gas, water, and sanitary services	0	0	66	78	-11
69	Wholesale and retail trade	699	1	1,248	605	643
70	Finance and insurance	0	0	112	114	-2
71	Real estate and rental	0	0	28	33	-5
72	Hotels, personal and repair services exc. auto	0	7	79	78	1
73	Business services	0	0	335	328	7
74	Eating and drinking places	0	0	124	114	11
75	Automobile repair and services	0	0	28	27	1
76	Amusements	0	1	12	12	0
77	Medical, educ. services and nonprofit org.	0	16	20	38	-18
78	Federal Government enterprises	0	65	29	94	-66
79	State and local government enterprises	0	1	3	4	-1
	Total	3,225	2,470	6,727	6,412	315

23

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1981				
1	Livestock and livestock products	4	8	63	76	-13
2	Other agricultural products	474	128	568	225	343
3	Forestry and fishery products	2	14	17	32	-14
4	Agricultural, forestry, and fishery services	0	0	66	44	22
5	Iron and ferroalloy ores mining	4	11	13	27	-13
6	Nonferrous metal ores mining	5	20	29	51	-21
7	Coal mining	42	1	68	28	40
8	Crude petroleum and natural gas	1	10	44	164	-120
9	Stone and clay mining and quarrying	5	11	15	26	-11
10	Chemical and fertilizer mineral mining	4	10	8	14	-6
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	75	104	-29
13	Ordnance and accessories	1	2	2	3	-1
14	Food and kindred products	73	94	108	137	-30
15	Tobacco manufactures	5	1	6	1	5
16	Broad and narrow fabrics, yarn and thread mills	21	34	59	136	-76
17	Miscellaneous textile goods and floor coverings	9	8	17	20	-3
18	Apparel	30	241	43	310	-267
19	Miscellaneous fabricated textile products	7	9	17	30	-13
20	Lumber and wood products, except containers	63	61	121	130	-9
21	Wood containers	1	2	5	4	0
22	Household furniture	8	25	11	29	-18
23	Other furniture and fixtures	5	6	6	8	-2
24	Paper and allied products, except containers	34	46	74	92	-18
25	Paperboard containers and boxes	0	0	23	29	-6
26	Printing and publishing	20	12	44	34	9
27	Chemicals and selected chemical products	64	32	171	134	36
28	Plastics and synthetic materials	29	4	60	50	10
29	Drugs, cleaning and toilet preparations	20	10	25	17	8
30	Paints and allied products	1	0	6	6	0
31	Petroleum refining and related industries	4	74	18	93	-75
32	Rubber and miscellaneous plastic products	38	59	120	162	-42
33	Leather tanning and finishing	3	4	4	13	-10
34	Footwear and other leather products	6	98	7	104	-97
35	Glass and glass products	12	11	30	35	-5
36	Stone and clay products	13	30	39	63	-25
37	Primary iron and steel manufacturing	27	119	163	286	-122
38	Primary nonferrous metals manufacturing	47	64	148	179	-30
39	Metal containers	1	0	8	9	-1
40	Heating, plumbing, and structural metal products	25	8	43	25	18
41	Screw machine products and stampings	4	12	51	75	-24
42	Other fabricated metal products	23	48	79	118	-39
43	Engines and turbines	35	2	51	14	36
44	Farm and garden machinery	22	17	27	20	7
45	Construction and mining machinery	76	13	90	24	67
46	Materials handling machinery and equipment	15	11	18	14	4
47	Metalworking machinery and equipment	58	49	88	78	10
48	Special industry machinery and equipment	38	31	47	41	6

24

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1981				
49	General machinery and equipment	45	33	80	63	17
50	Miscellaneous machinery, except electrical	31	0	75	43	32
51	Office, computing, and accounting machines	119	50	143	61	82
52	Service industries machines	26	1	32	8	23
53	Electric industrial equipment and apparatus	60	23	106	61	45
54	Household appliances	15	20	17	22	-5
55	Electric lighting and wiring equipment	15	15	24	26	-2
56	Radio, TV, and communication equipment	67	149	84	166	-81
57	Electronic components and accessories	83	97	161	180	-19
58	Misc. electrical machinery and supplies	31	27	42	41	2
59	Motor vehicles and equipment	91	210	134	296	-162
60	Aircraft and parts	177	49	217	62	155
61	Other transportation equipment	22	32	27	36	-10
62	Scientific and controlling instruments	93	53	106	64	41
63	Optical, ophthalmic, and photographic equipment	22	30	27	35	-8
64	Miscellaneous manufacturing	75	208	86	230	-145
65	Transportation and warehousing	121	0	328	237	90
66	Communications, except radio and TV	0	0	28	27	1
67	Radio and TV broadcasting	0	0	0	0	0
68	Electric, gas, water, and sanitary services	0	0	65	80	-15
69	Wholesale and retail trade	684	0	1,215	607	607
70	Finance and insurance	0	0	118	121	-3
71	Real estate and rental	0	0	27	30	-3
72	Hotels, personal and repair services exc. auto	0	7	78	81	-3
73	Business services	0	0	329	331	-2
74	Eating and drinking places	0	0	121	114	7
75	Automobile repair and services	0	0	30	29	1
76	Amusements	0	1	12	12	1
77	Medical, educ. services and nonprofit org.	0	11	20	33	-13
78	Federal Government enterprises	0	39	27	69	-42
79	State and local government enterprises	0	0	3	3	-1
	Total	3,156	2,509	6,549	6,478	70

25

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1982				
1	Livestock and livestock products	4	10	56	73	-17
2	Other agricultural products	437	140	523	236	287
3	Forestry and fishery products	2	11	17	28	-11
4	Agricultural, forestry, and fishery services	0	0	66	47	19
5	Iron and ferroalloy ores mining	3	7	12	23	-11
6	Nonferrous metal ores mining	5	24	24	51	-27
7	Coal mining	43	1	66	26	41
8	Crude petroleum and natural gas	1	12	45	152	-107
9	Stone and clay mining and quarrying	5	9	14	23	-9
10	Chemical and fertilizer mineral mining	3	9	7	12	-5
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	67	97	-30
13	Ordnance and accessories	1	2	2	3	-1
14	Food and kindred products	61	83	91	123	-32
15	Tobacco manufactures	5	1	6	1	5
16	Broad and narrow fabrics, yarn and thread mills	15	30	46	133	-88
17	Miscellaneous textile goods and floor coverings	7	7	13	18	-5
18	Apparel	23	258	33	332	-299
19	Miscellaneous fabricated textile products	6	8	14	31	-16
20	Lumber and wood products, except containers	59	51	111	112	-1
21	Wood containers	1	1	4	4	-0
22	Household furniture	7	25	9	29	-20
23	Other furniture and fixtures	4	6	5	8	-3
24	Paper and allied products, except containers	28	40	62	83	-21
25	Paperboard containers and boxes	0	0	20	28	-8
26	Printing and publishing	20	12	41	34	7
27	Chemicals and selected chemical products	67	35	173	145	29
28	Plastics and synthetic materials	27	5	55	52	3
29	Drugs, cleaning and toilet preparations	18	9	23	16	7
30	Paints and allied products	1	0	5	6	-1
31	Petroleum refining and related industries	6	62	18	80	-61
32	Rubber and miscellaneous plastic products	32	49	107	154	-47
33	Leather tanning and finishing	3	3	4	17	-13
34	Footwear and other leather products	5	131	7	139	-132
35	Glass and glass products	10	11	26	34	-8
36	Stone and clay products	11	27	34	59	-25
37	Primary iron and steel manufacturing	27	125	174	325	-151
38	Primary nonferrous metals manufacturing	36	65	128	187	-60
39	Metal containers	1	0	7	8	-1
40	Heating, plumbing, and structural metal products	22	10	39	26	13
41	Screw machine products and stampings	4	12	47	81	-34
42	Other fabricated metal products	21	49	74	123	-49
43	Engines and turbines	36	1	52	15	38
44	Farm and garden machinery	15	13	19	16	3
45	Construction and mining machinery	70	10	84	19	64
46	Materials handling machinery and equipment	14	12	16	15	1
47	Metalworking machinery and equipment	43	40	68	67	2
48	Special industry machinery and equipment	37	32	45	42	3

26

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1982				
49	General machinery and equipment	45	34	77	65	12
50	Miscellaneous machinery, except electrical	31	0	73	47	26
51	Office, computing, and accounting machines	136	66	163	80	82
52	Service industries machines	24	1	29	10	19
53	Electric industrial equipment and apparatus	61	25	107	67	40
54	Household appliances	12	23	13	24	-11
55	Electric lighting and wiring equipment	13	14	20	25	-4
56	Radio, TV, and communication equipment	64	147	78	163	-85
57	Electronic components and accessories	83	103	158	190	-31
58	Misc. electrical machinery and supplies	28	29	38	43	-5
59	Motor vehicles and equipment	71	215	105	302	-197
60	Aircraft and parts	126	43	155	55	100
61	Other transportation equipment	23	26	27	30	-4
62	Scientific and controlling instruments	92	46	103	56	46
63	Optical, ophthalmic, and photographic equipment	22	32	26	37	-11
64	Miscellaneous manufacturing	66	256	76	281	-206
65	Transportation and warehousing	107	0	294	230	63
66	Communications, except radio and TV	0	0	24	26	-2
67	Radio and TV broadcasting	0	0	0	0	-0
68	Electric, gas, water, and sanitary services	0	0	58	77	-18
69	Wholesale and retail trade	582	0	1,046	587	459
70	Finance and insurance	0	0	105	117	-12
71	Real estate and rental	0	0	23	27	-4
72	Hotels, personal and repair services exc. auto	0	8	72	84	-12
73	Business services	0	0	284	314	-30
74	Eating and drinking places	0	0	103	108	-4
75	Automobile repair and services	0	0	27	29	-2
76	Amusements	0	1	10	11	-1
77	Medical, educ. services and nonprofit org.	0	13	18	35	-18
78	Federal Government enterprises	0	30	23	58	-35
79	State and local government enterprises	0	1	2	4	-1
	Total	2,830	2,564	5,899	6,514	-615

27

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1983				
1	Livestock and livestock products	6	12	63	88	-24
2	Other agricultural products	493	162	588	280	308
3	Forestry and fishery products	1	9	15	27	-12
4	Agricultural, forestry, and fishery services	0	0	64	49	15
5	Iron and ferroalloy ores mining	2	4	8	14	-7
6	Nonferrous metal ores mining	2	12	18	38	-20
7	Coal mining	26	1	44	22	21
8	Crude petroleum and natural gas	1	13	46	161	-115
9	Stone and clay mining and quarrying	4	9	13	23	-10
10	Chemical and fertilizer mineral mining	3	6	6	10	-4
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	59	91	-32
13	Ordnance and accessories	19	1	21	2	19
14	Food and kindred products	57	84	86	125	-39
15	Tobacco manufactures	4	2	5	2	3
16	Broad and narrow fabrics, yarn and thread mills	11	30	37	133	-97
17	Miscellaneous textile goods and floor coverings	6	6	11	17	-6
18	Apparel	20	276	29	354	-326
19	Miscellaneous fabricated textile products	5	10	14	34	-21
20	Lumber and wood products, except containers	53	57	97	118	-21
21	Wood containers	1	2	4	5	-1
22	Household furniture	5	28	7	32	-25
23	Other furniture and fixtures	4	8	5	10	-5
24	Paper and allied products, except containers	24	37	55	80	-25
25	Paperboard containers and boxes	0	1	18	29	-11
26	Printing and publishing	18	13	38	36	2
27	Chemicals and selected chemical products	61	39	155	147	8
28	Plastics and synthetic materials	21	6	43	49	-6
29	Drugs, cleaning and toilet preparations	18	11	23	17	5
30	Paints and allied products	1	0	5	6	-1
31	Petroleum refining and related industries	5	59	17	77	-60
32	Rubber and miscellaneous plastic products	29	51	97	159	-62
33	Leather tanning and finishing	3	3	4	18	-15
34	Footwear and other leather products	5	143	6	151	-145
35	Glass and glass products	9	13	25	39	-14
36	Stone and clay products	10	28	30	59	-29
37	Primary iron and steel manufacturing	14	63	108	207	-98
38	Primary nonferrous metals manufacturing	36	75	124	206	-82
39	Metal containers	1	0	6	8	-2
40	Heating, plumbing, and structural metal products	17	9	33	26	7
41	Screw machine products and stampings	3	12	43	84	-41
42	Other fabricated metal products	18	45	65	118	-53
43	Engines and turbines	33	1	48	16	31
44	Farm and garden machinery	10	14	14	17	-4
45	Construction and mining machinery	37	7	46	14	32
46	Materials handling machinery and equipment	10	13	12	16	-4
47	Metalworking machinery and equipment	32	31	55	59	-4
48	Special industry machinery and equipment	24	31	31	40	-9

28

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1983				
49	General machinery and equipment	34	29	58	56	2
50	Miscellaneous machinery, except electrical	27	0	64	46	18
51	Office, computing, and accounting machines	154	99	184	119	64
52	Service industries machines	19	2	24	11	13
53	Electric industrial equipment and apparatus	50	28	93	72	20
54	Household appliances	9	20	10	22	-12
55	Electric lighting and wiring equipment	11	15	18	27	-8
56	Radio, TV, and communication equipment	62	161	77	178	-101
57	Electronic components and accessories	87	109	165	205	-40
58	Misc. electrical machinery and supplies	27	32	36	47	-11
59	Motor vehicles and equipment	66	221	97	308	-211
60	Aircraft and parts	144	32	177	42	136
61	Other transportation equipment	28	24	32	28	4
62	Scientific and controlling instruments	83	46	94	57	37
63	Optical, ophthalmic, and photographic equipment	22	37	26	42	-16
64	Miscellaneous manufacturing	63	228	73	253	-180
65	Transportation and warehousing	94	0	274	244	30
66	Communications, except radio and TV	0	0	22	26	-4
67	Radio and TV broadcasting	0	0	0	0	-0
68	Electric, gas, water, and sanitary services	0	0	54	78	-23
69	Wholesale and retail trade	527	1	964	614	350
70	Finance and insurance	0	0	99	121	-21
71	Real estate and rental	0	0	23	29	-6
72	Hotels, personal and repair services exc. auto	0	9	77	97	-20
73	Business services	0	0	283	343	-61
74	Eating and drinking places	0	0	101	114	-13
75	Automobile repair and services	0	0	26	31	-5
76	Amusements	0	1	10	11	-1
77	Medical, educ. services and nonprofit org.	0	3	18	27	-10
78	Federal Government enterprises	0	24	23	54	-31
79	State and local government enterprises	0	1	2	4	-2
	Total	2,670	2,560	5,545	6,620	-1,075

29

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1984				
1	Livestock and livestock products	4	11	51	80	-29
2	Other agricultural products	400	148	478	258	219
3	Forestry and fishery products	1	10	15	30	-16
4	Agricultural, forestry, and fishery services	0	0	63	55	8
5	Iron and ferroalloy ores mining	2	4	7	16	-9
6	Nonferrous metal ores mining	2	16	19	48	-28
7	Coal mining	24	1	41	27	14
8	Crude petroleum and natural gas	1	11	46	171	-125
9	Stone and clay mining and quarrying	4	9	12	24	-12
10	Chemical and fertilizer mineral mining	1	6	4	10	-6
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	57	102	-45
13	Ordnance and accessories	17	2	18	3	15
14	Food and kindred products	54	87	82	132	-51
15	Tobacco manufactures	3	0	4	0	4
16	Broad and narrow fabrics, yarn and thread mills	10	38	36	174	-138
17	Miscellaneous textile goods and floor coverings	7	10	13	26	-13
18	Apparel	19	389	29	499	-470
19	Miscellaneous fabricated textile products	6	15	16	48	-32
20	Lumber and wood products, except containers	50	62	95	134	-39
21	Wood containers	1	2	4	6	-2
22	Household furniture	5	39	7	44	-37
23	Other furniture and fixtures	4	8	5	11	-6
24	Paper and allied products, except containers	24	45	56	97	-41
25	Paperboard containers and boxes	0	1	19	35	-16
26	Printing and publishing	17	16	37	43	-6
27	Chemicals and selected chemical products	74	50	170	178	-8
28	Plastics and synthetic materials	20	7	42	60	-17
29	Drugs, cleaning and toilet preparations	18	14	22	21	1
30	Paints and allied products	1	1	5	8	-3
31	Petroleum refining and related industries	5	61	16	81	-65
32	Rubber and miscellaneous plastic products	31	63	105	202	-96
33	Leather tanning and finishing	3	4	4	23	-19
34	Footwear and other leather products	5	185	7	196	-189
35	Glass and glass products	10	17	26	48	-22
36	Stone and clay products	9	35	30	72	-42
37	Primary iron and steel manufacturing	13	85	106	259	-153
38	Primary nonferrous metals manufacturing	35	79	119	224	-105
39	Metal containers	1	1	6	9	-3
40	Heating, plumbing, and structural metal products	15	9	32	30	1
41	Screw machine products and stampings	3	12	45	99	-54
42	Other fabricated metal products	16	56	63	143	-79
43	Engines and turbines	34	2	48	19	29
44	Farm and garden machinery	9	16	12	19	-7
45	Construction and mining machinery	32	12	40	20	20
46	Materials handling machinery and equipment	8	17	10	20	-10
47	Metalworking machinery and equipment	30	38	53	72	-19
48	Special industry machinery and equipment	20	34	27	45	-19

30

Table 3.--Labor content of U.S. trade with the world, by input-output sectors, 1978-1984--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1984				
49	General machinery and equipment	32	38	55	71	-16
50	Miscellaneous machinery, except electrical	33	0	70	56	14
51	Office, computing, and accounting machines	169	138	201	166	35
52	Service industries machines	17	2	22	14	9
53	Electric industrial equipment and apparatus	51	38	96	97	-1
54	Household appliances	9	28	10	30	-19
55	Electric lighting and wiring equipment	10	19	17	33	-16
56	Radio, TV, and communication equipment	61	207	74	228	-154
57	Electronic components and accessories	95	147	180	276	-97
58	Misc. electrical machinery and supplies	31	40	41	58	-18
59	Motor vehicles and equipment	75	268	108	374	-265
60	Aircraft and parts	121	40	150	51	98
61	Other transportation equipment	23	25	26	29	-3
62	Scientific and controlling instruments	81	56	91	69	22
63	Optical, ophthalmic, and photographic equipment	20	44	25	50	-25
64	Miscellaneous manufacturing	102	308	114	341	-226
65	Transportation and warehousing	91	0	283	306	-23
66	Communications, except radio and TV	0	0	23	32	-10
67	Radio and TV broadcasting	0	0	0	0	-0
68	Electric, gas, water, and sanitary services	0	0	57	95	-38
69	Wholesale and retail trade	536	0	980	743	237
70	Finance and insurance	0	0	103	149	-45
71	Real estate and rental	0	0	24	35	-11
72	Hotels, personal and repair services exc. auto	0	10	84	126	-42
73	Business services	0	0	298	431	-133
74	Eating and drinking places	0	0	107	145	-38
75	Automobile repair and services	0	0	28	39	-11
76	Amusements	0	1	10	14	-4
77	Medical, educ. services and nonprofit org.	0	4	19	35	-16
78	Federal Government enterprises	0	28	25	67	-43
79	State and local government enterprises	0	0	3	4	-2
	Total	2,606	3,166	5,529	8,090	-2,561

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

31

Table 4.--Change in net labor content of U.S.-world trade between 1980 and 1984 and change in net labor content as a share of total 1984 employment, by input-output categories

Input-output sector	Industry description	Change in net labor content 1980-1984	Change in net labor content as a share of total 1984 employment	Actual 1980-1984 employment change as a share of total 1984 employment
		1,000 work-years	Percent	Percent
1	Livestock and livestock products	-15.93	-1.69	-2.65
2	Other agricultural products	-105.56	-5.24	6.11
3	Forestry and fishery products	-2.98	-3.72	-10.00
4	Agricultural, forestry, and fishery services	-13.71	-2.40	14.51
5	Iron and ferroalloy ores mining	-1.99	-13.27	-80.00
6	Nonferrous metal ores mining	-9.41	-21.38	-65.91
7	Coal mining	-24.28	-11.96	-21.67
8	Crude petroleum and natural gas	-6.09	-2.18	12.14
9	Stone and clay mining and quarrying	9.07	9.65	-9.57
10	Chemical and fertilizer mineral mining	-0.83	-3.97	-28.57
11	New construction	0.00	0.00	5.21
12	Maintenance and repair construction	-14.99	-1.17	-14.03
13	Ordnance and accessories	15.81	7.71	20.98
14	Food and kindred products	-25.70	-1.55	-4.64
15	Tobacco manufactures	-0.80	-1.19	-2.99
16	Broad and narrow fabrics, yarn and thread mills	-82.10	-18.75	-16.44
17	Miscellaneous textile goods and floor coverings	-10.74	-9.18	-4.27
18	Apparel	-225.83	-18.18	-6.44
19	Miscellaneous fabricated textile products	-21.04	-11.08	2.11
20	Lumber and wood products, except containers	-54.74	-7.97	-6.11
21	Wood containers	-2.00	-10.54	10.53
22	Household furniture	-19.71	-6.84	-4.51
23	Other furniture and fixtures	-3.00	-1.40	17.67
24	Paper and allied products, except containers	-25.93	-5.32	-0.21
25	Paperboard containers and boxes	-10.93	-5.58	-4.59
26	Printing and publishing	-13.72	-0.94	8.06
27	Chemicals and selected chemical products	-53.07	-11.17	-5.68
28	Plastics and synthetic materials	-34.30	-19.60	-17.14
29	Drugs, cleaning and toilet preparations	-6.97	-2.00	2.87
30	Paints and allied products	-2.50	-4.03	-4.84
31	Petroleum refining and related industries	12.83	6.83	-5.32
32	Rubber and miscellaneous plastic products	-48.22	-6.01	8.48
33	Leather tanning and finishing	-11.98	-66.58	-5.56
34	Footwear and other leather products	-108.27	-57.90	-14.97
35	Glass and glass products	-17.66	-10.39	-12.35
36	Stone and clay products	-18.30	-4.01	-6.36
37	Primary iron and steel manufacturing	-74.27	-13.38	-42.70
38	Primary nonferrous metals manufacturing	-100.73	-27.98	-11.94
39	Metal containers	-2.21	-3.62	-22.95
40	Heating, plumbing, and structural metal products	-15.35	-2.90	-11.70
41	Screw machine products and stampings	-28.06	-8.91	-2.22
42	Other fabricated metal products	-41.05	-8.45	-8.02
43	Engines and turbines	-6.27	-5.50	-18.42

32

Table 4.--Change in net labor content of U.S.-world trade between 1980 and 1984 and change in net labor content as a share of total 1984 employment, by input-output categories--Continued

Input-output sector	Industry description	Change in net labor content 1980-1984	Change in net labor content as a share of total 1984 employment	Actual 1980-1984 employment change as a share of total 1984 employment
		1,000 work-years	Percent	Percent
44	Farm and garden machinery	-8.28	-7.14	-46.55
45	Construction and mining machinery	-46.18	-23.81	-45.88
46	Materials handling machinery and equipment	-15.41	-18.56	-30.12
47	Metalworking machinery and equipment	-27.05	-8.53	-20.19
48	Special industry machinery and equipment	-26.09	-15.53	-23.21
49	General machinery and equipment	-38.60	-13.94	-16.97
50	Miscellaneous machinery, except electrical	-18.52	-6.22	-8.05
51	Office, computing, and accounting machines	-47.02	-9.27	14.40
52	Service industries machines	-13.94	-7.70	3.87
53	Electric industrial equipment and apparatus	-44.69	-10.30	-6.91
54	Household appliances	-16.48	-10.77	-6.54
55	Electric lighting and wiring equipment	-12.64	-6.20	-2.45
56	Radio, TV, and communication equipment	-95.97	-13.57	7.92
57	Electronic components and accessories	-89.08	-13.00	19.12
58	Misc. electrical machinery and supplies	-17.81	-10.67	4.79
59	Motor vehicles and equipment	-95.25	-10.95	9.08
60	Aircraft and parts	-64.94	-10.16	-5.79
61	Other transportation equipment	12.70	3.65	-10.92
62	Scientific and controlling instruments	-15.79	-3.79	4.08
63	Optical, ophthalmic, and photographic equipment	-20.48	-10.19	-6.47
64	Miscellaneous manufacturing	-108.00	-25.06	-3.71
65	Transportation and warehousing	-124.72	-3.89	-1.28
66	Communications, except radio and TV	-11.46	-0.99	0.26
67	Radio and TV broadcasting	-0.12	-0.05	13.62
68	Electric, gas, water, and sanitary services	-26.62	-2.86	5.98
69	Wholesale and retail trade	-406.36	-2.21	4.80
70	Finance and insurance	-43.86	-0.91	10.49
71	Real estate and rental	-5.94	-0.40	5.66
72	Hotels, personal and repair services exc. auto	-43.45	-1.11	12.37
73	Business services	-139.58	-2.01	20.69
74	Eating and drinking places	-48.93	-0.88	10.80
75	Automobile repair and services	-12.77	-1.26	16.91
76	Amusements	-4.08	-0.33	9.36
77	Medical, educ. services and nonprofit org.	2.74	0.03	9.38
78	Federal Government enterprises	23.23	2.77	1.57
79	State and local government enterprises	-0.79	-0.11	-2.82
	Total	-2875.76	-3.15	5.23

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

33

Table 5.--Changes in net labor content of U.S.-world trade between 1980 and 1984 and change in net labor content as a share of total 1984 employment, by summary categories

Industry	Change in net labor content 1980-1984	Change in net labor content as a share of total 1984 employment	Actual 1980-1984 employment change as a share of total 1984 employment
	1,000 work-years	Percent	Percent
Agriculture------	-124.47	-4.10	2.96
Manufacturing----	-1859.16	-9.40	-3.55
Mining----------	-27.44	-7.28	-26.53
Petroleum--------	6.74	1.44	5.13
Services---------	-871.43	-1.29	8.08
Total--------	-2875.76	-3.15	5.23

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 6.--Labor content of U.S. trade with selected trading partners, 1984

(In thousands of work-years)

Trading partner	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
World	2,606	3,166	5,529	8,090	-2,561
OECD	1,506	1,730	3,275	4,666	-1,390
EEC	554	562	1,198	1,424	-226
NIC	434	918	897	2,021	-1,124
Caribbean Basin	74	74	162	190	-28
South America	168	185	362	534	-172
LDC	397	383	818	941	-123
NME Countries	108	70	199	163	36
OPEC	160	66	339	299	40
Pacific Rim	361	825	747	1,796	-1,049
Canada	495	480	1,130	1,413	-283
Mexico	144	127	301	343	-41
Brazil	31	87	65	208	-144
Venezuela	37	13	82	69	14
Argentina	10	7	21	23	-1
Japan	298	581	617	1,560	-943
Hong Kong	38	166	82	341	-259
Korea	75	175	151	359	-208
Taiwan	61	272	122	554	-432
China (PRC)	40	51	84	111	-26
Singapore	43	54	92	127	-35
Philippines	23	39	47	88	-41
United Kingdom	146	113	318	302	16
Italy	53	112	110	247	-137
France	72	80	154	206	-51
West Germany	108	160	236	425	-189
Netherlands	87	34	192	91	101
Australia	56	19	120	65	54
Israel	26	24	51	50	1
South Africa	28	31	58	64	-6

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 7.--Summary of labor content of U.S. trade with the Organization for Economic Cooperation and Development (OECD), 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	236	28	327	118	209
Manufacturing	833	1,279	1,487	2,330	-843
Mining	28	34	62	92	-30
Petroleum	3	17	24	48	-25
Services	364	11	1,159	1,017	142
Total	1,463	1,369	3,059	3,606	-547
1979:					
Agriculture	210	24	300	105	196
Manufacturing	993	1,286	1,779	2,341	-562
Mining	43	33	92	91	1
Petroleum	2	17	27	51	-24
Services	421	18	1,366	1,023	343
Total	1,669	1,377	3,564	3,611	-46
1980:					
Agriculture	238	24	334	104	230
Manufacturing	1,058	1,279	1,885	2,329	-444
Mining	50	27	104	86	18
Petroleum	2	17	31	53	-22
Services	464	45	1,483	1,064	419
Total	1,812	1,392	3,837	3,636	201
1981:					
Agriculture	232	23	319	101	218
Manufacturing	1,012	1,333	1,791	2,390	-599
Mining	51	24	96	84	13
Petroleum	3	19	35	66	-31
Services	446	29	1,428	1,089	339
Total	1,743	1,429	3,670	3,729	-59
1982:					
Agriculture	225	26	308	109	199
Manufacturing	912	1,353	1,636	2,465	-829
Mining	50	21	90	78	12
Petroleum	4	22	36	72	-36
Services	386	28	1,264	1,078	186
Total	1,577	1,450	3,334	3,803	-469

Table 7.--Summary of labor content of U.S. trade with the Organization for Economic Cooperation and Development (OECD), 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	244	33	338	133	205
Manufacturing	894	1,301	1,581	2,379	-798
Mining	31	13	64	61	3
Petroleum	4	22	36	77	-41
Services	367	21	1,252	1,122	131
Total	1,539	1,391	3,272	3,772	-500
1984:					
Agriculture	177	32	249	124	124
Manufacturing	931	1,633	1,642	2,966	-1,325
Mining	26	16	59	73	-14
Petroleum	3	24	35	89	-53
Services	370	25	1,290	1,413	-123
Total	1,506	1,730	3,275	4,666	-1,390

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 8.--Summary of labor content of U.S. trade with the European Economic Community (EEC), 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	113	14	153	51	102
Manufacturing	330	443	568	759	-191
Mining	9	11	22	31	-8
Petroleum	1	3	9	14	-4
Services	139	5	453	332	121
Total	593	477	1,205	1,186	19
1979:					
Agriculture	94	11	134	43	90
Manufacturing	406	457	705	786	-81
Mining	17	8	37	27	10
Petroleum	1	4	11	16	-5
Services	164	6	547	338	209
Total	681	486	1,434	1,211	223
1980:					
Agriculture	102	11	148	44	104
Manufacturing	463	443	806	762	44
Mining	21	6	44	24	21
Petroleum	1	3	13	15	-2
Services	190	12	631	338	293
Total	777	474	1,641	1,181	460
1981:					
Agriculture	95	9	133	41	92
Manufacturing	410	431	714	724	-10
Mining	21	3	40	21	19
Petroleum	1	6	14	25	-11
Services	172	8	571	335	236
Total	699	457	1,472	1,147	325
1982:					
Agriculture	92	10	129	45	84
Manufacturing	374	450	657	760	-103
Mining	20	2	36	20	16
Petroleum	2	7	15	29	-14
Services	152	4	509	334	176
Total	640	474	1,346	1,188	158

Table 8.--Summary of labor content of U.S. trade with the European Economic Community (EEC), 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	83	13	124	55	69
Manufacturing	350	415	601	703	-102
Mining	12	2	23	17	7
Petroleum	1	7	13	30	-17
Services	133	5	469	338	130
Total	579	441	1,230	1,143	88
1984:					
Agriculture	60	14	88	54	35
Manufacturing	353	532	605	892	-288
Mining	10	2	22	20	2
Petroleum	1	7	13	34	-21
Services	129	6	471	425	46
Total	554	562	1,198	1,424	-226

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 9.--Summary of labor content of U.S. trade with the Newly Industrializing Countries (NICs), 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	77	57	96	98	-2
Manufacturing	214	505	365	803	-438
Mining	3	4	12	13	-1
Petroleum	1	3	6	13	-7
Services	93	3	289	279	9
Total	388	572	767	1,206	-439
1979:					
Agriculture	76	45	95	85	11
Manufacturing	278	524	478	836	-358
Mining	5	4	17	14	3
Petroleum	1	5	8	17	-9
Services	117	6	372	302	69
Total	477	584	970	1,254	-284
1980:					
Agriculture	100	47	125	87	38
Manufacturing	335	530	578	853	-275
Mining	6	4	20	15	5
Petroleum	1	7	10	24	-14
Services	148	10	459	329	130
Total	589	599	1,193	1,309	-116
1981:					
Agriculture	95	41	118	81	37
Manufacturing	330	576	566	922	-356
Mining	6	5	18	17	2
Petroleum	1	8	11	27	-16
Services	143	16	447	362	85
Total	576	646	1,160	1,409	-248
1982:					
Agriculture	75	40	94	80	14
Manufacturing	267	619	461	994	-533
Mining	6	4	16	16	-1
Petroleum	2	10	12	36	-23
Services	111	14	353	378	-24
Total	460	688	937	1,504	-567

Table 9.--Summary of labor content of U.S. trade with the Newly Industrializing Countries (NICs), 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	105	49	128	97	31
Manufacturing	228	671	391	1,073	-682
Mining	4	3	12	15	-3
Petroleum	1	11	12	41	-29
Services	98	4	329	419	-89
Total	437	738	872	1,645	-773
1984:					
Agriculture	78	43	98	89	9
Manufacturing	249	859	425	1,360	-935
Mining	4	3	12	17	-5
Petroleum	1	10	11	41	-29
Services	101	4	350	513	-163
Total	434	918	897	2,021	-1,124

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 10.--Summary of labor content of U.S. trade with the Caribbean Basin countries, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	6	34	13	46	-33
Manufacturing	52	28	88	62	26
Mining	0	9	2	12	-10
Petroleum	0	7	1	19	-17
Services	19	0	62	67	-5
Total	78	78	166	205	-39
1979:					
Agriculture	6	34	13	47	-34
Manufacturing	55	32	94	68	26
Mining	0	7	2	10	-8
Petroleum	0	7	1	19	-17
Services	20	0	66	70	-5
Total	81	79	175	213	-38
1980:					
Agriculture	8	28	16	43	-27
Manufacturing	63	34	107	70	36
Mining	0	6	2	9	-7
Petroleum	0	6	2	18	-16
Services	24	0	77	68	10
Total	95	74	204	208	-3
1981:					
Agriculture	7	22	15	35	-19
Manufacturing	62	33	104	68	36
Mining	0	6	2	8	-6
Petroleum	0	6	2	17	-15
Services	23	0	76	60	15
Total	92	67	199	188	11
1982:					
Agriculture	7	25	15	35	-20
Manufacturing	58	30	99	61	38
Mining	0	5	2	7	-5
Petroleum	0	5	3	15	-12
Services	21	0	70	52	18
Total	86	66	189	169	19

Table 10.--Summary of labor content of U.S. trade with the Caribbean Basin countries, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	9	30	17	42	-25
Manufacturing	48	35	81	67	13
Mining	0	2	1	4	-3
Petroleum	1	6	3	18	-15
Services	18	0	62	58	4
Total	75	73	164	190	-26
1984:					
Agriculture	6	26	13	37	-23
Manufacturing	49	39	81	74	7
Mining	0	3	1	5	-4
Petroleum	1	5	3	15	-12
Services	18	0	63	59	4
Total	74	74	162	190	-28

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 11.--Summary of labor content of U.S. trade with the South American countries, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	24	71	33	92	-60
Manufacturing	114	56	201	116	85
Mining	2	8	7	13	-7
Petroleum	0	8	3	21	-18
Services	51	0	155	106	49
Total	191	144	399	349	50
1979:					
Agriculture	21	60	31	82	-51
Manufacturing	129	57	225	120	106
Mining	3	7	9	12	-4
Petroleum	0	9	4	24	-20
Services	56	0	174	111	63
Total	209	134	442	349	93
1980:					
Agriculture	31	59	42	82	-40
Manufacturing	150	56	262	115	147
Mining	3	8	10	13	-4
Petroleum	0	6	4	19	-15
Services	68	2	207	105	103
Total	252	131	526	334	192
1981:					
Agriculture	29	41	41	65	-24
Manufacturing	144	65	250	127	123
Mining	2	7	8	13	-5
Petroleum	0	7	4	21	-16
Services	64	1	196	105	91
Total	240	121	499	331	168
1982:					
Agriculture	27	44	36	64	-29
Manufacturing	124	63	218	125	92
Mining	2	5	7	10	-3
Petroleum	0	7	4	22	-18
Services	53	2	164	102	62
Total	207	122	428	324	105

Table 11.--Summary of labor content of U.S. trade with the South American countries, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	39	58	51	86	-35
Manufacturing	91	78	160	157	3
Mining	2	5	5	12	-6
Petroleum	1	14	5	45	-40
Services	44	1	142	145	-3
Total	176	156	364	444	-80
1984:					
Agriculture	28	59	39	85	-46
Manufacturing	92	104	164	203	-39
Mining	2	5	6	13	-7
Petroleum	0	17	5	54	-49
Services	45	1	149	179	-31
Total	168	185	362	534	-172

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 12.--Summary of labor content of U.S. trade with the Less Developed Countries (LDCs), 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	47	126	74	184	-110
Manufacturing	179	169	308	332	-25
Mining	1	32	7	46	-39
Petroleum	0	17	5	45	-40
Services	75	26	239	292	-53
Total	302	372	632	899	-267
1979:					
Agriculture	41	116	67	176	-108
Manufacturing	208	189	358	363	-5
Mining	2	31	9	45	-37
Petroleum	0	15	5	44	-38
Services	85	19	273	296	-23
Total	336	370	713	924	-211
1980:					
Agriculture	56	102	88	165	-77
Manufacturing	253	198	437	378	59
Mining	2	31	11	47	-36
Petroleum	0	15	7	45	-37
Services	109	34	343	317	26
Total	420	379	886	951	-65
1981:					
Agriculture	59	80	89	135	-46
Manufacturing	251	203	429	378	52
Mining	2	23	10	37	-27
Petroleum	0	15	8	46	-38
Services	107	13	339	277	62
Total	420	333	875	873	3
1982:					
Agriculture	63	86	89	132	-43
Manufacturing	248	203	425	375	50
Mining	2	22	10	35	-25
Petroleum	1	13	9	43	-34
Services	98	11	318	256	62
Total	411	335	852	842	10

Table 12.--Summary of labor content of U.S. trade with the Less Developed Countries (LDCs), 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	76	81	105	134	-28
Manufacturing	241	199	404	357	47
Mining	1	15	7	26	-19
Petroleum	1	11	9	39	-30
Services	88	14	303	246	57
Total	406	320	828	801	27
1984:					
Agriculture	71	74	97	123	-27
Manufacturing	233	269	391	464	-73
Mining	2	16	8	28	-20
Petroleum	1	11	10	39	-29
Services	91	14	313	287	26
Total	397	383	818	941	-123

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 13.--Summary of labor content of U.S. trade with the Nonmarket Economies (NMEs), 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	61	2	71	7	64
Manufacturing	18	30	39	51	-12
Mining	1	1	2	2	-0
Petroleum	0	0	1	1	0
Services	25	0	69	22	46
Total	105	33	182	84	98
1979:					
Agriculture	88	2	100	6	94
Manufacturing	24	35	54	61	-7
Mining	1	1	3	3	0
Petroleum	0	0	2	1	1
Services	37	1	105	27	78
Total	150	39	264	98	166
1980:					
Agriculture	77	1	88	6	82
Manufacturing	27	36	57	60	-3
Mining	1	1	3	2	1
Petroleum	0	0	2	1	1
Services	34	2	97	26	71
Total	140	40	247	96	152
1981:					
Agriculture	73	2	83	8	75
Manufacturing	24	45	53	75	-21
Mining	1	1	3	3	0
Petroleum	0	1	3	2	0
Services	32	0	94	30	63
Total	130	48	235	118	118
1982:					
Agriculture	64	2	72	7	65
Manufacturing	22	49	47	80	-33
Mining	1	1	3	2	1
Petroleum	0	1	3	3	-0
Services	25	0	78	29	48
Total	112	53	202	122	80

Table 13.--Summary of labor content of U.S. trade with the Nonmarket Economies (NMEs), 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	44	2	51	8	42
Manufacturing	24	49	46	80	-34
Mining	0	1	1	2	-0
Petroleum	0	1	2	4	-2
Services	19	0	59	31	28
Total	87	53	159	125	34
1984:					
Agriculture	54	2	62	7	55
Manufacturing	29	65	56	106	-50
Mining	0	1	2	2	-1
Petroleum	0	1	2	6	-3
Services	24	1	77	42	35
Total	108	70	199	163	36

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 14.--Summary of labor content of U.S. trade with the Organization of Petroleum Exporting Countries (OPEC), 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	23	29	41	37	4
Manufacturing	173	9	300	102	198
Mining	0	2	6	9	-3
Petroleum	0	63	3	149	-146
Services	68	0	210	270	-60
Total	264	103	560	567	-7
1979:					
Agriculture	19	24	34	31	3
Manufacturing	151	9	264	104	161
Mining	0	1	6	9	-3
Petroleum	0	61	3	153	-150
Services	61	0	189	275	-86
Total	232	95	496	571	-75
1980:					
Agriculture	22	21	38	28	10
Manufacturing	161	9	282	89	192
Mining	1	1	7	8	-1
Petroleum	0	52	4	138	-135
Services	68	0	207	232	-25
Total	251	84	537	495	41
1981:					
Agriculture	27	17	43	22	21
Manufacturing	179	10	312	77	236
Mining	1	1	7	7	-0
Petroleum	0	47	5	129	-124
Services	79	0	234	191	43
Total	286	76	601	426	175
1982:					
Agriculture	24	16	38	21	17
Manufacturing	184	11	320	62	258
Mining	1	1	7	4	3
Petroleum	0	31	5	88	-84
Services	72	0	220	132	88
Total	281	60	589	308	281

Table 14.--Summary of labor content of U.S. trade with the Organization of Petroleum Exporting Countries (OPEC), 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	32	17	45	23	22
Manufacturing	119	15	204	58	146
Mining	0	0	4	4	0
Petroleum	0	27	4	77	-73
Services	49	0	157	115	42
Total	201	59	414	278	137
1984:					
Agriculture	26	18	38	24	13
Manufacturing	93	21	161	69	93
Mining	0	0	3	4	-0
Petroleum	0	26	3	78	-75
Services	41	0	134	125	9
Total	160	66	339	299	40

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 15.--Summary of labor content of U.S. trade with the Pacific Rim countries, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	56	25	72	92	-20
Manufacturing	167	531	279	854	-575
Mining	1	4	7	14	-8
Petroleum	0	8	4	23	-19
Services	68	1	213	313	-101
Total	293	569	574	1,297	-722
1979:					
Agriculture	60	24	77	73	4
Manufacturing	209	500	351	797	-446
Mining	2	4	9	14	-5
Petroleum	0	5	5	18	-13
Services	84	1	269	286	-17
Total	355	533	711	1,189	-478
1980:					
Agriculture	64	22	81	69	12
Manufacturing	240	502	404	808	-404
Mining	2	4	10	15	-5
Petroleum	0	6	6	20	-14
Services	99	1	310	299	10
Total	405	535	811	1,212	-400
1981:					
Agriculture	64	19	81	63	18
Manufacturing	235	646	393	1,048	-655
Mining	3	4	10	19	-8
Petroleum	0	6	8	24	-16
Services	98	1	307	380	-72
Total	400	676	799	1,533	-734
1982:					
Agriculture	63	17	80	57	23
Manufacturing	246	589	415	936	-521
Mining	3	4	10	14	-4
Petroleum	1	4	9	18	-10
Services	95	1	306	316	-11
Total	408	615	820	1,342	-522

Table 15.--Summary of labor content of U.S. trade with the Pacific Rim countries, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	75	19	94	68	27
Manufacturing	216	630	363	998	-636
Mining	2	2	8	12	-3
Petroleum	1	5	10	23	-13
Services	85	2	288	360	-72
Total	380	658	763	1,461	-698
1984:					
Agriculture	55	18	71	64	8
Manufacturing	221	798	368	1,253	-885
Mining	2	2	8	13	-6
Petroleum	1	5	9	25	-16
Services	83	1	291	440	-149
Total	361	825	747	1,796	-1,049

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 16.--Summary of labor content of U.S. trade with Canada, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	17	8	34	39	-5
Manufacturing	300	341	564	687	-123
Mining	10	21	22	40	-18
Petroleum	1	12	8	25	-17
Services	124	4	390	336	54
Total	451	386	1,019	1,128	-109
1979:					
Agriculture	14	8	29	39	-9
Manufacturing	321	351	605	689	-84
Mining	12	22	27	41	-14
Petroleum	1	12	8	26	-18
Services	132	9	417	339	78
Total	480	402	1,086	1,133	-47
1980:					
Agriculture	21	8	38	38	1
Manufacturing	324	336	597	649	-52
Mining	11	19	26	39	-13
Petroleum	1	12	9	25	-16
Services	137	25	424	345	79
Total	493	400	1,095	1,096	-1
1981:					
Agriculture	21	9	37	38	-1
Manufacturing	341	350	617	669	-52
Mining	10	20	25	40	-15
Petroleum	1	11	10	26	-16
Services	140	17	436	346	90
Total	513	407	1,125	1,119	6
1982:					
Agriculture	20	10	34	41	-7
Manufacturing	291	345	537	687	-149
Mining	10	17	22	35	-13
Petroleum	1	13	9	29	-20
Services	113	17	363	342	20
Total	435	403	965	1,134	-169

Table 16.--Summary of labor content of U.S. trade with Canada, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	22	12	38	48	-10
Manufacturing	290	347	537	690	-153
Mining	8	10	20	27	-7
Petroleum	1	15	10	34	-24
Services	115	14	384	366	17
Total	436	398	988	1,166	-178
1984:					
Agriculture	17	11	32	46	-14
Manufacturing	336	423	620	844	-224
Mining	8	13	20	33	-12
Petroleum	1	15	11	38	-27
Services	132	18	447	452	-6
Total	495	480	1,130	1,413	-283

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 17.--Summary of labor content of U.S. trade with Mexico, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	14	25	20	35	-15
Manufacturing	74	65	128	113	15
Mining	1	2	4	4	-1
Petroleum	0	3	2	8	-6
Services	30	3	94	65	29
Total	120	98	248	226	22
1979:					
Agriculture	12	24	18	33	-15
Manufacturing	102	74	177	131	46
Mining	1	2	5	5	0
Petroleum	0	4	3	12	-10
Services	39	5	125	82	44
Total	155	109	329	263	66
1980:					
Agriculture	32	19	42	29	13
Manufacturing	134	72	235	130	106
Mining	1	2	7	5	2
Petroleum	0	7	4	19	-15
Services	58	7	180	89	91
Total	226	108	468	271	197
1981:					
Agriculture	28	19	38	27	11
Manufacturing	152	75	261	132	129
Mining	1	3	7	5	1
Petroleum	0	7	5	19	-14
Services	61	15	192	98	94
Total	243	119	503	282	221
1982:					
Agriculture	13	21	19	30	-12
Manufacturing	93	74	162	138	24
Mining	1	3	4	6	-2
Petroleum	1	9	5	26	-21
Services	36	12	116	105	11
Total	144	119	306	305	1

Table 17.--Summary of labor content of U.S. trade with Mexico, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	30	25	37	36	1
Manufacturing	66	80	114	148	-33
Mining	1	2	3	5	-2
Petroleum	0	10	3	30	-27
Services	28	2	95	103	-9
Total	125	119	252	322	-70
1984:					
Agriculture	23	19	29	28	1
Manufacturing	86	95	148	171	-23
Mining	1	2	3	5	-2
Petroleum	1	9	4	27	-23
Services	34	2	117	112	5
Total	144	127	301	343	-41

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 18.--Summary of labor content of U.S. trade with Brazil, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	11	29	13	39	-26
Manufacturing	27	29	47	51	-5
Mining	1	1	3	3	0
Petroleum	0	0	1	1	0
Services	14	0	43	32	11
Total	53	59	107	126	-19
1979:					
Agriculture	9	18	10	29	-19
Manufacturing	28	33	50	58	-8
Mining	2	1	4	3	1
Petroleum	0	0	1	1	0
Services	14	0	45	33	12
Total	53	52	110	123	-14
1980:					
Agriculture	11	25	13	37	-24
Manufacturing	33	31	57	56	2
Mining	2	1	4	3	1
Petroleum	0	0	1	1	0
Services	17	0	52	36	16
Total	63	57	128	133	-5
1981:					
Agriculture	11	19	12	31	-19
Manufacturing	27	38	47	65	-18
Mining	1	2	3	3	-1
Petroleum	0	0	1	2	-1
Services	14	0	42	40	3
Total	53	59	105	142	-36
1982:					
Agriculture	9	17	10	28	-18
Manufacturing	25	36	45	64	-19
Mining	2	1	3	3	0
Petroleum	0	1	1	3	-2
Services	12	0	37	37	0
Total	48	55	96	134	-38

Table 18.--Summary of labor content of U.S. trade with Brazil, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	9	20	10	33	-23
Manufacturing	16	42	29	72	-43
Mining	1	1	2	2	-0
Petroleum	0	1	1	3	-3
Services	8	0	27	42	-15
Total	35	64	69	153	-84
1984:					
Agriculture	7	20	8	34	-26
Manufacturing	15	65	27	108	-81
Mining	2	1	2	3	-1
Petroleum	0	1	1	4	-4
Services	8	0	27	59	-32
Total	31	87	65	208	-144

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 19.--Summary of labor content of U.S. trade with Venezuela, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	4	1	7	2	5
Manufacturing	43	1	76	12	64
Mining	0	2	2	3	-1
Petroleum	0	7	1	17	-16
Services	17	0	53	31	22
Total	65	11	139	64	74
1979:					
Agriculture	4	1	7	1	6
Manufacturing	41	1	72	13	59
Mining	0	1	2	2	-1
Petroleum	0	7	1	18	-17
Services	16	0	51	33	18
Total	62	10	133	68	65
1980:					
Agriculture	6	0	10	1	9
Manufacturing	44	2	75	10	65
Mining	0	1	2	2	0
Petroleum	0	5	1	14	-13
Services	18	0	56	24	33
Total	68	8	145	50	95
1981:					
Agriculture	7	0	11	1	11
Manufacturing	47	2	82	10	71
Mining	0	1	2	2	-0
Petroleum	0	5	1	14	-13
Services	20	0	62	22	40
Total	74	9	158	49	109
1982:					
Agriculture	6	0	9	1	9
Manufacturing	47	1	82	9	73
Mining	0	1	2	1	0
Petroleum	0	5	1	14	-12
Services	19	0	57	19	38
Total	72	7	152	44	108

Table 19.--Summary of labor content of U.S. trade with Venezuela, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	8	0	11	1	10
Manufacturing	18	4	33	12	20
Mining	0	0	1	1	-0
Petroleum	0	5	1	15	-15
Services	9	0	28	23	5
Total	35	9	74	53	21
1984:					
Agriculture	6	1	9	1	8
Manufacturing	21	5	37	17	21
Mining	0	0	1	1	-1
Petroleum	0	6	1	19	-18
Services	10	0	33	30	3
Total	37	13	82	69	14

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 20.--Summary of labor content of U.S. trade with Argentina, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	0	1	0	4	-3
Manufacturing	10	8	17	14	3
Mining	0	0	1	0	0
Petroleum	0	0	0	0	-0
Services	4	0	11	7	4
Total	14	9	30	25	4
1979:					
Agriculture	0	0	1	4	-3
Manufacturing	20	7	34	11	23
Mining	0	0	1	0	1
Petroleum	0	0	0	0	0
Services	7	0	22	6	16
Total	28	7	59	22	37
1980:					
Agriculture	0	0	1	4	-2
Manufacturing	27	6	47	10	37
Mining	0	0	1	0	1
Petroleum	0	0	1	0	0
Services	10	1	30	8	22
Total	38	7	80	23	57
1981:					
Agriculture	0	1	1	5	-4
Manufacturing	22	7	36	14	23
Mining	0	0	1	1	0
Petroleum	0	0	1	1	-0
Services	7	0	24	10	13
Total	30	9	62	30	32
1982:					
Agriculture	0	0	0	3	-3
Manufacturing	12	7	21	12	9
Mining	0	0	1	0	0
Petroleum	0	0	0	1	-1
Services	4	1	13	10	4
Total	17	9	36	27	9

Table 20.--Summary of labor content of U.S. trade with Argentina, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	0	1	0	4	-3
Manufacturing	8	6	13	10	3
Mining	0	0	0	0	0
Petroleum	0	0	0	1	-1
Services	3	0	10	7	2
Total	11	7	24	23	2
1984:					
Agriculture	0	1	0	4	-3
Manufacturing	7	6	11	11	1
Mining	0	0	0	0	0
Petroleum	0	0	0	1	-0
Services	2	0	9	7	1
Total	10	7	21	23	-1

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 21.--Summary of labor content of U.S. trade with Japan, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	74	0	103	10	93
Manufacturing	121	391	214	715	-501
Mining	7	0	13	16	-3
Petroleum	1	0	4	5	-1
Services	65	0	201	272	-71
Total	268	392	535	1,018	-482
1979:					
Agriculture	72	0	104	7	96
Manufacturing	163	374	287	696	-409
Mining	12	1	19	17	2
Petroleum	1	0	5	5	0
Services	81	1	253	268	-16
Total	329	376	668	994	-326
1980:					
Agriculture	84	0	114	8	106
Manufacturing	166	400	298	753	-455
Mining	15	0	24	18	6
Petroleum	1	0	6	6	0
Services	88	4	274	298	-23
Total	352	405	716	1,082	-366
1981:					
Agriculture	82	0	109	8	101
Manufacturing	149	454	268	833	-565
Mining	14	0	22	18	4
Petroleum	1	0	7	7	-0
Services	81	3	258	330	-72
Total	327	457	664	1,197	-533
1982:					
Agriculture	73	0	100	9	92
Manufacturing	147	458	268	852	-585
Mining	15	0	22	18	5
Petroleum	1	0	8	7	0
Services	74	5	245	328	-83
Total	310	464	643	1,214	-571

Table 21.--Summary of labor content of U.S. trade with Japan, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	94	1	122	11	112
Manufacturing	138	445	247	827	-581
Mining	8	0	14	14	1
Petroleum	1	0	9	8	1
Services	71	1	241	342	-101
Total	313	446	633	1,202	-568
1984:					
Agriculture	79	0	102	11	91
Manufacturing	142	579	250	1,066	-816
Mining	7	0	13	17	-4
Petroleum	1	0	8	10	-2
Services	70	1	243	455	-212
Total	298	581	617	1,560	-943

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 22.--Summary of labor content of U.S. trade with Hong Kong, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	6	0	8	4	4
Manufacturing	19	109	31	171	-140
Mining	0	0	0	1	-0
Petroleum	0	0	0	1	-0
Services	7	0	23	43	-20
Total	32	109	63	220	-157
1979:					
Agriculture	4	0	7	4	3
Manufacturing	23	115	37	179	-142
Mining	0	0	1	1	-0
Petroleum	0	0	0	1	-0
Services	8	1	27	46	-19
Total	36	115	72	231	-159
1980:					
Agriculture	5	0	8	4	4
Manufacturing	26	118	43	186	-143
Mining	0	0	1	1	-0
Petroleum	0	0	1	1	-0
Services	10	0	32	51	-18
Total	41	119	84	243	-159
1981:					
Agriculture	4	0	6	4	2
Manufacturing	23	123	39	194	-155
Mining	0	0	1	1	-1
Petroleum	0	0	1	1	-0
Services	9	0	29	53	-24
Total	36	124	76	253	-178
1982:					
Agriculture	4	0	6	4	2
Manufacturing	22	128	37	201	-165
Mining	0	0	1	1	-1
Petroleum	0	0	1	1	-1
Services	8	0	26	54	-28
Total	34	129	71	262	-191

Table 22.--Summary of labor content of U.S. trade with Hong Kong, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	4	0	6	5	2
Manufacturing	23	130	38	205	-167
Mining	0	0	1	1	-1
Petroleum	0	0	1	1	-1
Services	8	0	28	59	-32
Total	35	131	73	272	-198
1984:					
Agriculture	4	0	6	5	1
Manufacturing	26	166	43	259	-216
Mining	0	0	1	1	-1
Petroleum	0	0	1	2	-1
Services	8	0	32	74	-42
Total	38	166	82	341	-259

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 23.--Summary of labor content of U.S. trade with Korea, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	20	1	25	5	20
Manufacturing	26	106	46	164	-118
Mining	1	0	2	2	0
Petroleum	0	0	1	1	-0
Services	14	0	43	45	-2
Total	62	107	117	218	-100
1979:					
Agriculture	22	1	26	5	21
Manufacturing	31	102	55	158	-103
Mining	1	0	2	2	1
Petroleum	0	0	1	1	0
Services	17	0	52	45	8
Total	70	103	137	210	-73
1980:					
Agriculture	26	0	31	4	27
Manufacturing	30	95	54	149	-94
Mining	1	0	3	2	1
Petroleum	0	0	1	1	0
Services	18	0	55	43	12
Total	75	95	144	199	-54
1981:					
Agriculture	28	0	32	4	28
Manufacturing	31	108	55	169	-114
Mining	1	0	3	2	1
Petroleum	0	0	2	1	0
Services	19	0	58	50	8
Total	79	108	150	226	-76
1982:					
Agriculture	23	0	28	4	23
Manufacturing	39	123	68	192	-124
Mining	1	0	3	2	1
Petroleum	0	0	2	1	1
Services	19	0	60	54	6
Total	82	124	161	253	-93

Table 23.--Summary of labor content of U.S. trade with Korea, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	30	0	36	6	30
Manufacturing	38	137	66	213	-148
Mining	1	0	2	2	0
Petroleum	0	0	2	2	0
Services	19	0	62	65	-3
Total	87	138	168	288	-120
1984:					
Agriculture	19	0	24	6	18
Manufacturing	38	174	64	268	-204
Mining	1	0	2	2	-0
Petroleum	0	0	2	2	0
Services	17	0	59	81	-23
Total	75	175	151	359	-208

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 24.--Summary of labor content of U.S. trade with Taiwan, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	17	0	19	6	13
Manufacturing	20	141	35	219	-184
Mining	0	0	1	2	-1
Petroleum	0	0	1	1	-0
Services	10	0	32	62	-30
Total	48	141	88	290	-202
1979:					
Agriculture	18	0	20	6	15
Manufacturing	25	146	44	225	-181
Mining	0	0	1	2	-0
Petroleum	0	0	1	1	-0
Services	13	0	42	64	-22
Total	57	146	109	298	-190
1980:					
Agriculture	17	0	19	6	13
Manufacturing	35	153	60	238	-179
Mining	0	0	2	2	-0
Petroleum	0	0	1	1	-0
Services	16	0	50	70	-20
Total	69	154	133	319	-186
1981:					
Agriculture	16	0	19	6	12
Manufacturing	31	167	53	257	-205
Mining	1	0	2	2	0
Petroleum	0	0	1	2	-0
Services	15	0	47	77	-31
Total	63	167	121	345	-223
1982:					
Agriculture	17	0	20	7	13
Manufacturing	32	191	54	294	-239
Mining	1	0	2	2	-0
Petroleum	0	0	1	2	-1
Services	14	0	46	84	-39
Total	64	191	123	389	-266

Table 24.--Summary of labor content of U.S. trade with Taiwan, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	22	0	26	9	16
Manufacturing	27	212	48	325	-276
Mining	1	0	2	2	-1
Petroleum	0	0	2	2	-1
Services	14	1	47	101	-54
Total	64	214	124	440	-315
1984:					
Agriculture	19	0	22	10	12
Manufacturing	27	271	48	412	-363
Mining	1	0	2	3	-1
Petroleum	0	0	2	3	-1
Services	14	0	48	127	-79
Total	61	272	122	554	-432

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 25.--Summary of labor content of U.S. trade with the People's Republic of China (PRC), 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	12	0	13	1	12
Manufacturing	3	8	7	13	-6
Mining	0	0	0	0	-0
Petroleum	0	0	0	0	0
Services	4	0	13	4	8
Total	19	8	33	19	14
1979:					
Agriculture	17	0	19	2	17
Manufacturing	7	11	16	19	-3
Mining	0	0	1	1	0
Petroleum	0	0	1	1	-0
Services	8	0	24	7	17
Total	33	12	59	28	31
1980:					
Agriculture	37	1	41	2	38
Manufacturing	15	18	31	30	1
Mining	0	1	1	1	-0
Petroleum	0	0	1	1	0
Services	16	1	47	11	36
Total	68	20	121	45	76
1981:					
Agriculture	31	0	34	4	30
Manufacturing	15	27	30	45	-15
Mining	0	1	1	2	-1
Petroleum	0	0	1	1	0
Services	14	0	43	17	26
Total	59	29	110	69	40
1982:					
Agriculture	26	1	29	4	25
Manufacturing	15	34	31	57	-27
Mining	0	1	1	1	-1
Petroleum	0	1	1	2	-1
Services	11	0	37	19	18
Total	52	37	99	84	14

Table 25.--Summary of labor content of U.S. trade with the People's Republic of China (PRC), 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	11	1	13	4	8
Manufacturing	17	36	29	59	-29
Mining	0	0	1	1	-0
Petroleum	0	1	1	2	-1
Services	8	0	26	20	6
Total	35	38	69	86	-17
1984:					
Agriculture	9	1	11	4	7
Manufacturing	22	48	39	77	-38
Mining	0	1	1	1	-0
Petroleum	0	1	1	3	-2
Services	9	1	33	26	7
Total	40	51	84	111	-26

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 26.--Summary of labor content of U.S. trade with Singapore, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	1	1	2	1	0
Manufacturing	22	25	35	38	-4
Mining	0	0	1	0	0
Petroleum	0	0	0	1	-1
Services	7	0	21	12	8
Total	29	26	58	53	5
1979:					
Agriculture	1	1	2	2	-0
Manufacturing	31	30	49	46	3
Mining	0	0	1	0	0
Petroleum	0	0	0	1	-0
Services	9	0	30	15	14
Total	41	31	82	65	17
1980:					
Agriculture	1	1	2	2	1
Manufacturing	35	35	56	55	1
Mining	0	0	1	1	0
Petroleum	0	0	1	0	0
Services	12	0	37	19	17
Total	47	36	97	77	20
1981:					
Agriculture	2	1	3	2	1
Manufacturing	30	35	49	55	-6
Mining	0	0	1	1	0
Petroleum	0	0	1	1	0
Services	11	0	34	20	14
Total	43	36	88	78	9
1982:					
Agriculture	1	1	2	2	1
Manufacturing	32	37	52	59	-7
Mining	0	0	1	1	0
Petroleum	0	0	1	1	1
Services	12	0	35	21	14
Total	45	38	92	83	9

Table 26.--Summary of labor content of U.S. trade with Singapore, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	1	2	3	3	0
Manufacturing	32	41	53	68	-15
Mining	0	0	1	1	0
Petroleum	0	0	2	1	1
Services	11	0	37	27	10
Total	45	43	96	99	-4
1984:					
Agriculture	1	1	2	2	0
Manufacturing	33	52	53	88	-34
Mining	0	0	1	1	0
Petroleum	0	0	1	1	-0
Services	10	0	36	36	-0
Total	43	54	92	127	-35

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 27.--Summary of labor content of U.S. trade with the Philippines, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	4	1	5	9	-4
Manufacturing	12	24	19	38	-19
Mining	0	0	0	1	-0
Petroleum	0	0	0	0	0
Services	5	0	15	15	-1
Total	20	25	40	63	-24
1979:					
Agriculture	4	1	5	8	-3
Manufacturing	17	27	28	43	-15
Mining	0	1	1	1	-1
Petroleum	0	0	0	0	0
Services	6	0	20	17	3
Total	27	29	54	70	-16
1980:					
Agriculture	4	2	6	9	-3
Manufacturing	21	30	35	48	-13
Mining	0	0	1	1	-0
Petroleum	0	0	0	0	0
Services	8	0	24	20	5
Total	33	32	66	77	-11
1981:					
Agriculture	4	2	5	8	-3
Manufacturing	17	33	28	53	-25
Mining	0	1	1	1	-1
Petroleum	0	0	0	1	-0
Services	6	0	20	21	-0
Total	28	35	55	83	-28
1982:					
Agriculture	5	2	6	7	-1
Manufacturing	18	31	30	49	-19
Mining	0	1	1	1	-1
Petroleum	0	0	1	0	0
Services	6	0	21	19	2
Total	29	34	58	76	-18

Table 27.--Summary of labor content of U.S. trade with the Philippines, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	5	2	6	8	-1
Manufacturing	16	31	27	49	-23
Mining	0	0	0	1	-0
Petroleum	0	0	1	1	0
Services	6	0	20	20	-0
Total	27	33	53	78	-24
1984:					
Agriculture	3	1	4	7	-3
Manufacturing	15	37	24	58	-33
Mining	0	0	0	1	-0
Petroleum	0	0	0	1	-0
Services	5	0	18	22	-5
Total	23	39	47	88	-41

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 28.--Summary of labor content of U.S. trade with the United Kingdom, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	17	2	23	10	13
Manufacturing	83	87	140	151	-10
Mining	1	4	4	8	-4
Petroleum	0	2	2	6	-4
Services	29	1	98	72	26
Total	131	96	268	247	21
1979:					
Agriculture	13	1	19	9	10
Manufacturing	110	91	191	159	32
Mining	2	4	9	7	1
Petroleum	0	2	2	7	-5
Services	36	2	131	78	53
Total	162	100	351	260	91
1980:					
Agriculture	10	1	16	9	7
Manufacturing	127	97	219	166	53
Mining	4	4	10	8	2
Petroleum	0	2	3	7	-5
Services	42	6	149	85	63
Total	183	110	397	276	121
1981:					
Agriculture	9	1	15	9	7
Manufacturing	117	95	200	161	39
Mining	2	1	8	5	3
Petroleum	0	5	3	15	-13
Services	38	3	137	87	50
Total	166	105	363	277	85
1982:					
Agriculture	9	1	15	9	6
Manufacturing	106	97	180	165	15
Mining	2	1	5	4	1
Petroleum	0	6	3	18	-15
Services	33	1	117	86	30
Total	151	106	320	282	37

Table 28.--Summary of labor content of U.S. trade with the United Kingdom, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	10	2	16	10	6
Manufacturing	100	88	167	151	16
Mining	1	0	4	4	-1
Petroleum	0	5	3	16	-14
Services	31	2	112	86	26
Total	141	96	302	268	33
1984:					
Agriculture	7	2	11	9	3
Manufacturing	105	103	177	175	2
Mining	1	0	4	4	0
Petroleum	0	5	3	17	-14
Services	33	3	123	98	25
Total	146	113	318	302	16

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 29.--Summary of labor content of U.S. trade with Italy, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	16	1	21	8	14
Manufacturing	30	94	52	146	-94
Mining	2	0	3	3	1
Petroleum	0	0	1	2	-1
Services	15	1	47	53	-6
Total	63	97	125	212	-87
1979:					
Agriculture	13	1	18	7	11
Manufacturing	40	107	70	165	-95
Mining	3	0	5	2	2
Petroleum	0	1	1	3	-1
Services	18	0	58	58	-0
Total	74	109	152	235	-83
1980:					
Agriculture	14	1	20	7	13
Manufacturing	49	78	85	122	-38
Mining	3	0	6	2	4
Petroleum	0	0	2	1	0
Services	22	2	69	47	22
Total	88	81	180	180	1
1981:					
Agriculture	14	1	18	7	12
Manufacturing	39	78	69	122	-53
Mining	4	0	6	2	4
Petroleum	0	0	2	2	-0
Services	19	3	61	50	10
Total	77	83	155	183	-27
1982:					
Agriculture	10	1	15	7	7
Manufacturing	33	84	60	130	-70
Mining	5	0	7	2	4
Petroleum	0	0	2	2	-0
Services	16	0	51	47	4
Total	65	86	134	189	-55

Table 29.--Summary of labor content of U.S. trade with Italy, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	8	1	12	8	4
Manufacturing	28	79	48	121	-73
Mining	3	0	4	2	2
Petroleum	0	0	1	2	-1
Services	12	0	41	46	-5
Total	51	81	107	180	-73
1984:					
Agriculture	9	1	11	9	3
Manufacturing	29	111	50	169	-119
Mining	2	0	3	2	1
Petroleum	0	1	1	3	-2
Services	13	0	43	64	-20
Total	53	112	110	247	-137

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 30.--Summary of labor content of U.S. trade with France, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	6	1	11	8	3
Manufacturing	49	65	83	107	-24
Mining	1	1	3	4	-1
Petroleum	0	0	1	1	-0
Services	18	1	59	47	12
Total	75	68	157	168	-11
1979:					
Agriculture	6	1	12	7	4
Manufacturing	60	69	102	115	-13
Mining	2	0	4	3	1
Petroleum	0	0	1	2	-0
Services	22	1	72	50	22
Total	90	72	191	177	14
1980:					
Agriculture	7	1	12	8	4
Manufacturing	72	69	124	114	9
Mining	3	0	6	3	3
Petroleum	0	0	2	1	0
Services	27	1	89	50	39
Total	109	71	232	176	56
1981:					
Agriculture	6	1	10	7	2
Manufacturing	68	68	115	112	3
Mining	4	0	6	3	3
Petroleum	0	0	2	2	-0
Services	25	0	83	50	32
Total	102	69	216	175	41
1982:					
Agriculture	6	1	10	7	2
Manufacturing	65	66	112	110	2
Mining	4	0	6	3	3
Petroleum	0	0	2	2	0
Services	23	0	77	47	30
Total	98	67	207	169	38

Table 30.--Summary of labor content of U.S. trade with France, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	6	1	9	9	-0
Manufacturing	53	60	89	100	-12
Mining	2	0	3	2	1
Petroleum	0	0	1	2	-0
Services	18	2	62	49	13
Total	78	63	164	163	1
1984:					
Agriculture	5	1	7	9	-2
Manufacturing	50	78	83	130	-46
Mining	1	0	2	3	-0
Petroleum	0	0	1	2	-1
Services	17	1	60	62	-2
Total	72	80	154	206	-51

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 31.--Summary of labor content of U.S. trade with West Germany, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	20	3	29	8	21
Manufacturing	79	136	134	255	-121
Mining	1	4	4	11	-8
Petroleum	0	0	2	2	-1
Services	29	2	98	108	-10
Total	129	146	267	385	-118
1979:					
Agriculture	16	2	24	6	17
Manufacturing	89	142	152	266	-114
Mining	3	3	6	10	-5
Petroleum	0	0	2	2	-0
Services	33	2	109	110	-1
Total	141	150	292	394	-102
1980:					
Agriculture	18	3	27	7	21
Manufacturing	104	144	177	267	-90
Mining	3	1	7	7	-1
Petroleum	0	0	2	3	-0
Services	39	2	129	108	22
Total	164	150	343	391	-48
1981:					
Agriculture	18	2	25	6	20
Manufacturing	94	127	159	226	-67
Mining	2	1	5	7	-2
Petroleum	0	0	2	3	-0
Services	34	1	116	94	22
Total	149	131	308	336	-27
1982:					
Agriculture	16	2	23	6	16
Manufacturing	84	136	144	245	-101
Mining	2	1	4	7	-3
Petroleum	0	0	2	3	-1
Services	29	1	101	97	5
Total	132	139	275	358	-84

Table 31.--Summary of labor content of U.S. trade with West Germany, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	15	3	24	8	16
Manufacturing	74	126	125	227	-102
Mining	1	0	3	5	-2
Petroleum	0	0	2	3	-1
Services	26	1	93	98	-5
Total	116	129	247	342	-95
1984:					
Agriculture	8	3	13	8	5
Manufacturing	75	155	126	281	-154
Mining	1	1	3	7	-4
Petroleum	0	0	2	4	-2
Services	24	1	91	125	-34
Total	108	160	236	425	-189

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 32.--Summary of labor content of U.S. trade with the Netherlands, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	39	5	49	9	40
Manufacturing	40	18	74	31	43
Mining	3	1	5	2	3
Petroleum	0	0	2	1	1
Services	26	1	81	19	62
Total	108	25	211	62	149
1979:					
Agriculture	33	3	43	7	36
Manufacturing	46	18	86	30	56
Mining	4	0	7	1	6
Petroleum	0	0	2	2	1
Services	28	0	91	19	72
Total	112	22	229	59	170
1980:					
Agriculture	38	3	52	6	46
Manufacturing	53	19	98	32	66
Mining	5	0	8	1	7
Petroleum	0	0	3	1	2
Services	33	0	106	18	88
Total	129	22	266	59	208
1981:					
Agriculture	32	2	45	6	39
Manufacturing	47	18	87	31	56
Mining	5	0	8	1	7
Petroleum	0	1	3	2	1
Services	31	0	98	19	79
Total	114	22	240	59	182
1982:					
Agriculture	31	3	43	7	37
Manufacturing	47	20	90	34	56
Mining	5	0	8	1	7
Petroleum	1	1	4	3	2
Services	29	1	96	20	75
Total	112	24	241	64	177

Table 32.--Summary of labor content of U.S. trade with the Netherlands, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	25	4	38	9	29
Manufacturing	47	20	85	34	51
Mining	3	0	5	1	4
Petroleum	0	1	3	4	-1
Services	23	0	83	23	61
Total	98	25	214	70	144
1984:					
Agriculture	19	5	28	9	19
Manufacturing	43	27	79	46	33
Mining	3	0	5	1	4
Petroleum	0	1	2	5	-2
Services	21	0	77	30	47
Total	87	34	192	91	101

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 33.--Summary of labor content of U.S. trade with Australia, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	1	1	2	12	-9
Manufacturing	36	16	60	30	30
Mining	0	3	1	4	-3
Petroleum	0	0	1	1	0
Services	13	0	40	21	19
Total	50	19	104	68	37
1979:					
Agriculture	1	1	2	13	-11
Manufacturing	41	19	70	35	35
Mining	0	2	1	4	-2
Petroleum	0	0	1	1	0
Services	15	0	47	24	23
Total	57	21	121	77	45
1980:					
Agriculture	1	1	3	13	-11
Manufacturing	44	19	74	37	37
Mining	0	3	2	5	-3
Petroleum	0	0	1	1	0
Services	17	0	52	26	25
Total	62	23	131	82	49
1981:					
Agriculture	1	1	3	11	-8
Manufacturing	51	18	86	34	52
Mining	0	2	2	4	-2
Petroleum	0	0	1	1	0
Services	20	0	59	24	35
Total	72	21	152	74	77
1982:					
Agriculture	1	1	2	9	-7
Manufacturing	46	19	77	36	41
Mining	0	2	1	4	-3
Petroleum	0	0	1	1	0
Services	16	0	50	23	27
Total	63	22	132	74	58

Table 33.--Summary of labor content of U.S. trade with Australia, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	1	1	3	11	-8
Manufacturing	36	17	60	31	30
Mining	0	1	1	2	-1
Petroleum	0	0	1	1	0
Services	12	0	41	21	20
Total	50	19	107	66	41
1984:					
Agriculture	1	1	3	8	-5
Manufacturing	40	16	67	30	37
Mining	0	2	1	3	-2
Petroleum	0	0	1	2	-0
Services	14	0	48	22	26
Total	56	19	120	65	54

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 34.--Summary of labor content of U.S. trade with Israel, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	6	0	7	1	6
Manufacturing	12	16	20	23	-3
Mining	0	1	0	1	-0
Petroleum	0	0	0	0	0
Services	5	0	16	9	7
Total	23	17	44	34	10
1979:					
Agriculture	5	0	6	1	5
Manufacturing	15	14	27	21	5
Mining	0	1	1	1	-0
Petroleum	0	0	0	0	0
Services	7	0	20	8	12
Total	27	15	54	31	23
1980:					
Agriculture	5	0	6	1	5
Manufacturing	14	15	23	23	0
Mining	1	1	1	1	0
Petroleum	0	0	0	0	0
Services	6	0	19	9	10
Total	25	16	49	33	15
1981:					
Agriculture	5	0	6	1	5
Manufacturing	14	18	23	26	-3
Mining	0	1	1	1	-0
Petroleum	0	0	0	0	0
Services	6	0	18	10	8
Total	25	18	48	38	10
1982:					
Agriculture	6	0	6	1	5
Manufacturing	14	17	24	26	-1
Mining	0	1	1	1	-0
Petroleum	0	0	0	0	0
Services	6	0	18	10	8
Total	26	18	50	38	12

Table 34.--Summary of labor content of U.S. trade with Israel, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	5	0	6	1	5
Manufacturing	15	16	25	24	0
Mining	0	0	1	1	-0
Petroleum	0	0	0	0	0
Services	5	0	18	10	8
Total	26	17	50	36	14
1984:					
Agriculture	4	0	5	1	4
Manufacturing	16	23	26	34	-8
Mining	0	0	1	1	-0
Petroleum	0	0	0	0	0
Services	6	0	19	14	6
Total	26	24	51	50	1

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 35.--Summary of labor content of U.S. trade with South Africa, 1978-1984

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1978:					
Agriculture	0	0	1	1	-0
Manufacturing	13	12	22	24	-2
Mining	0	12	0	15	-14
Petroleum	0	0	0	1	-0
Services	5	26	16	47	-31
Total	19	50	40	88	-48
1979:					
Agriculture	0	0	1	2	-0
Manufacturing	16	14	27	28	-1
Mining	0	13	1	16	-15
Petroleum	0	0	0	1	-0
Services	6	19	19	40	-22
Total	22	46	48	86	-39
1980:					
Agriculture	0	0	2	2	-0
Manufacturing	25	14	43	30	13
Mining	0	13	1	16	-15
Petroleum	0	0	1	1	-0
Services	10	32	30	56	-26
Total	36	60	77	105	-29
1981:					
Agriculture	1	0	3	1	1
Manufacturing	27	14	46	27	20
Mining	0	7	1	9	-8
Petroleum	0	0	1	1	0
Services	11	12	33	30	2
Total	40	33	83	68	15
1982:					
Agriculture	1	1	2	2	0
Manufacturing	23	12	39	23	16
Mining	0	6	1	8	-8
Petroleum	0	0	1	1	0
Services	8	10	26	25	1
Total	32	29	68	58	10

Table 35.--Summary of labor content of U.S. trade with South Africa, 1978-1984--Continued

(in thousands of work-years)

Industry	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
1983:					
Agriculture	3	1	4	2	2
Manufacturing	18	10	30	19	11
Mining	0	6	1	8	-7
Petroleum	0	0	1	1	0
Services	7	12	22	27	-4
Total	27	28	57	56	2
1984:					
Agriculture	6	1	7	2	5
Manufacturing	15	13	26	24	2
Mining	0	5	0	7	-6
Petroleum	0	0	1	1	-0
Services	7	12	23	30	-7
Total	28	31	58	64	-6

Source: Computed from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 36.--Changes in labor content of U.S. trade with selected trading partners, 1980 to 1984

(in thousands of work-years)

Trading partner	Direct labor content		Total labor content		
	Exports	Imports	Exports	Imports	Net
World	-619	696	-1,198	1,678	-2,876
OECD	-306	338	-562	1,030	-1,592
EEC	-223	87	-443	243	-686
NIC	-155	319	-296	712	-1,007
Caribbean Basin	-21	-0	-42	-18	-24
South America	-84	54	-164	200	-364
LDC	-23	3	-68	-11	-57
NME Countries	-32	29	-48	68	-115
OPEC	-91	-18	-197	-196	-2
Pacific Rim	-44	290	-64	584	-648
Canada	1	80	35	317	-282
Mexico	-82	19	-167	72	-239
Brazil	-31	30	-63	75	-138
Venezuela	-31	4	-63	18	-81
Argentina	-28	-1	-59	-0	-58
Japan	-54	176	-99	478	-577
Hong Kong	-2	47	-2	98	-100
Korea	-0	79	7	161	-154
Taiwan	-8	118	-10	236	-246
China (PRC)	-27	31	-37	66	-103
Singapore	-4	18	-4	50	-54
Philippines	-10	7	-19	11	-30
United Kingdom	-37	3	-79	26	-105
Italy	-35	32	-71	67	-138
France	-37	9	-77	30	-107
West Germany	-55	10	-107	34	-141
Netherlands	-41	11	-75	32	-107
Australia	-7	-4	-11	-17	6
Israel	1	8	2	16	-14
South Africa	-7	-29	-19	-41	22

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 37.--Labor intensities of U.S. trade with selected trading partners, 1978, 1981 and 1984

(In thousands of work-years per billion dollars)

Trading partner and type of trade	1978	1981	1984
World:			
Exports	38.0	29.1	25.1
Imports	33.0	23.1	23.1
OECD:			
Exports	37.7	28.8	25.2
Imports	34.8	25.7	22.9
EEC:			
Exports	38.3	29.1	25.8
Imports	36.1	25.4	23.0
NIC:			
Exports	38.3	29.1	25.3
Imports	43.7	30.5	28.0
Caribbean Basin:			
Exports	38.8	29.8	24.8
Imports	28.3	17.8	19.8
South America:			
Exports	37.0	28.7	24.1
Imports	31.1	20.1	17.3
LDC:			
Exports	38.3	29.4	24.6
Imports	32.6	21.9	23.6
NME:			
Exports	40.5	29.9	26.6
Imports	39.1	29.6	26.4
OPEC:			
Exports	37.9	29.1	24.7
Imports	17.0	8.3	10.7
Pacific Rim:			
Exports	39.2	29.8	25.7
Imports	41.9	31.2	30.2
Canada:			
Exports	36.6	28.3	24.3
Imports	32.2	23.7	21.0
Mexico:			
Exports	37.8	28.9	25.1
Imports	35.2	19.8	18.6

Table 37.--Labor intensities of U.S. trade with selected trading partners, 1978, 1981 and 1984--Continued

(In thousands of work-years per billion dollars)

Trading partner and type of trade	1978	1981	1984
Brazil:			
Exports	36.1	28.2	24.5
Imports	40.6	29.1	25.3
Venezuela:			
Exports	37.6	29.1	24.4
Imports	16.8	8.5	10.1
Argentina:			
Exports	36.6	28.3	23.9
Imports	39.2	24.8	21.9
Japan:			
Exports	38.5	29.4	25.5
Imports	36.5	28.6	24.8
Hong Kong:			
Exports	40.2	30.2	26.6
Imports	51.6	39.8	35.3
Korea:			
Exports	39.3	29.7	25.4
Imports	48.1	37.4	33.1
Taiwan:			
Exports	39.4	29.3	25.1
Imports	46.5	36.6	32.1
PRC:			
Exports	40.0	29.6	25.7
Imports	45.6	31.9	30.1
Singapore:			
Exports	40.1	29.6	25.4
Imports	43.2	34.4	29.8
Philippines:			
Exports	39.2	31.2	27.3
Imports	44.9	36.5	31.9
United Kingdom:			
Exports	38.7	29.6	26.3
Imports	34.4	20.3	19.8
Italy:			
Exports	38.1	28.8	25.1
Imports	40.8	30.5	27.4

Table 37.--Labor intensities of U.S. trade with selected trading partners, 1978, 1981 and 1984--Continued

(In thousands of work-years per billion dollars)

Trading partner and type of trade	1978	1981	1984
France:			
Exports	38.4	29.3	25.6
Imports	37.0	27.6	23.8
West Germany:			
Exports	39.0	30.3	26.5
Imports	34.7	27.0	23.0
Netherlands:			
Exports	38.0	28.1	25.6
Imports	34.8	22.8	20.5
Australia:			
Exports	37.6	29.0	25.1
Imports	36.2	27.6	23.1
Israel:			
Exports	39.4	30.3	25.7
Imports	42.1	29.6	27.2
South Africa:			
Exports	37.3	28.6	25.5
Imports	36.0	26.7	24.7

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Table 38.--Labor intensities of U.S. manufacturing trade with selected trading partners, 1978, 1981 and 1984

(In thousands of work-years per billion dollars)

Trading partner and type of trade	1978	1981	1984
World:			
Exports	38.1	29.6	25.4
Imports	38.6	30.1	26.3
OECD:			
Exports	37.9	29.6	25.4
Imports	36.3	28.2	24.3
EEC:			
Exports	38.7	30.0	26.2
Imports	37.0	28.2	24.7
NIC:			
Exports	38.6	29.6	25.7
Imports	46.2	35.6	31.1
Caribbean Basin:			
Exports	38.3	29.8	26.2
Imports	42.3	32.5	29.6
South America:			
Exports	36.7	28.5	24.3
Imports	40.2	29.6	26.5
LDC:			
Exports	38.1	29.5	24.8
Imports	40.9	32.1	29.2
NME Countries:			
Exports	47.7	33.4	27.7
Imports	41.2	34.0	32.0
OPEC:			
Exports	37.2	28.7	24.3
Imports	40.3	30.7	28.6
Pacific Rim:			
Exports	39.3	30.3	26.0
Imports	46.1	34.9	32.5
Canada:			
Exports	36.4	28.6	24.2
Imports	35.1	27.5	23.1
Mexico:			
Exports	37.8	29.0	25.4
Imports	41.3	32.1	26.0

Table 38.--Labor intensities of U.S. manufacturing trade with selected trading partners, 1978, 1981 and 1984--Continued

(In thousands of work-years per billion dollars)

Trading partner and type of trade	1978	1981	1984
Brazil:			
Exports	36.5	28.5	25.5
Imports	41.0	30.7	27.0
Venezuela:			
Exports	36.8	28.6	24.1
Imports	37.7	26.6	23.6
Argentina:			
Exports	36.6	28.8	24.4
Imports	40.2	28.3	25.0
Japan:			
Exports	39.8	31.5	26.5
Imports	36.5	28.6	24.8
Hong Kong:			
Exports	40.2	30.1	26.9
Imports	51.6	39.8	35.4
Korea:			
Exports	40.6	32.0	25.9
Imports	48.1	37.5	33.1
Taiwan:			
Exports	40.3	30.4	26.4
Imports	46.5	36.6	32.2
China (PRC):			
Exports	44.8	30.8	25.0
Imports	46.2	37.2	35.4
Singapore:			
Exports	39.4	30.1	25.4
Imports	47.0	36.3	31.1
Philippines:			
Exports	39.3	31.7	27.4
Imports	45.3	37.3	32.2
United Kingdom:			
Exports	38.5	29.6	26.4
Imports	37.0	28.3	24.5
Italy:			
Exports	40.0	31.3	26.7
Imports	42.1	31.2	28.6

Table 38.--Labor intensities of U.S. manufacturing trade with selected trading partners, 1978, 1981 and 1984--Continued

(In thousands of work-years per billion dollars)

Trading partner and type of trade	1978	1981	1984
France:			
Exports	38.4	30.0	25.8
Imports	37.2	27.8	24.0
West Germany:			
Exports	38.9	30.7	26.2
Imports	34.9	27.0	23.0
Netherlands:			
Exports	39.8	30.8	26.9
Imports	35.3	27.4	25.1
Australia:			
Exports	37.0	28.5	24.9
Imports	36.7	28.3	25.1
Israel:			
Exports	39.8	30.6	25.5
Imports	43.0	30.4	27.6
South Africa:			
Exports	36.7	28.4	25.2
Imports	33.3	25.4	23.8

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Appendix A

1985 Projections for Trade-Related Employment

The projections for trade-related employment in 1985 contained in this appendix are constructed from estimates of what trade flows and labor productivity will be in 1985. U.S. imports and exports in 1985 were projected from the average annual rate of imports and exports for the first three quarters of 1985. The annual rate was calculated by assuming that the data for the first three quarters in 1985 will bear the same relation to the 1985 total as was the case in 1984.

Projections for labor productivities in 1985 were more complex. For each of the 79 industry sectors used in the study, we estimated an equation of the form

$$(L/O)_{i,t} = bT + cY_t + U_{it}$$

where L/O is the ratio of labor to output, T is a trend variable for time, Y is national income, and U is a disturbance term. The subscript i refers to the industry sector and the subscript t refers to the time period. All variables in the regression were measured in nominal dollars and all were transformed to logarithms. The labor-output ratios in 1985 were then calculated using the equation

$$(L/O)_{i,1985} = (L/O)_{i,1984} + b + c(Y_{1985} - Y_{1984})$$

where Y_{1985} was obtained from projections by Data Resources, Incorporated.

A second regression was also run in which all the variables were expressed in terms of constant (real) dollars. Together, the projected ratio of labor to nominal output and the projected ratio of labor to real output were used to obtain projected deflators for 1985. The projected trade flows, labor-output ratios, and deflators were then used to project trade-related employment in 1985 in the manner described in appendix D. Table 1A below presents the projected imports and exports for 1985. Table 2A presents the projected labor-output ratios (both for real output and nominal output) and the projected deflators for 1985.

Table 3A presents the projected trade-related employment for 1985. Results are presented only for total world trade. These results show that, compared with that in 1984, the total labor content of exports declined by 4.6 percent, the total labor content of imports increased by 0.6 percent, and the deficit in trade-related employment grew by 7.5 percent. The pattern of industry effects was similar to that in 1984, except that the surplus in Other agricultural products declined substantially owing to a large drop in exports.

Table A-1.--Labor content of U.S. trade with the world, 1985--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1985				
1	Livestock and livestock products	5	9	44	74	-30
2	Other agricultural products	272	146	339	252	87
3	Forestry and fishery products	1	8	14	30	-15
4	Agricultural, forestry, and fishery services	0	0	51	55	-4
5	Iron and ferroalloy ores mining	2	3	7	15	-8
6	Nonferrous metal ores mining	3	12	19	41	-22
7	Coal mining	23	1	40	27	12
8	Crude petroleum and natural gas	1	9	46	156	-110
9	Stone and clay mining and quarrying	3	9	11	25	-14
10	Chemical and fertilizer mineral mining	1	5	4	9	-5
11	New construction	0	0	0	0	0
12	Maintenance and repair construction	0	0	55	99	-44
13	Ordnance and accessories	12	2	13	3	10
14	Food and kindred products	46	82	71	125	-55
15	Tobacco manufactures	4	0	5	0	4
16	Broad and narrow fabrics, yarn and thread mills	10	30	35	168	-133
17	Miscellaneous textile goods and floor coverings	5	10	12	27	-16
18	Apparel	17	399	26	512	-486
19	Miscellaneous fabricated textile products	6	18	16	54	-38
20	Lumber and wood products, except containers	46	61	88	134	-46
21	Wood containers	1	3	4	7	-3
22	Household furniture	4	50	7	54	-47
23	Other furniture and fixtures	4	9	5	12	-7
24	Paper and allied products, except containers	21	45	52	97	-45
25	Paperboard containers and boxes	0	1	18	35	-16
26	Printing and publishing	15	16	35	43	-8
27	Chemicals and selected chemical products	66	50	153	177	-23
28	Plastics and synthetic materials	19	8	40	59	-18
29	Drugs, cleaning and toilet preparations	18	15	22	22	-0
30	Paints and allied products	1	1	5	8	-3
31	Petroleum refining and related industries	5	50	15	68	-53
32	Rubber and miscellaneous plastic products	30	65	106	207	-102
33	Leather tanning and finishing	3	4	4	24	-20
34	Footwear and other leather products	5	190	7	200	-194
35	Glass and glass products	9	18	24	49	-25
36	Stone and clay products	9	38	29	76	-47
37	Primary iron and steel manufacturing	13	79	106	262	-156
38	Primary nonferrous metals manufacturing	29	63	111	202	-91
39	Metal containers	1	2	6	10	-5
40	Heating, plumbing, and structural metal products	10	11	27	33	-6
41	Screw machine products and stampings	3	11	46	105	-59
42	Other fabricated metal products	15	58	62	146	-84
43	Engines and turbines	35	2	49	20	28
44	Farm and garden machinery	8	14	10	17	-7
45	Construction and mining machinery	34	17	41	26	15
46	Materials handling machinery and equipment	8	19	10	23	-12
47	Metalworking machinery and equipment	31	48	54	82	-28
48	Special industry machinery and equipment	19	36	26	47	-21

104

Table A-1.--Labor content of U.S. trade with the world, 1985--Continued

(In thousands of work-years)

Input-output sector	Description	Direct labor content		Total labor content		
		Exports	Imports	Exports	Imports	Net
		1985				
49	General machinery and equipment	28	40	51	74	-23
50	Miscellaneous machinery, except electrical	35	0	72	57	15
51	Office, computing, and accounting machines	184	140	219	168	51
52	Service industries machines	15	3	20	15	5
53	Electric industrial equipment and apparatus	50	44	97	104	-7
54	Household appliances	8	31	9	32	-23
55	Electric lighting and wiring equipment	11	19	18	33	-15
56	Radio, TV, and communication equipment	62	138	76	156	-79
57	Electronic components and accessories	81	121	167	228	-61
58	Misc. electrical machinery and supplies	28	38	38	58	-20
59	Motor vehicles and equipment	81	300	116	418	-301
60	Aircraft and parts	151	48	185	61	124
61	Other transportation equipment	25	27	28	31	-3
62	Scientific and controlling instruments	84	59	95	73	22
63	Optical, ophthalmic, and photographic equipment	19	42	23	48	-24
64	Miscellaneous manufacturing	116	341	129	376	-247
65	Transportation and warehousing	82	0	267	299	-32
66	Communications, except radio and TV	0	0	21	31	-9
67	Radio and TV broadcasting	0	0	0	0	-0
68	Electric, gas, water, and sanitary services	0	0	54	93	-38
69	Wholesale and retail trade	504	0	935	740	195
70	Finance and insurance	0	0	99	146	-47
71	Real estate and rental	0	0	22	33	-11
72	Hotels, personal and repair services exc. auto	0	13	87	128	-41
73	Business services	0	0	293	428	-134
74	Eating and drinking places	0	0	111	147	-36
75	Automobile repair and services	0	0	28	40	-13
76	Amusements	0	1	10	14	-4
77	Medical, educ. services and nonprofit org.	0	7	19	37	-19
78	Federal Government enterprises	0	13	24	51	-28
79	State and local government enterprises	0	0	2	4	-2
80	Noncomparable imports	0	0	0	0	0
81	Scrap, used, and secondhand goods	0	0	0	0	0
	Total	2,436	3,155	5,285	8,039	-2,754

Source: Compiled from official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

105

Table A-2.--Ratios of employment to nominal and real output, 1984 and 1985 1/, and 1985 output deflators, by two-digit input-output sectors

(thousands of jobs per million dollars)

Input-output sector	Description	Labor-output ratios: Nominal 1984	Nominal 1985	Real 1984	Real 1985	Output deflator 1985
1	Livestock and livestock products	0.0108	0.0101	0.0155	0.0148	147.1
2	Other agricultural products	0.0183	0.0168	0.0266	0.0262	155.8
3	Forestry and fishery products	0.0089	0.0084	0.0178	0.0182	215.6
4	Agricultural, forestry, and fishery services	0.0316	0.0307	0.0592	0.0605	196.8
5	Iron and ferroalloy ores mining	0.0048	0.0046	0.0079	0.0080	174.3
6	Nonferrous metal ores mining	0.0128	0.0121	0.0166	0.0166	137.6
7	Coal mining	0.0066	0.0061	0.0093	0.0094	152.7
8	Crude petroleum and natural gas	0.0022	0.0021	0.0060	0.0063	300.1
9	Stone and clay mining and quarrying	0.0120	0.0115	0.0202	0.0203	176.5
10	Chemical and fertilizer mineral mining	0.0053	0.0050	0.0082	0.0084	166.1
11	New construction	0.0135	0.0131	0.0221	0.0227	173.3
12	Maintenance and repair construction	0.0091	0.0088	0.0153	0.0156	177.1
13	Ordnance and accessories	0.0090	0.0086	0.0182	0.0184	214.4
14	Food and kindred products	0.0052	0.0050	0.0077	0.0075	149.2
15	Tobacco manufactures	0.0029	0.0029	0.0057	0.0056	195.5
16	Broad and narrow fabrics, yarn and thread mills	0.0107	0.0104	0.0156	0.0153	146.9
17	Miscellaneous textile goods and floor coverings	0.0097	0.0093	0.0128	0.0123	132.6
18	Apparel	0.0232	0.0224	0.0316	0.0309	137.6
19	Miscellaneous fabricated textile products	0.0191	0.0183	0.0253	0.0249	136.3
20	Lumber and wood products, except containers	0.0120	0.0113	0.0149	0.0145	128.0
21	Wood containers	0.0290	0.0282	0.0371	0.0370	131.6
22	Household furniture	0.0166	0.0162	0.0249	0.0243	149.6
23	Other furniture and fixtures	0.0148	0.0142	0.0236	0.0234	164.3
24	Paper and allied products, except containers	0.0060	0.0058	0.0101	0.0099	169.7
25	Paperboard containers and boxes	0.0087	0.0086	0.0142	0.0139	162.6
26	Printing and publishing	0.0135	0.0131	0.0221	0.0219	167.3
27	Chemicals and selected chemical products	0.0059	0.0057	0.0084	0.0083	147.0
28	Plastics and synthetic materials	0.0048	0.0047	0.0075	0.0072	151.8
29	Drugs, cleaning and toilet preparations	0.0063	0.0061	0.0103	0.0102	166.9
30	Paints and allied products	0.0065	0.0063	0.0097	0.0095	151.1
31	Petroleum refining and related industries	0.0010	0.0010	0.0021	0.0021	208.9
32	Rubber and miscellaneous plastic products	0.0119	0.0117	0.0173	0.0173	148.0
33	Leather tanning and finishing	0.0098	0.0096	0.0164	0.0164	170.8
34	Footwear and other leather products	0.0243	0.0236	0.0371	0.0367	155.1
35	Glass and glass products	0.0133	0.0129	0.0202	0.0200	155.7
36	Stone and clay products	0.0110	0.0107	0.0176	0.0175	163.3
37	Primary iron and steel manufacturing	0.0065	0.0063	0.0102	0.0102	160.3
38	Primary nonferrous metals manufacturing	0.0067	0.0063	0.0087	0.0087	137.1
39	Metal containers	0.0053	0.0051	0.0084	0.0083	161.2
40	Heating, plumbing, and structural metal products	0.0142	0.0138	0.0212	0.0213	154.4
41	Screw machine products and stampings	0.0111	0.0108	0.0162	0.0161	149.5
42	Other fabricated metal products	0.0116	0.0113	0.0177	0.0176	155.8
43	Engines and turbines	0.0086	0.0082	0.0150	0.0150	183.9
44	Farm and garden machinery	0.0082	0.0078	0.0139	0.0138	176.0
45	Construction and mining machinery	0.0071	0.0069	0.0125	0.0125	181.7
46	Materials handling machinery and equipment	0.0138	0.0132	0.0203	0.0205	154.8
47	Metalworking machinery and equipment	0.0134	0.0129	0.0222	0.0223	172.5
48	Special industry machinery and equipment	0.0119	0.0113	0.0204	0.0208	183.5

106

Table A-2.--Ratios of employment to nominal and real output, 1984 and 1985 1/, and 1985 output deflators, by two-digit input-output sectors--Continued

(thousands of jobs per million dollars)

Input-output sector	Description	Labor-output ratios				Output deflator 1985
		Nominal		Real		
		1984	1985	1984	1985	
49	General machinery and equipment	0.0103	0.0100	0.0165	0.0164	165.0
50	Miscellaneous machinery, except electrical	0.0161	0.0155	0.0275	0.0274	176.4
51	Office, computing, and accounting machines	0.0121	0.0117	0.0118	0.0109	93.5
52	Service industries machines	0.0100	0.0095	0.0147	0.0145	152.5
53	Electric industrial equipment and apparatus	0.0151	0.0147	0.0245	0.0244	166.2
54	Household appliances	0.0094	0.0092	0.0137	0.0134	145.2
55	Electric lighting and wiring equipment	0.0112	0.0112	0.0208	0.0206	184.1
56	Radio, TV, and communication equipment	0.0105	0.0100	0.0133	0.0127	126.6
57	Electronic components and accessories	0.0145	0.0141	0.0185	0.0174	123.6
58	Misc. electrical machinery and supplies	0.0116	0.0110	0.0172	0.0170	155.0
59	Motor vehicles and equipment	0.0050	0.0049	0.0080	0.0080	163.9
60	Aircraft and parts	0.0089	0.0087	0.0173	0.0172	198.7
61	Other transportation equipment	0.0111	0.0106	0.0173	0.0173	162.9
62	Scientific and controlling instruments	0.0171	0.0165	0.0254	0.0251	151.6
63	Optical, ophthalmic, and photographic equipment	0.0099	0.0093	0.0140	0.0135	145.0
64	Miscellaneous manufacturing	0.0162	0.0156	0.0242	0.0240	153.6
65	Transportation and warehousing	0.0130	0.0125	0.0252	0.0250	200.3
66	Communications, except radio and TV	0.0106	0.0101	0.0144	0.0137	135.8
67	Radio and TV broadcasting	0.0133	0.0130	0.0249	0.0252	192.9
68	Electric, gas, water, and sanitary services	0.0035	0.0034	0.0075	0.0075	223.4
69	Wholesale and retail trade	0.0262	0.0250	0.0386	0.0383	153.6
70	Finance and insurance	0.0178	0.0171	0.0312	0.0310	181.9
71	Real estate and rental	0.0025	0.0024	0.0041	0.0040	170.1
72	Hotels, personal and repair services exc. auto	0.0428	0.0405	0.0777	0.0783	193.4
73	Business services	0.0192	0.0182	0.0307	0.0307	168.7
74	Eating and drinking places	0.0316	0.0313	0.0526	0.0539	172.6
75	Automobile repair and services	0.0124	0.0120	0.0208	0.0212	177.3
76	Amusements	0.0228	0.0220	0.0356	0.0349	158.3
77	Medical, educ. services and nonprofit org.	0.0299	0.0285	0.0535	0.0532	186.6
78	Federal Government enterprises	0.0255	0.0241	0.0369	0.0357	148.1
79	State and local government enterprises	0.0143	0.0141	0.0249	0.0250	177.1

Source: Computed from official statistics of the U.S. Bureau of Labor Statistics.

1/ 1985 labor-output ratios and industry deflators are based on 1985 estimates for industry-by-industry employment and output. The technique used to estimate these data is described in the text of this appendix.

107

Table A-3.--Results of regressions estimating labor-output ratios

Input-output sector	Description	Equations for nominal labor-output: Estimated labor-output ratio 1/	Std. error of eqtn. (SEE) 2/	Sample labor-output mean 3/	Coefficient of variation 4/	Equations for real labor-output: Estimated labor-output ratio 1/	Std. error of eqtn. (SEE) 2/	Sample labor-output mean 3/	Coefficient of variation 4/
1	Livestock and livestock products	0.010	0.103	-3.3	0.032	0.015	0.050	-3.6	0.014
2	Other agricultural products	0.017	0.132	-3.0	0.045	0.026	0.069	-3.3	0.021
3	Forestry and fishery products	0.008	0.133	-3.4	0.039	0.018	0.147	-4.2	0.035
4	Agricultural, forestry, and fishery services	0.031	0.054	-2.6	0.020	0.060	0.070	-3.0	0.023
5	Iron and ferroalloy ores mining	0.005	0.113	-4.0	0.028	0.008	0.119	-4.5	0.026
6	Nonferrous metal ores mining	0.012	0.087	-3.6	0.024	0.017	0.095	-3.9	0.024
7	Coal mining	0.006	0.107	-3.6	0.029	0.009	0.149	-4.4	0.034
8	Crude petroleum and natural gas	0.002	0.114	-5.0	0.023	0.006	0.167	-5.5	0.030
9	Stone and clay mining and quarrying	0.012	0.039	-3.5	0.011	0.020	0.042	-3.8	0.011
10	Chemical and fertilizer mineral mining	0.005	0.140	-4.1	0.034	0.008	0.113	-4.5	0.025
11	New construction	0.013	0.031	-3.6	0.009	0.023	0.067	-3.9	0.017
12	Maintenance and repair construction	0.009	0.050	-3.8	0.013	0.016	0.063	-4.2	0.015
13	Ordnance and accessories	0.009	0.140	-3.8	0.037	0.018	0.146	-4.0	0.036
14	Food and kindred products	0.005	0.061	-4.2	0.014	0.007	0.017	-4.5	0.004
15	Tobacco manufactures	0.003	0.058	-4.8	0.012	0.006	0.049	-5.0	0.010
16	Broad and narrow fabrics, yarn and thread mills	0.010	0.057	-3.5	0.016	0.015	0.059	-3.8	0.016
17	Miscellaneous textile goods and floor coverings	0.009	0.054	-3.8	0.014	0.012	0.056	-3.9	0.014
18	Apparel	0.022	0.029	-3.0	0.010	0.031	0.030	-3.2	0.009
19	Miscellaneous fabricated textile products	0.018	0.058	-3.3	0.018	0.025	0.079	-3.5	0.023
20	Lumber and wood products, except containers	0.011	0.079	-3.3	0.024	0.014	0.057	-3.8	0.015
21	Wood containers	0.028	0.081	-2.9	0.028	0.037	0.088	-3.2	0.027
22	Household furniture	0.016	0.049	-3.1	0.016	0.024	0.045	-3.3	0.013
23	Other furniture and fixtures	0.014	0.025	-3.2	0.008	0.023	0.031	-3.5	0.009
24	Paper and allied products, except containers	0.006	0.064	-3.9	0.016	0.010	0.027	-4.2	0.006
25	Paperboard containers and boxes	0.009	0.054	-3.7	0.015	0.014	0.030	-3.9	0.008
26	Printing and publishing	0.013	0.028	-3.3	0.008	0.022	0.020	-3.6	0.005
27	Chemicals and selected chemical products	0.006	0.109	-4.2	0.026	0.008	0.058	-4.5	0.013
28	Plastics and synthetic materials	0.005	0.071	-4.0	0.018	0.007	0.060	-4.2	0.014
29	Drugs, cleaning and toilet preparations	0.006	0.038	-4.1	0.009	0.010	0.046	-4.3	0.011
30	Paints and allied products	0.006	0.060	-4.1	0.015	0.010	0.045	-4.4	0.010
31	Petroleum refining and related industries	0.001	0.151	-5.4	0.028	0.002	0.062	-5.9	0.010
32	Rubber and miscellaneous plastic products	0.012	0.050	-3.7	0.014	0.017	0.053	-4.0	0.013
33	Leather tanning and finishing	0.010	0.076	-3.8	0.020	0.016	0.072	-4.1	0.018
34	Footwear and other leather products	0.024	0.030	-2.9	0.010	0.037	0.027	-3.1	0.009
35	Glass and glass products	0.013	0.038	-3.4	0.011	0.020	0.026	-3.7	0.007
36	Stone and clay products	0.011	0.046	-3.5	0.013	0.017	0.031	-3.8	0.008
37	Primary iron and steel manufacturing	0.006	0.089	-3.9	0.023	0.010	0.079	-4.3	0.018
38	Primary nonferrous metals manufacturing	0.006	0.084	-4.2	0.020	0.009	0.045	-4.5	0.010
39	Metal containers	0.005	0.066	-4.1	0.016	0.008	0.027	-4.5	0.006
40	Heating, plumbing, and structural metal products	0.014	0.038	-3.5	0.011	0.021	0.027	-3.8	0.007
41	Screw machine products and stampings	0.011	0.064	-3.6	0.018	0.016	0.046	-3.9	0.012
42	Other fabricated metal products	0.011	0.039	-3.5	0.011	0.018	0.029	-3.8	0.008
43	Engines and turbines	0.008	0.070	-3.8	0.018	0.015	0.074	-4.2	0.018
44	Farm and garden machinery	0.008	0.062	-3.7	0.017	0.014	0.065	-4.0	0.016
45	Construction and mining machinery	0.007	0.065	-3.8	0.017	0.012	0.060	-4.2	0.014
46	Materials handling machinery and equipment	0.013	0.063	-3.5	0.018	0.020	0.036	-3.8	0.009
47	Metalworking machinery and equipment	0.013	0.047	-3.3	0.014	0.022	0.043	-3.6	0.012

108

Table A-3.--Results of regressions--Continued estimating Labor-output ratios

Input-output sector	Description	Equations for nominal labor-output: Estimated labor-output ratio 1/	Std. error of eqtn. (SEE) 2/	Sample labor-output mean 3/	Coefficient of variation 4/	Equations for real labor-output: Estimated labor-output ratio 1/	Std. error of eqtn. (SEE) 2/	Sample labor-output mean 3/	Coefficient of variation 4/
48	Special industry machinery and equipment	0.011	0.057	-3.5	0.016	0.021	0.079	-3.8	0.021
49	General machinery and equipment	0.010	0.053	-3.5	0.015	0.016	0.047	-3.9	0.012
50	Miscellaneous machinery, except electrical	0.016	0.048	-3.1	0.016	0.027	0.046	-3.4	0.014
51	Office, computing, and accounting machines	0.012	0.069	-3.5	0.020	0.011	0.111	-3.5	0.031
52	Service industries machines	0.010	0.050	-3.8	0.013	0.015	0.055	-4.0	0.014
53	Electric industrial equipment and apparatus	0.015	0.033	-3.3	0.010	0.024	0.029	-3.6	0.008
54	Household appliances	0.009	0.061	-3.7	0.017	0.013	0.043	-3.9	0.011
55	Electric lighting and wiring equipment	0.011	0.080	-3.4	0.024	0.021	0.051	-3.7	0.014
56	Radio, TV, and communication equipment	0.010	0.061	-3.5	0.018	0.013	0.076	-3.6	0.021
57	Electronic components and accessories	0.014	0.053	-3.2	0.017	0.017	0.074	-3.2	0.023
58	Misc. electrical machinery and supplies	0.011	0.049	-3.5	0.014	0.017	0.053	-3.8	0.014
59	Motor vehicles and equipment	0.005	0.081	-4.3	0.019	0.008	0.074	-4.5	0.016
60	Aircraft and parts	0.009	0.061	-3.6	0.017	0.017	0.040	-3.9	0.010
61	Other transportation equipment	0.011	0.046	-3.6	0.013	0.017	0.052	-3.9	0.013
62	Scientific and controlling instruments	0.017	0.051	-3.2	0.016	0.025	0.051	-3.4	0.015
63	Optical, ophthalmic, and photographic equipment	0.009	0.063	-3.6	0.018	0.013	0.059	-3.7	0.016
64	Miscellaneous manufacturing	0.016	0.043	-3.3	0.013	0.024	0.036	-3.5	0.010
65	Transportation and warehousing	0.012	0.021	-3.3	0.006	0.025	0.031	-3.6	0.009
66	Communications, except radio and TV	0.010	0.058	-3.5	0.017	0.014	0.039	-3.6	0.011
67	Radio and TV broadcasting	0.013	0.055	-3.5	0.016	0.025	0.066	-3.9	0.017
68	Electric, gas, water, and sanitary services	0.003	0.072	-4.3	0.017	0.007	0.049	-4.7	0.010
69	Wholesale and retail trade	0.025	0.015	-2.8	0.005	0.038	0.026	-3.0	0.009
70	Finance and insurance	0.017	0.040	-3.1	0.013	0.031	0.044	-3.4	0.013
71	Real estate and rental	0.002	0.050	-5.1	0.010	0.004	0.054	-5.3	0.010
72	Hotels, personal and repair services exc. auto	0.040	0.026	-2.3	0.011	0.078	0.050	-2.6	0.019
73	Business services	0.018	0.036	-3.0	0.012	0.031	0.035	-3.4	0.010
74	Eating and drinking places	0.031	0.051	-2.8	0.018	0.054	0.048	-3.2	0.015
75	Automobile repair and services	0.012	0.047	-3.7	0.013	0.021	0.048	-4.1	0.012
76	Amusements	0.022	0.049	-2.8	0.017	0.035	0.042	-3.1	0.014
77	Medical, educ. services and nonprofit org.	0.029	0.025	-2.5	0.010	0.053	0.019	-2.9	0.007
78	Federal Government enterprises	0.024	0.057	-2.5	0.023	0.036	0.038	-3.0	0.013
79	State and local government enterprises	0.014	0.053	-3.3	0.016	0.025	0.038	-3.7	0.010

1/ The technique used to estimate 1985 labor-output ratios is described in the text of this appendix.
2/ The standard error of the equation is the estimated standard deviation of the disturbance term.
3/ This is the mean of the dependent variable, the natural logarithm of the labor-output ratio.
4/ This statistic shows the degree of variability of the error term for each equation, relative to the mean value of the dependent variable: it is the absolute value of the ratio of the standard error of the equation (SEE) to the mean of the dependent variable.

109

Appendix B

Country Group Descriptions

OECD Countries

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom.

EC Countries

Belgium, Denmark, France, Federal Republic of Germany, Greece, Irish Republic, Italy, Luxembourg, Netherlands, United Kingdom.

Newly Industrializing Countries

Argentina, Brazil, Hong Kong, Israel, the Republic of Korea, Mexico, Singapore, Taiwan, Yugoslavia.

Pacific Rim Countries

Australia, Brunei, Hong Kong, Indonesia, Kampuchea (Cambodia), Malaysia, Macao, North Korea, New Zealand, Philippines, Papua New Guinea, Singapore, South Korea, Southern Pacific Islands, Thailand, Taiwan, Vietnam, Western Samoa, French Pacific Islands, Pacific Trust Territory, Other Pacific Isles, n.e.s.

South American Countries

Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, French Guiana, Falkland Islands, Guyana, Peru, Paraguay, Suriname, Uruguay, Venezuela.

Caribbean Basin Countries

Belize, Bahamas, Barbados, Costa Rica, Cayman Islands, Dominican Republic, El Salvador, Guatemala, Guyana, Honduras, Haiti, Jamaica, Leeward & Windward Islands, Nicaragua, Netherlands Antilles, Panama, Suriname, Turks and Caicos Islands, Trinidad and Tobago.

Less Developed Countries (LDCs)

Angola, Antigua, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Benin, Bhutan, Bolivia, Botswana, Burma, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Chile, Colombia, Comoros, Congo, Costa Rica, Cyprus, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Figi, Gambia, Ghana, Grenada, Guinea Bissau, Guyana, Haiti, Honduras, India, Indonesia, Ivory Coast, Jamaica, Jordan, Kenya, Kiribati, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Morocco, Mozambique, Nauru, Nepal, Nicaragua, Niger, Nigeria, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Portugal, Romania, Rwanda, Saint Lucia, Saint Vincent and Grenadine, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Solomon Islands, Somalia, Sri Lanka, Sudan, Suriname, Swaziland, Syria, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Tuvalu, Uganda, Upper Volta, Uruguay, Vanuatu, Venezuela, Western Samoa, Yemen (Sana), Zaire, Zambia, Zimbabwe.

Nonmarket Economy Countries

Albania, Bulgaria, China, Cuba, Czechoslovakia, East Germany, Hungary, Mongolia, Korea, Poland, Romania, Union of Soviet Socialists Republic, Vietnam.

Organization of Petroleum Exporting Countries

Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirate, Venezuela.

Appendix C

Substitution Between Imports and Domestic Output

It is sometimes argued that imports generally are lower priced than domestic output of comparable quantity and quality, 1/ and, therefore, that estimates of the labor content of imports such as those contained in this report significantly understate the job content of imports. According to this view, quantity measures, rather than dollar measures, should be used to calculate employment related to imports. That is, instead of measuring the labor in U.S. output required to replace the dollar amount of imports in a sector, one should measure the labor in U.S. output required to replace the quantity of imports in the sector

What follows is an attempt to show how the labor content estimates would be changed if they were based on quantity instead of value of imports.

Apparel

One sector where the dollar-for-dollar assumption appears to be least appropriate is Apparel (IO 18). The International Ladies Garment Workers' Union has done research to obtain dollar values of imports that are equivalent to comparable domestic output. 2/ They first compared prices of imports with prices of the domestic substitute for disaggregate classifications of apparel, adjusting for quality differences. They then derived the following conversion factors to be multiplied with the value of imports to obtain comparable domestic value: 3/

Year	Conversion factor
1978	2.823
1979	2.826
1980	3.019
1981	3.196
1982	3.456
1983	3.162 4/
1984	3.240 4/

These conversion factors multiplied with the direct labor content of imports estimates in this study would tend to overstate the job content of these

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1/ This claim is usually made for prices of imports and competing domestic output prior to wholesale and retail mark-ups. Presumably, goods of equal quality tend to sell at the same price at the retail level.

2/ International Ladies' Garment Workers' Unions, op. cit. The I.L.G.W.U. definition of apparel differs slightly from the one used in this report. They define Apparel to include the following standard Industrial Classifications (SICs): 2251, 2252, 2253, 2254, 2311, 2321, 2322, 2323, 2327, 2328, 2329, 2331, 2335, 2339, 2341, 2342, 2351, 2353, 2361, 2363, 2369, 2381, 2384, 2385, and 2389. In this report, Apparel includes SIC's 2251 through 2254, 2257 through 2259, and 231 through 238.

3/ The International Ladies' Garment Workers' Union also points out that Commerce Department data on the value of shipments in Apparel are overstated by about 2 percent, because these data include resales. This overstatement causes the domestic labor-output ratio to be understated, so that the jobs related to imports are also understated if they are obtained from this ratio.

4/ Provisional estimates.

imports, even given the assumption that imports and domestic output substitute on a unit-for-unit basis. This is true, because the International Ladies' Garment Workers' Union uses the foreign value of the imports to construct the import prices, whereas the value of imports in the present study includes international transportation and insurance costs, as well as tariff duties collected: Nevertheless, their methodology indicates a direct labor content of imports for apparel more than double the one presented in table 3.

Other Sectors

Extensive resources would be required to perform calculations for other industries that are comparable with the International Ladies' Garment Workers' Union apparel calculations. However, this section does address an issue raised by Dr. Rudy Oswald regarding the effects of the recent dollar appreciation on the labor content of a dollar of imports. 1/ He argued that, even if dollar-for-dollar substitution held in some initial base period, the recent dollar appreciation has greatly reduced import prices, so that the dollar-for-dollar assumption currently significantly understates the labor content of the imports. Two factors could reduce this effect of the dollar appreciation. First, increased import demand could raise foreign prices toward the new U.S. level (in terms of foreign exchange) caused by the dollar appreciation. Second, U.S. import-competing prices could fall as a result of the lower dollar price of imports caused by the dollar appreciation.

One approach to calculating the change in the relative price of imports is to use price indexes for imports and domestic output constructed by the BLS. 2/ The BLS collects import prices for approximately 14,500 products from over 6,000 companies. Import prices are based on U.S. dollar prices paid by the U.S. importer. Prices are collected for March, June, September, and December, and are not seasonally adjusted. For many products, the price series data begin only recently. The BLS also collects domestic producer prices. These prices cover nearly 3,400 commodities and are based on approximately 26,000 quotations. The prices are chosen to represent prices of all commodities produced in manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities. Unfortunately, in some cases, these prices also include import prices. Thus, the BLS indexes for import prices and domestic prices may understate differences in these prices, although the understatement is quite small. Another problem is that it is difficult to use the BLS price indexes to construct comparable indexes of import prices and domestic prices for the input-output categories used in this study. Nevertheless, ratios of domestic price indexes to import price indexes can be constructed for several input-output categories in manufacturing. The resulting index of ratios for each category was set equal to unity in the first year where sufficient data were available to construct the ratio. These ratio indexes do not begin in 1978 in all cases, because import price indexes were not always available in that year. The results are reported in table C-1.

1/ Rudy Oswald, op. cit., p. 8-12.

2/ Although the BLS gathers data on actual prices, it does not release these price data to the public. Instead, the BLS publishes only price indexes.

Table C-1.--Indexes of ratios of domestic price to import price for selected input-output sectors and the U.S. dollar effective exchange rate

(1981=100)

Input-output sector	1978	1979	1980	1981	1982	1983	1984
18 Apparel	98	95	97	100	103	105	100
20 Lumber and wood products, except containers	-	-	-	100	101	97	103
24, 25 Paper and allied products	98	99	100	100	103	109	110
32 Rubber and miscellaneous plastic products	102	102	98	100	102	105	106
47 Metalworking machinery and equipment	85	85	88	100	108	110	118
48 Special industry machinery and equipment	-	-	-	100	104	107	114
49 General machinery and equipment	-	-	-	100	107	111	115
50 Miscellaneous machinery, except electrical	-	-	88	100	107	112	117
53 Electric industrial equipment and apparatus	-	-	-	100	104	109	112
54 Household appliances	90	90	93	100	113	128	134
Index of the U.S. dollar effective exchange rate	91	89	89	100	112	118	128

Source: Effective exchange rate, International Financial Statistics, ratios of price indexes, calculated from official statistics of the U.S. Bureau of Labor Statistics.

In only three of the above sectors, Metalworking machinery and equipment (IO 47), Miscellaneous machinery, except electrical (IO 50), and Household appliances (IO 54), did the recent large dollar appreciations appear to significantly affect the ratio of domestic to import prices. In most cases, adjustments of domestic dollar prices and of import prices in terms of foreign exchange apparently have offset the large bulk of the initial price effects of the dollar appreciations.

Appendix D

Calculating the Labor Content of U.S. Trade--the Equations

The total labor content of U.S. imports or exports is the sum of the direct labor content and the indirect labor content. The indirect labor content is the labor content of the intermediate inputs required to produce the imports or exports. The indirect labor content of imports or exports are estimated by first calculating the vector of intermediate inputs needed to produce the imports or exports and then applying labor-output ratios to this vector to get the labor content. The equation for the inputs needed to produce the imports or exports is

$$FI = (I-A)^{-1} V - V \qquad (D1)$$

where FI is a vector (nxl) of inputs needed to produce the imports or exports, I is the identity matrix (nxn), A is the matrix (nxn) of direct requirement coefficients of the input-output table, V is the vector (nxl) of imports or exports, and n is the number of industry categories in the input-output table. The term $(I-A)^{-1}$ is the total requirements input-output table. Thus, $(I-A)^{-1} V$ gives the total output in each industry required to produce V, and $(I-A)^{-1} V - V$ gives the output of intermediate inputs needed to produce V. The labor content of these intermediate inputs is given by the equation

$$FLC = (FI)\ (LO) \qquad (D2)$$

where FLC is a vector (nxl) of indirect labor contents of V and LO is a diagonal matrix (nxn) of labor-output ratios.

The direct labor content of V is given by the equation

$$LC = (V)\ (LO) \qquad (D3)$$

where LC is a vector (nxl). The total labor content of V is given by the equation

$$TLC = FLC + LC, \qquad (D4)$$

where TLC is a vector (nxl).

There is one additional factor to those mentioned so far that must be considered for the case of U.S. exports. The input-output analysis accounts only for the labor inputs embodied in final output at the production site. It does not include the labor embodied in transporting and handling the finished export between the production site and the U.S. port of embarkation. Therefore, the labor involved in this transport and handling was added to the sectors Transportation and warehousing (IO 65) and Wholesale and retail trade (IO 69) for the direct labor contents of exports. In calculating the total labor embodied in exports in each sector, the labor involved in transporting and handling finished exports between the production site and the port of embarkation was reallocated to the sectors where the exports occurred.

Appendix E

Review of Previous Studies

Wassily Leontief's study (1954) was the first to measure the total labor content of traded goods. 1/ Leontief's primary objective was to determine whether U.S. imports were more labor intensive and less capital intensive than U.S. exports. He found that the ratio of capital to labor embodied in imports was higher than that for exports. Most economists expected imports to embody relatively more labor and less capital than exports because they believed that the United States was more competitive in goods that required relatively more capital to produce and less competitive in goods that required relatively more labor to produce.

The BLS has used Leontief's method to estimate the labor force involved in producing exports and the U.S. labor force that would have been required to produce imports. They made estimates for each of the 150 industry sectors of the BLS input-output table. For a number of years they made these estimates in an ongoing exercise, but the effort has been terminated. The BLS published their last estimates of employment related to imports in 1962, 2/ and they published their last estimates of employment related to exports in 1973. 3/

Robert Baldwin compared capital-labor ratios for import competing and export production and used the ratios in regression euations explaining U.S. trade in an effort to find an explanation for Leontief's paradoxical results. 4/ He based his analysis on 1962 U.S. trade data and 1958 capital, labor, and intermediate input data. Although his findings for total U.S. trade were not significantly different from Leontief's, Baldwin did find that the paradox was weakened somewhat when other factors are considered. In particular, he found that the paradox was weakened when skill levels in labor were distinguished, when natural resource industries were omitted (due to the complementary nature of scarce natural resources and physical captal), and when the analysis was limited to selected bilateral trading partners.

More recently, the Bureau of International Labor Affairs (ILAB) used Leontief's method to estimate trade related employment for the years 1965 through 1976. 5/ The ILAB study differs from the earlier BLS studies in that (1) the ILAB study examined only the employment related to U.S. manufacturing trade, whereas the BLS studies examined all merchandise trade, as well as some trade in services; (2) the ILAB study included employment related to noncompetitive imports (imports that have no directly competing domestic substitute), whereas the BLS study included only competitive imports; and (3) the ILAB study used a 367-sector input-output table, whereas the BLS used a 150-sector table. Therefore, the ILAB study provides greater industry detail than the BLS studies.

1/ Wassily Leontief, "Domestic Production and Foreign Trade, the American Capital Position Re-examined," Economia Internazionale, vol. 7 (February 1954) pp. 3-32. Reprinted in Richard E. Caves and Harry G. Johnson, eds. Readings in International Economics (Homewood, Ill.: Richard D. Irwin, 1968), pp. 503-527.

2/ Eva E. Jacobs and Ronald E. Kutscher, "Employment in Relation to U.S. Imports," Monthly Labor Review (July 1962), pp. 771-773.

3/ Donald P. Eldridge and Norman Saunders, "Employment and Exports, 1963-72," Monthly Labor Review (August 1973), pp. 16-27.

4/ Rsobert E. Baldwin, "Determinants of the Commodity Structure of U.S. Trade," American Economic Review, 61 (March 1971): 126-146.

5/ Bureau of International Labor Affairs, "The Impact of Changes in Manufacturing Trade on Sectoral Employment Patterns-Progress Report" in Trade and Employment, National Commission for Manpower Policy, Special Report No. 30, November 1978.

The International Trade Administration (ITA) in the Department of Commerce published a study that contains estimates of the labor content of U.S. exports for the years 1970 through 1980. 1/ They obtained their estimates by adjusting the BLS estimates for earlier years to account for changes in labor productivity and for changes in trade volumes. They provided separate labor content estimates for exports in manufacturing, mining, and agriculture. In a later study, the ITA published estimates of the labor content of U.S. exports for the years 1980 and 1982. 2/ The study gives detailed estimates for 1980 for the 200 sectors of the INFORUM input-output model of the U.S. economy. 3/ For 1982, it gives estimates for manufacturing exports and for four categories of nonmanufacturing exports. The 1982 estimates were obtained using 1982 data for U.S. exports and adjusting the 1980 labor-output ratios to account for changes in export prices and productivity.

The Bureau of the Census in the Department of Commerce also publishes estimates of employment related to exports. They published these estimates for 1977, 1980, and 1981. 4/ Estimates for years prior to 1977 were done on an irregular basis. The Census estimates are based on the same methodology as that used for the ITA estimates, but Census uses the 2-digit input-output table constructed by Bureau of Economic Analysis (BEA). Although the Census studies are limited to manufacturing industries, they provide estimates of export-related employment for each of the 50 States.

Some studies used estimates of trade-related employment to examine characteristics of workers most affected by trade. Daniel Mitchell 5/ used the direct labor content of U.S. trade between 1965 and 1970 for several product classes covering all U.S. merchandise trade industries to estimate the demographic characteristics of the export and import labor forces. In a later study, C. Michael Aho and James Orr 6/ used the total labor content of U.S. manufacturing trade to examine skill levels and occupational characteristics of trade-related workers, as well as the demographic characteristics examined by Mitchell. Both studies found that manufacturing workers in import sensitive sectors tend to be less skilled and generally more disadvantaged than manufacturing workers in export sectors, or manufacturing workers in

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1/ Roger T. Pomeroy, Employment Related to Merchandise Exports, Office of Planning and Research, International Trade Administration, U.S. Department of Commerce, August 1981.

2/ Lester A. Davis, Domestic Employment Generated by U.S. Exports, Office of Trade and Investment Analysis, International Trade Administration, U.S. Department of Commerce, April 1983.

3/ INFORUM was developed by the Interindustry Economic Research Fund at the University of Maryland. The technical coefficeints in the model are based on the 1972 BEA input-output table, and are updated to 1976.

4/ Bureau of the Census, "Origins of Exports of Manufactured Products, Annual Survey of Manufactures.

5/ Daniel B. Mitchell, "Recent Changes in the Labor Content of U.S. International Trade," Industrial and Labor Relations Review, April 1975, pp. 355-375.

6/ C. Michael Aho and James A. Orr, "Trade-Sensitive Employment: Who are the Affected Workers?" Monthly Labor Review (February 1981), pp. 29-35.

general. C. Michael Aho and Don Rousslang 1/ examined the demographic and occupational characteristics of workers in manufacturing industries most affected by trade with developing countries. Not surprisingly, they found that the workers in industries that were adversely affected by imports from developing countries are generally less skilled and more disadvantaged than manufacturing workers in sectors sensitive to imports from all sources.

Charles Frank 2/ and Anne Krueger 3/ compared the employment effects of trade with the employment effects of changes in overall demand and of changes in technology. They used a simple accounting identity in which changes in total employment in an industry are attributed to changes in sales, to changes in productivity, and to changes in imports or exports. Their results indicate that trade has been only a minor factor in labor displacement relative to the other causes.

The rapid growth of imports from developing countries has led several authors to examine the employment implications of this trade. The study by Charles Frank and another by Anne Krueger 4/ examine trade with developing countries using the same methodology that these authors used to examine the employment implications of total trade. The studies conclude that trade with developing countries has had a small net positive effect on overall domestic employment.

Errol Grinols and Erik Thorbecke, 5/ and Gene Grossman 6/ developed models to estimate the effects of trade with developing countries on domestic employment using regression equations. They adopted this approach, because the accounting identity calculations used by Frank and by Krueger may give misleading results where changes in imports are significant or where producers can substitute labor for other factors of production. 7/ Grossman also

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1/ C. Michael Aho and Don Rousslang, "The Impact of LDC Trade on U.S. Workers: Demographic and Occupational Characteristics of Workers in Trade-Sensitive Industries," in Science and Technology for Development: Organized Labor's Concerns, proceedings of a workshop by the American Association for the Advancement of Science (Washington, D.C.: Brookings Institution), 1979.

2/ Charles R. Frank, Foreign Trade and Domestic Aid, (Washington, D.C.: Brookings Institution), 1977.

3/ Anne O. Kreuger, "Protectionist Pressures, Imports and Employment in the United States," Scandinavian Journal of Economics, vol. 82, No. 2, 1980.

4/ Anne O. Kreuger, "Restructuring for Import Competition from Developing Countries, I: Labor Displacements and Economic Redeployment in the United States," Journal of Policy Modeling, vol. 2, No. 2, 1980.

5/ Errol Grinols and Erik Thorbecke, "The Effects of Trade Between the U.S. and Developing Countries on U.S. Employment," Cornell University, Working Paper No. 171, 1978.

6/ Gene M. Grossman, "The Employment and Wage Effects of Import Competition in the United States," report prepared for the Bureau of International Labor Affairs, U.S. Department of Labor, September, 1982.

7/ See Grossman, Ibid., and J. P. Martin and J. Evans, "Notes on Measuring the Employment Displacement Effects of Trade by the Accounting Procedure," Oxford Economic Papers, vol. 33, No. 1, 1981.

estimated the effects of imports on wages in the competing domestic industry for a selected group of trade-impacted industries. The results of these studies support the conclusion that trade with developing countries has only a small effect on U.S. employment. Grinols and Thorbecke also found that the net employment effect of this trade was positive.

Appendix F

Data for U.S. Imports and Exports

Table F-1.--U.S. trade with the world, 1978-1984

(In millions of dollars)

Input-output sector	Industry description	1978	1979	1980	1981	1982	1983	1984
		Exports						
1	Livestock and livestock products	247	266	275	350	387	446	395
2	Other agricultural products	19,751	23,330	27,989	29,846	25,083	25,369	26,842
3	Forestry and fishery products	117	149	187	187	173	163	200
4	Agricultural, forestry, and fishery services	0	0	0	0	0	0	0
5	Iron and ferroalloy ores mining	481	849	967	664	387	375	504
6	Nonferrous metal ores mining	102	247	432	350	350	165	156
7	Coal mining	2,266	3,720	5,037	6,343	6,441	4,505	4,652
8	Crude petroleum and natural gas	153	168	266	386	456	589	402
9	Stone and clay mining and quarrying	372	497	545	627	589	634	636
10	Chemical and fertilizer mineral mining	580	775	1,015	875	770	770	422
11	New construction	0	0	0	0	0	0	0
12	Maintenance and repair construction	0	0	0	0	0	0	0
13	Ordnance and accessories	68	74	106	105	105	2,051	1,932
14	Food and kindred products	9,341	10,938	12,370	12,804	11,250	11,310	11,554
15	Tobacco manufactures	764	962	1,087	1,260	1,293	1,186	1,194
16	Broad and narrow fabrics, yarn and thread mills	1,157	1,708	1,841	1,649	1,197	1,019	964
17	Miscellaneous textile goods and floor coverings	497	662	916	900	752	726	761
18	Apparel	672	955	1,242	1,259	968	924	889
19	Miscellaneous fabricated textile products	352	434	384	387	320	294	313
20	Lumber and wood products, except containers	3,786	5,614	5,803	4,647	4,464	5,051	4,865
21	Wood containers	25	32	41	28	24	32	37
22	Household furniture	215	238	306	396	353	326	324
23	Other furniture and fixtures	135	151	219	306	294	285	315
24	Paper and allied products, except containers	2,567	3,347	4,836	4,898	4,307	4,264	4,572
25	Paperboard containers and boxes	0	0	0	0	0	0	0
26	Printing and publishing	811	954	1,094	1,294	1,331	1,333	1,390
27	Chemicals and selected chemical products	7,826	10,812	12,849	12,885	11,994	11,763	14,266
28	Plastics and synthetic materials	2,287	3,838	4,792	4,850	4,252	4,078	4,445
29	Drugs, cleaning and toilet preparations	1,905	2,169	2,594	2,942	2,946	3,183	3,307
30	Paints and allied products	164	181	206	238	231	223	224
31	Petroleum refining and related industries	1,743	2,187	3,196	4,182	6,346	5,060	4,982
32	Rubber and miscellaneous plastic products	1,752	2,155	2,619	2,914	2,586	2,606	2,908
33	Leather tanning and finishing	190	243	259	266	275	259	322
34	Footwear and other leather products	138	182	246	253	225	229	241
35	Glass and glass products	619	721	854	918	828	763	825
36	Stone and clay products	706	850	981	1,099	942	954	997
37	Primary iron and steel manufacturing	2,342	3,419	4,281	3,367	2,686	2,117	2,268
38	Primary nonferrous metals manufacturing	3,278	8,592	10,968	7,449	4,557	5,082	5,602
39	Metal containers	91	108	140	153	114	134	140
40	Heating, plumbing, and structural metal products	1,013	1,165	1,544	1,823	1,572	1,209	1,177
41	Screw machine products and stampings	245	273	314	335	278	266	293
42	Other fabricated metal products	1,398	1,589	1,868	2,022	1,760	1,699	1,739
43	Engines and turbines	2,299	2,923	3,693	4,185	4,266	3,889	4,263
44	Farm and garden machinery	1,790	2,161	2,543	2,994	2,034	1,405	1,502
45	Construction and mining machinery	5,395	6,378	8,452	9,750	8,887	5,758	5,799
46	Materials handling machinery and equipment	920	1,007	1,214	1,361	1,134	765	764
47	Metalworking machinery and equipment	2,291	2,651	3,400	3,912	3,102	2,496	2,594
48	Special industry machinery and equipment	1,513	2,137	2,694	2,842	2,642	2,003	1,978
49	General machinery and equipment	2,557	2,970	3,564	3,922	3,753	3,329	3,454
50	Miscellaneous machinery, except electrical	1,056	1,143	1,469	1,689	1,616	1,638	2,194
51	Office, computing, and accounting machines	5,009	6,473	8,702	9,812	10,212	12,166	15,195

132

Table F-1.--U.S. trade with the world, 1978-1984--Continued

(In millions of dollars)

Input-output sector	Industry description	1978	1979	1980	1981	1982	1983	1984
		Exports						
52	Service industries machines	2,078	2,303	2,609	2,991	2,563	2,153	2,073
53	Electric industrial equipment and apparatus	2,448	2,860	3,550	4,080	3,831	3,492	3,716
54	Household appliances	979	1,189	1,382	1,443	1,183	1,063	1,164
55	Electric lighting and wiring equipment	737	788	837	1,028	962	1,008	1,061
56	Radio, TV, and communication equipment	3,470	3,922	4,651	5,198	5,254	5,621	6,190
57	Electronic components and accessories	2,680	3,561	4,575	4,795	5,021	6,008	7,396
58	Misc. electrical machinery and supplies	1,724	2,153	2,500	2,939	2,727	2,776	3,311
59	Motor vehicles and equipment	12,299	14,070	13,393	15,048	12,606	13,773	16,712
60	Aircraft and parts	8,011	11,221	14,625	15,997	12,263	15,772	14,740
61	Other transportation equipment	746	880	1,368	1,776	1,786	2,552	2,139
62	Scientific and controlling instruments	3,111	3,809	4,547	5,317	5,402	5,310	5,586
63	Optical, ophthalmic, and photographic equipment	1,671	1,946	2,313	2,353	2,253	2,252	2,330
64	Miscellaneous manufacturing	3,920	4,959	5,753	5,854	4,590	5,218	7,947
65	Transportation and warehousing	0	0	0	0	0	0	0
66	Communications, except radio and TV	0	0	0	0	0	0	0
67	Radio and TV broadcasting	0	0	0	0	0	0	0
68	Electric, gas, water, and sanitary services	0	0	0	0	0	0	0
69	Wholesale and retail trade	1	6	21	7	10	27	33
70	Finance and insurance	0	0	0	0	0	0	0
71	Real estate and rental	0	0	0	0	0	0	0
72	Hotels, personal and repair services exc. auto	277	316	425	482	443	480	511
73	Business services	0	0	0	0	0	0	0
74	Eating and drinking places	0	0	0	0	0	0	0
75	Automobile repair and services	0	0	0	0	0	0	0
76	Amusements	53	61	79	78	76	75	64
77	Medical, educ. services and nonprofit org.	92	91	86	105	179	170	189
78	Federal Government enterprises	80	209	1,174	75	42	151	116
79	State and local government enterprises	0	0	0	0	0	0	0
80	Noncomparable imports	0	0	0	0	0	0	0
81	Scrap, used, and secondhand goods	0	0	0	0	0	0	0
	Total	137,362	176,739	214,290	225,292	201,730	202,790	220,076

133

Table F-1.--U.S. trade with the world, 1978-1984--Continued

(In millions of dollars)

Input-output sector	Industry description	1978	1979	1980	1981	1982	1983	1984
		Imports						
1	Livestock and livestock products	647	675	693	675	757	829	971
2	Other agricultural products	7,422	7,616	7,423	6,580	6,552	6,813	8,117
3	Forestry and fishery products	920	1,162	1,109	1,109	834	913	1,123
4	Agricultural, forestry, and fishery services	0	0	0	0	0	0	0
5	Iron and ferroalloy ores mining	1,477	1,435	1,385	1,627	834	699	868
6	Nonferrous metal ores mining	1,212	1,484	1,664	1,461	1,576	994	1,222
7	Coal mining	575	468	151	136	72	109	147
8	Crude petroleum and natural gas	2,532	3,878	5,274	5,793	6,016	5,748	4,971
9	Stone and clay mining and quarrying	1,171	1,286	1,280	733	568	614	720
10	Chemical and fertilizer mineral mining	850	1,076	1,274	1,434	1,134	1,002	1,214
11	New construction	0	0	0	0	0	0	0
12	Maintenance and repair construction	27	19	18	17	10	25	7
13	Ordnance and accessories	130	138	152	173	184	149	221
14	Food and kindred products	10,565	12,839	13,694	14,828	13,689	14,793	16,644
15	Tobacco manufactures	58	60	102	233	260	462	90
16	Broad and narrow fabrics, yarn and thread mills	1,921	1,765	1,927	2,516	2,286	2,601	3,562
17	Miscellaneous textile goods and floor coverings	522	642	677	710	655	740	992
18	Apparel	7,195	7,298	8,092	9,507	10,355	12,194	16,786
19	Miscellaneous fabricated textile products	252	279	348	447	436	524	767
20	Lumber and wood products, except containers	4,573	4,948	3,861	3,877	3,274	4,713	5,184
21	Wood containers	52	53	56	51	50	56	73
22	Household furniture	767	931	958	1,114	1,210	1,598	2,330
23	Other furniture and fixtures	234	248	293	314	348	480	560
24	Paper and allied products, except containers	4,106	4,959	5,403	5,712	5,374	5,675	7,487
25	Paperboard containers and boxes	16	20	21	25	44	91	97
26	Printing and publishing	554	597	677	686	728	855	1,160
27	Chemicals and selected chemical products	4,057	4,474	5,157	5,629	5,530	6,716	8,482
28	Plastics and synthetic materials	501	487	522	703	667	1,095	1,549
29	Drugs, cleaning and toilet preparations	958	1,033	1,112	1,262	1,284	1,617	2,160
30	Paints and allied products	83	90	69	24	30	38	89
31	Petroleum refining and related industries	42,337	59,830	77,256	78,708	62,161	54,696	58,664
32	Rubber and miscellaneous plastic products	3,708	4,149	4,182	4,125	3,543	4,101	5,297
33	Leather tanning and finishing	246	310	237	382	342	322	432
34	Footwear and other leather products	2,787	3,154	3,026	3,804	4,972	5,941	7,632
35	Glass and glass products	606	662	702	765	817	999	1,272
36	Stone and clay products	2,004	2,001	2,066	2,237	2,041	2,392	3,163
37	Primary iron and steel manufacturing	9,239	9,389	9,550	13,739	11,465	8,453	13,005
38	Primary nonferrous metals manufacturing	6,247	8,107	10,732	9,503	7,729	9,954	11,805
39	Metal containers	88	65	54	68	75	80	148
40	Heating, plumbing, and structural metal products	488	496	439	536	657	569	626
41	Screw machine products and stampings	730	834	946	941	882	941	1,061
42	Other fabricated metal products	2,679	2,988	3,145	3,376	3,311	3,516	4,822
43	Engines and turbines	198	287	218	171	155	148	182
44	Farm and garden machinery	572	806	1,853	1,654	1,286	1,487	1,947
45	Construction and mining machinery	931	919	916	1,329	952	786	1,630
46	Materials handling machinery and equipment	514	624	630	802	796	812	1,239
47	Metalworking machinery and equipment	1,624	2,268	2,667	2,914	2,488	2,118	2,865
48	Special industry machinery and equipment	1,467	1,614	1,846	1,991	1,978	2,198	2,898
49	General machinery and equipment	1,350	1,730	1,961	2,529	2,560	2,562	3,742
50	Miscellaneous machinery, except electrical	6	7	8	7	6	9	11
51	Office, computing, and accounting machines	2,377	2,666	3,099	3,763	4,561	7,199	11,443

134

Table F-1.--U.S. trade with the world, 1978-1984--Continued

(In millions of dollars)

Input-output sector	Industry description	1978	1979	1980	1981	1982	1983	1984
		Imports						
52	Service industries machines	86	97	95	104	119	178	246
53	Electric industrial equipment and apparatus	774	989	1,233	1,423	1,432	1,750	2,535
54	Household appliances	1,292	1,288	1,389	1,622	1,927	2,065	2,994
55	Electric lighting and wiring equipment	534	659	735	856	881	1,165	1,698
56	Radio, TV, and communication equipment	7,611	7,695	8,417	10,823	11,304	13,759	19,775
57	Electronic components and accessories	2,603	3,500	4,552	5,003	5,596	6,710	10,170
58	Misc. electrical machinery and supplies	1,276	1,587	1,789	2,034	2,213	2,619	3,407
59	Motor vehicles and equipment	26,036	27,900	28,272	30,846	33,843	40,767	53,146
60	Aircraft and parts	967	1,457	3,065	4,117	3,915	3,261	4,474
61	Other transportation equipment	1,732	2,117	2,448	2,414	1,958	2,050	2,231
62	Scientific and controlling instruments	1,656	1,833	2,205	2,592	2,288	2,500	3,254
63	Optical, ophthalmic, and photographic equipment	2,211	2,308	2,503	2,860	2,928	3,382	4,399
64	Miscellaneous manufacturing	8,607	9,424	10,829	12,937	14,178	14,924	18,974
65	Transportation and warehousing	0	0	0	0	0	0	0
66	Communications, except radio and TV	0	0	0	0	0	0	0
67	Radio and TV broadcasting	0	0	0	0	0	0	0
68	Electric, gas, water, and sanitary services	0	0	0	0	0	0	0
69	Wholesale and retail trade	2	7	16	9	6	21	12
70	Finance and insurance	0	0	0	0	0	0	0
71	Real estate and rental	0	0	0	0	0	0	0
72	Hotels, personal and repair services exc. auto	99	128	132	142	174	195	230
73	Business services	0	0	0	0	0	0	0
74	Eating and drinking places	0	0	0	0	0	0	0
75	Automobile repair and services	0	0	0	0	0	0	0
76	Amusements	20	20	33	25	26	21	32
77	Medical, educ. services and nonprofit org.	68	82	400	287	389	105	140
78	Federal Government enterprises	780	887	1,925	1,292	1,103	885	1,094
79	State and local government enterprises	3	14	35	15	37	75	23
80	Noncomparable imports	0	0	0	0	0	0	0
81	Scrap, used, and secondhand goods	14	16	29	29	19	30	44
	Total	189,948	224,874	259,028	280,150	261,872	277,887	350,357

Source: Computed from official statistics of the U.S. Bureau of the Census.

135

Table F-2.--Summary of U.S. trade with the world, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	20,115	23,745	28,452	30,383	25,643	25,978	27,437
Manufacturing	111,046	143,869	172,597	180,736	159,997	163,812	179,972
Mining	3,802	6,087	7,996	8,859	8,537	6,448	6,370
Petroleum	1,895	2,356	3,461	4,567	6,802	5,649	5,384
Services	504	683	1,784	747	751	902	913
Total	137,362	176,739	214,290	225,292	201,730	202,790	220,076
Imports:							
Agriculture	8,988	9,453	9,225	8,364	8,142	8,554	10,211
Manufacturing	129,792	144,794	158,931	180,079	179,603	204,115	270,759
Mining	5,286	5,748	5,754	5,392	4,184	3,419	4,171
Petroleum	44,869	63,708	82,530	84,501	68,178	60,443	63,634
Services	1,013	1,172	2,589	1,815	1,765	1,356	1,581
Total	189,948	224,874	259,028	280,150	261,872	277,887	350,357

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-3.--Summary of U.S. trade with the Organization for Economic Cooperation and Development (OECD), 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	10,809	11,609	13,893	14,729	13,036	12,701	11,988
Manufacturing	65,678	86,526	99,492	101,895	90,216	98,415	109,906
Mining	3,110	5,031	6,645	7,473	7,198	5,330	5,032
Petroleum	1,308	1,575	2,209	2,875	3,732	3,101	2,747
Services	247	418	1,468	401	347	469	469
Total	81,151	105,159	123,707	127,374	114,529	120,015	130,142
Imports:							
Agriculture	1,199	1,274	1,332	1,377	1,454	1,646	2,070
Manufacturing	92,952	101,010	109,615	123,690	123,548	136,680	181,121
Mining	2,667	2,943	2,662	2,629	1,930	1,571	2,103
Petroleum	6,400	9,145	12,328	16,509	17,180	15,746	17,929
Services	264	444	1,255	878	872	731	900
Total	103,483	114,817	127,192	145,083	144,985	156,374	204,122

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-4.--Summary of U.S. trade with the European Economic Community, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	5,197	5,206	5,967	6,037	5,351	4,392	4,139
Manufacturing	24,728	34,012	42,392	40,218	35,637	36,337	39,292
Mining	1,026	2,003	2,852	3,161	2,988	1,998	2,020
Petroleum	423	572	704	1,038	1,588	976	818
Services	113	227	1,170	172	159	202	202
Total	31,486	42,020	53,086	50,626	45,723	43,905	46,471
Imports:							
Agriculture	561	552	562	514	526	622	863
Manufacturing	30,052	33,428	35,780	37,720	37,944	40,353	53,681
Mining	770	597	410	234	177	146	216
Petroleum	1,360	2,567	2,702	6,502	7,149	6,137	7,020
Services	134	142	339	244	150	207	220
Total	32,877	37,286	39,792	45,213	45,947	47,466	62,000

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-5.--Summary of U.S. trade with the Newly Industrializing Countries, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	3,554	4,183	5,853	6,054	4,374	5,450	5,294
Manufacturing	15,651	22,907	30,380	31,895	25,230	23,826	28,004
Mining	416	665	793	880	866	753	811
Petroleum	305	437	681	934	1,902	1,290	1,227
Services	91	109	158	166	127	126	146
Total	20,017	28,301	37,865	39,928	32,498	31,445	35,482
Imports:							
Agriculture	2,192	2,113	2,310	2,151	1,977	2,167	2,416
Manufacturing	23,228	26,687	29,837	35,270	36,819	45,322	59,779
Mining	364	393	436	556	431	367	433
Petroleum	1,710	3,336	6,973	7,708	9,801	9,743	9,377
Services	78	160	273	514	492	111	119
Total	27,572	32,689	39,829	46,200	49,520	57,709	72,124

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-6.--Summary of U.S. trade with the Caribbean Basin countries, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	275	315	465	454	403	453	435
Manufacturing	3,919	4,519	5,639	6,003	5,580	5,067	5,381
Mining	19	25	33	29	30	21	23
Petroleum	60	78	107	149	448	508	633
Services	16	22	23	27	39	32	45
Total	4,289	4,960	6,267	6,662	6,500	6,081	6,517
Imports:							
Agriculture	1,278	1,508	1,336	1,114	1,196	1,258	1,455
Manufacturing	1,809	2,259	2,860	2,977	2,314	2,975	3,449
Mining	468	460	436	412	329	202	278
Petroleum	3,691	4,994	6,329	6,058	4,757	5,227	4,387
Services	4	5	12	6	5	6	4
Total	7,250	9,226	10,973	10,566	8,602	9,668	9,574

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-7.--Summary of U.S. trade with the South American countries, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	1,108	1,186	1,801	1,856	1,563	2,040	1,928
Manufacturing	9,256	11,432	14,447	14,950	12,622	10,743	12,100
Mining	240	377	497	352	386	339	489
Petroleum	130	169	179	165	265	491	420
Services	58	70	68	76	84	87	72
Total	10,792	13,234	16,991	17,399	14,919	13,700	15,009
Imports:							
Agriculture	2,673	2,703	2,820	2,153	2,099	2,465	3,238
Manufacturing	3,828	4,609	5,279	6,563	5,875	8,349	10,930
Mining	614	645	742	703	442	515	543
Petroleum	4,109	6,179	6,470	7,057	7,000	12,706	16,083
Services	6	5	43	24	56	40	26
Total	11,229	14,142	15,355	16,500	15,471	24,075	30,820

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-8.--Summary of U.S. trade with the Less Developed Countries (LDCs), 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	2,131	2,261	3,286	3,732	3,615	3,928	4,751
Manufacturing	13,953	17,763	23,759	25,122	23,975	25,422	26,741
Mining	133	244	325	308	322	206	364
Petroleum	182	231	420	525	899	891	1,169
Services	114	128	126	117	142	147	176
Total	16,513	20,626	27,915	29,803	28,953	30,594	33,201
Imports:							
Agriculture	5,015	5,585	5,213	4,492	4,348	3,695	4,334
Manufacturing	11,428	14,247	16,627	17,544	15,832	17,328	23,368
Mining	2,039	2,204	2,413	1,906	1,656	1,334	1,471
Petroleum	8,424	10,891	14,900	15,483	13,172	10,300	10,170
Services	663	536	1,009	414	388	501	528
Total	27,569	33,464	40,162	39,839	35,396	33,157	39,872

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-9.--Summary of U.S. trade with the Nonmarket Economy countries, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	2,790	4,836	4,487	4,579	3,685	2,250	3,642
Manufacturing	1,551	2,383	2,917	3,061	2,572	2,904	3,699
Mining	113	141	164	129	111	67	53
Petroleum	32	25	29	63	92	23	31
Services	3	2	3	22	78	76	76
Total	4,490	7,387	7,600	7,854	6,538	5,320	7,502
Imports:							
Agriculture	79	84	77	96	106	110	101
Manufacturing	1,855	2,445	2,428	3,155	2,958	3,281	4,542
Mining	52	86	116	122	97	76	97
Petroleum	150	183	208	594	750	824	1,412
Services	8	31	46	8	13	11	31
Total	2,142	2,829	2,875	3,976	3,924	4,301	6,183

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-10.--Summary of U.S. trade with the Organization of Petroleum Exporting Countries (OPEC), 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	1,036	1,069	1,260	1,697	1,382	1,650	1,762
Manufacturing	13,538	13,132	15,357	18,581	18,501	13,245	11,622
Mining	53	50	118	112	141	92	110
Petroleum	89	103	147	205	238	344	209
Services	56	29	35	45	63	84	46
Total	14,771	14,383	16,917	20,640	20,326	15,415	13,749
Imports:							
Agriculture	1,225	1,271	1,180	1,053	899	936	1,290
Manufacturing	595	713	806	909	900	1,504	1,950
Mining	182	142	143	201	81	71	67
Petroleum	31,292	43,097	52,515	49,369	30,803	23,831	24,746
Services	0	1	6	2	1	3	2
Total	33,294	45,224	54,650	51,535	32,684	26,346	28,056

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-11.--Summary of U.S. trade with the Pacific Rim countries, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	2,592	3,338	3,710	4,065	3,662	3,910	3,726
Manufacturing	11,710	16,395	20,692	21,650	22,293	21,690	23,961
Mining	180	241	304	463	420	405	367
Petroleum	106	171	363	588	927	1,138	912
Services	65	71	100	91	102	110	121
Total	14,653	20,216	25,169	26,857	27,403	27,253	29,087
Imports:							
Agriculture	1,212	1,411	1,355	1,303	1,055	1,251	1,480
Manufacturing	25,690	25,784	28,470	41,389	34,035	40,868	52,733
Mining	286	307	397	321	293	163	228
Petroleum	3,761	3,874	5,666	6,065	4,081	4,600	5,029
Services	12	21	26	29	26	45	36
Total	30,960	31,397	35,914	49,107	39,489	46,927	59,506

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-12.--Summary of U.S. trade with Canada, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	790	792	1,271	1,331	1,188	1,140	1,179
Manufacturing	25,370	29,640	31,516	35,625	30,170	34,721	42,840
Mining	1,105	1,405	1,473	1,571	1,482	1,433	1,552
Petroleum	544	569	1,102	977	882	751	852
Services	48	65	186	196	118	123	143
Total	27,857	32,471	35,547	39,701	33,840	38,167	46,567
Imports:							
Agriculture	392	468	506	579	621	661	820
Manufacturing	28,528	30,738	31,728	35,961	35,938	41,859	54,705
Mining	1,774	2,165	2,099	2,297	1,664	1,355	1,798
Petroleum	4,272	5,736	7,328	7,925	8,348	8,570	9,495
Services	81	209	689	508	530	452	614
Total	35,045	39,316	42,351	47,270	47,101	52,897	67,431

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-13.--Summary of U.S. trade with Mexico, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	667	683	1,863	1,794	762	1,547	1,543
Manufacturing	5,602	8,572	12,446	14,915	8,957	7,050	9,822
Mining	87	134	149	156	133	99	105
Petroleum	183	275	419	468	1,154	360	488
Services	29	35	65	83	56	46	55
Total	6,568	9,699	14,942	17,416	11,062	9,103	12,013
Imports:							
Agriculture	970	1,109	965	1,002	1,027	1,108	1,097
Manufacturing	3,699	4,666	4,917	5,478	5,708	7,147	9,052
Mining	157	196	210	287	260	203	224
Petroleum	1,544	3,156	6,694	6,989	8,592	8,724	8,009
Services	64	139	212	481	424	58	85
Total	6,433	9,266	12,998	14,236	16,011	17,239	18,466

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-14.--Summary of U.S. trade with Brazil, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	526	479	661	708	516	471	449
Manufacturing	2,193	2,587	3,281	2,785	2,520	1,821	1,849
Mining	152	253	310	224	258	225	319
Petroleum	71	73	42	17	69	25	9
Services	10	12	11	12	11	12	13
Total	2,952	3,405	4,305	3,746	3,374	2,554	2,638
Imports:							
Agriculture	1,073	827	1,187	980	806	867	1,113
Manufacturing	1,885	2,481	2,691	3,406	3,174	4,034	6,125
Mining	135	138	149	160	79	91	141
Petroleum	6	16	44	319	688	662	846
Services	1	1	2	2	4	2	2
Total	3,101	3,464	4,073	4,868	4,750	5,656	8,226

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-15.--Summary of U.S. trade with Venezuela, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	189	240	364	426	332	405	427
Manufacturing	3,447	3,573	4,101	4,910	4,758	2,228	2,826
Mining	25	29	52	37	34	26	45
Petroleum	20	35	46	51	47	48	62
Services	7	8	12	10	28	15	9
Total	3,688	3,884	4,575	5,435	5,200	2,722	3,368
Imports:							
Agriculture	55	29	18	11	10	17	35
Manufacturing	78	103	133	224	131	450	613
Mining	159	132	118	176	75	65	60
Petroleum	3,526	5,187	5,281	5,408	4,741	4,657	6,072
Services	0	1	1	0	0	1	1
Total	3,819	5,452	5,552	5,820	4,958	5,190	6,782

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-16.--Summary of U.S. trade with Argentina, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	9	19	26	17	7	11	11
Manufacturing	753	1,642	2,407	2,051	1,187	881	809
Mining	31	55	57	36	55	24	33
Petroleum	11	24	31	33	25	31	35
Services	6	11	104	52	17	10	8
Total	810	1,751	2,626	2,190	1,292	958	896
Imports:							
Agriculture	24	20	23	40	26	25	37
Manufacturing	579	609	628	933	718	724	787
Mining	13	3	13	32	7	2	2
Petroleum	23	20	109	213	377	217	206
Services	2	1	33	10	43	5	1
Total	641	654	806	1,228	1,171	974	1,033

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-17.--Summary of U.S. trade with Japan, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	3,400	3,993	4,855	5,160	4,189	4,858	5,285
Manufacturing	9,443	13,596	15,245	14,823	14,534	15,421	16,738
Mining	806	1,310	1,842	1,984	2,008	1,381	1,224
Petroleum	228	291	407	605	862	981	883
Services	17	19	15	24	31	26	48
Total	13,893	19,209	22,364	22,596	21,624	22,667	24,178
Imports:							
Agriculture	12	13	12	16	21	32	32
Manufacturing	27,819	29,548	34,358	41,617	41,535	45,505	62,767
Mining	27	95	43	36	15	4	43
Petroleum	38	27	63	108	68	38	58
Services	10	20	101	77	162	34	22
Total	27,908	29,703	34,577	41,853	41,801	45,614	62,922

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-18.--Summary of U.S. trade with Hong Kong, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	262	253	308	253	243	211	273
Manufacturing	1,287	1,735	2,226	2,220	2,032	2,268	2,703
Mining	3	3	3	4	7	20	21
Petroleum	5	5	9	20	10	55	72
Services	6	10	15	12	12	12	14
Total	1,563	2,005	2,562	2,509	2,304	2,565	3,083
Imports:							
Agriculture	9	7	7	7	9	9	12
Manufacturing	4,241	4,810	5,580	6,357	6,516	7,477	9,609
Mining	1	0	1	1	2	1	1
Petroleum	0	0	3	0	0	0	3
Services	4	12	13	8	8	9	8
Total	4,255	4,830	5,604	6,374	6,535	7,496	9,634

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-19.--Summary of U.S. trade with Korea, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	932	1,196	1,496	1,758	1,333	1,554	1,302
Manufacturing	1,930	2,572	2,769	2,947	3,541	3,882	4,265
Mining	94	129	149	205	207	178	142
Petroleum	9	20	51	132	325	189	214
Services	21	19	20	9	6	12	12
Total	2,987	3,936	4,486	5,049	5,412	5,816	5,935
Imports:							
Agriculture	25	29	16	5	1	9	24
Manufacturing	4,493	4,741	4,854	6,024	6,597	8,407	10,820
Mining	6	3	0	7	2	4	2
Petroleum	2	0	0	9	48	7	15
Services	2	2	4	4	5	5	6
Total	4,527	4,775	4,875	6,049	6,654	8,431	10,867

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-20.--Summary of U.S. trade with Taiwan, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	760	985	965	1,016	1,006	1,133	1,246
Manufacturing	1,442	2,104	3,103	2,876	2,886	2,976	3,183
Mining	23	29	47	146	117	117	126
Petroleum	16	31	53	105	85	194	299
Services	3	8	20	5	7	15	17
Total	2,244	3,157	4,188	4,149	4,101	4,434	4,871
Imports:							
Agriculture	7	9	9	12	17	14	21
Manufacturing	6,229	6,936	8,011	9,395	10,405	13,057	17,183
Mining	0	4	4	2	3	4	3
Petroleum	5	6	0	0	0	22	48
Services	1	2	3	3	4	21	10
Total	6,242	6,958	8,028	9,413	10,430	13,118	17,265

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-21.--Summary of U.S. trade with the People's Republic of China (PRC), 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	535	947	2,122	1,926	1,479	542	584
Manufacturing	281	769	1,661	1,767	1,638	1,858	2,698
Mining	2	0	5	3	3	5	5
Petroleum	0	1	2	0	1	0	1
Services	0	0	0	1	1	2	3
Total	818	1,716	3,790	3,698	3,122	2,407	3,291
Imports:							
Agriculture	19	26	30	30	46	45	36
Manufacturing	391	560	983	1,708	1,911	2,139	2,876
Mining	10	30	76	106	85	58	70
Petroleum	0	105	149	325	631	464	660
Services	0	3	21	6	2	9	29
Total	420	723	1,259	2,176	2,674	2,715	3,671

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-22.--Summary of U.S. trade with Singapore, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	38	40	62	95	61	69	49
Manufacturing	1,387	2,184	2,831	2,700	2,867	3,178	3,472
Mining	7	5	10	9	7	6	4
Petroleum	4	5	65	145	225	424	95
Services	6	4	5	11	12	12	14
Total	1,442	2,238	2,974	2,961	3,172	3,688	3,635
Imports:							
Agriculture	41	70	63	67	58	100	61
Manufacturing	1,056	1,415	1,911	2,075	2,221	2,866	3,964
Mining	2	1	0	0	0	0	1
Petroleum	130	137	78	131	79	104	237
Services	1	1	1	4	1	5	4
Total	1,230	1,624	2,054	2,277	2,358	3,074	4,267

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-23.--Summary of U.S. trade with the Philippines, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	170	211	257	267	272	269	185
Manufacturing	816	1,291	1,695	1,440	1,507	1,467	1,486
Mining	9	11	15	23	10	13	15
Petroleum	9	16	17	19	37	34	13
Services	5	6	4	8	9	10	10
Total	1,010	1,533	1,988	1,758	1,835	1,793	1,709
Imports:							
Agriculture	42	56	81	90	99	88	82
Manufacturing	1,346	1,583	1,884	2,120	1,885	2,144	2,640
Mining	26	69	36	52	60	33	19
Petroleum	0	0	0	17	9	15	16
Services	0	0	1	1	1	1	2
Total	1,414	1,709	2,002	2,280	2,054	2,282	2,759

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-24.--Summary of U.S. trade with the United Kingdom, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	801	723	588	619	569	542	481
Manufacturing	5,947	9,275	11,386	11,195	9,354	9,619	11,066
Mining	83	200	400	249	223	138	207
Petroleum	53	73	87	76	164	140	259
Services	33	46	138	113	115	68	63
Total	6,917	10,319	12,599	12,252	10,424	10,507	12,075
Imports:							
Agriculture	61	66	77	71	82	94	111
Manufacturing	5,961	6,853	7,875	8,122	7,970	8,605	10,422
Mining	251	222	245	83	36	43	33
Petroleum	865	1,559	2,096	5,273	5,637	4,370	4,578
Services	28	49	151	87	43	58	99
Total	7,167	8,749	10,444	13,635	13,767	13,170	15,242

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-25.--Summary of U.S. trade with Italy, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	751	694	838	906	600	441	589
Manufacturing	2,211	3,283	4,241	3,667	3,111	2,851	3,169
Mining	197	317	420	610	705	464	444
Petroleum	95	108	134	209	219	171	167
Services	13	10	13	5	9	7	5
Total	3,268	4,413	5,647	5,398	4,645	3,934	4,375
Imports:							
Agriculture	40	41	34	36	31	34	51
Manufacturing	4,865	5,871	5,060	5,613	5,661	5,879	8,394
Mining	26	12	8	11	13	10	20
Petroleum	251	437	149	235	294	270	540
Services	14	7	49	95	12	16	14
Total	5,196	6,368	5,300	5,991	6,010	6,209	9,019

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-26.--Summary of U.S. trade with France, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	298	359	401	369	368	306	325
Manufacturing	3,596	4,775	6,310	6,315	5,934	5,260	5,364
Mining	136	254	428	557	539	271	220
Petroleum	39	66	92	89	187	103	93
Services	14	18	263	14	15	20	21
Total	4,084	5,473	7,493	7,344	7,042	5,960	6,024
Imports:							
Agriculture	55	70	76	60	54	61	75
Manufacturing	4,336	5,036	5,522	6,147	5,822	6,178	8,381
Mining	61	30	5	9	6	7	24
Petroleum	84	156	86	88	71	74	131
Services	15	22	17	16	12	84	28
Total	4,551	5,313	5,705	6,320	5,965	6,403	8,640

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-27.--Summary of U.S. trade with West Germany, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	895	859	1,042	1,149	939	792	558
Manufacturing	5,743	7,022	8,966	8,565	7,696	7,540	8,172
Mining	135	302	362	345	242	172	103
Petroleum	47	61	74	71	85	27	39
Services	21	80	515	35	27	45	39
Total	6,840	8,325	10,960	10,165	8,988	8,576	8,911
Imports:							
Agriculture	119	106	131	97	94	110	172
Manufacturing	10,558	11,780	12,632	12,183	12,772	13,586	18,111
Mining	360	276	97	98	75	48	69
Petroleum	20	21	35	30	115	100	80
Services	42	48	52	30	25	26	37
Total	11,099	12,231	12,948	12,439	13,080	13,870	18,470

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-28.--Summary of U.S. trade with the Netherlands, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	1,774	1,803	2,187	2,009	1,774	1,279	1,312
Manufacturing	3,337	4,343	5,529	5,275	5,282	5,425	5,352
Mining	315	511	682	785	678	518	618
Petroleum	121	173	217	477	795	431	171
Services	15	34	37	21	21	33	40
Total	5,563	6,865	8,652	8,566	8,549	7,686	7,494
Imports:							
Agriculture	181	153	133	124	137	177	277
Manufacturing	1,429	1,505	1,758	1,817	1,827	2,048	2,815
Mining	37	17	20	8	11	9	16
Petroleum	98	356	180	630	706	976	1,297
Services	30	8	8	5	30	8	14
Total	1,775	2,040	2,098	2,583	2,711	3,218	4,419

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-29.--Summary of U.S. trade with Australia, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	43	50	61	69	54	70	71
Manufacturing	2,671	3,397	3,963	5,047	4,348	3,772	4,570
Mining	17	34	44	32	23	26	19
Petroleum	29	46	47	65	83	86	93
Services	14	11	12	17	14	15	17
Total	2,773	3,538	4,128	5,231	4,521	3,970	4,770
Imports:							
Agriculture	40	34	46	57	51	66	68
Manufacturing	1,640	2,157	2,486	2,390	2,226	2,195	2,244
Mining	156	151	225	178	183	103	171
Petroleum	34	47	20	65	66	43	350
Services	2	2	4	5	3	2	2
Total	1,872	2,392	2,780	2,695	2,530	2,408	2,836

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-30.--Summary of U.S. trade with Israel, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	280	285	278	330	316	276	294
Manufacturing	807	1,230	1,144	1,232	1,279	1,462	1,645
Mining	9	2	68	25	21	25	26
Petroleum	2	2	2	2	3	1	2
Services	8	9	6	8	9	6	13
Total	1,105	1,529	1,498	1,597	1,630	1,770	1,980
Imports:							
Agriculture	10	13	10	11	12	13	21
Manufacturing	739	775	949	1,210	1,123	1,227	1,735
Mining	48	46	58	66	77	59	60
Petroleum	0	0	4	7	1	1	2
Services	2	1	4	2	2	4	2
Total	800	836	1,024	1,297	1,215	1,305	1,820

Source: Computed from official statistics of the U.S. Bureau of the Census.

Table F-31.--Summary of U.S. trade with South Africa, 1978-1984

(In millions of dollars)

Industry	1978	1979	1980	1981	1982	1983	1984
Exports:							
Agriculture	13	23	27	75	52	153	394
Manufacturing	1,029	1,331	2,351	2,741	2,230	1,916	1,815
Mining	12	23	39	30	27	23	16
Petroleum	17	31	49	66	61	39	42
Services	2	3	3	3	4	5	4
Total	1,073	1,409	2,468	2,915	2,373	2,136	2,271
Imports:							
Agriculture	10	14	23	19	32	40	47
Manufacturing	998	1,365	1,596	1,612	1,151	1,147	1,623
Mining	774	835	873	543	459	472	427
Petroleum	0	2	2	5	50	13	15
Services	652	524	943	383	365	452	487
Total	2,434	2,739	3,437	2,562	2,057	2,123	2,599

Source: Computed from official statistics of the U.S. Bureau of the Census.

APPENDIX G

Notice of investigation on U.S. Trade-Related Employment

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

Notice of Investigation
(332-217)

U.S. Trade-Related Employment

AGENCY: United States International Trade Commission

ACTION: Institution of an investigation under section 332(b) of the Tariff Act of 1930 (19 U.S.C. 1332(b)) for the purpose of estimating U.S. trade-related employment.

EFFECTIVE DATE: July 11, 1985

FOR FURTHER INFORMATION CONTACT: Dr. Donald Rousslang, Chief, Research Division, Office of Economics, U.S. International Trade Commission, Washington, D.C. 20436 (Phone 202-523-0075).

BACKGROUND: The Commission instituted this investigation, No. 332-217, on its own motion. The study will provide estimates of the labor content of U.S. trade with all countries combined and of U.S. trade with particular partners, including Japan, the European Community, the newly industrializing countries, the less developed countries, and the nonmarket economies. These labor content estimates will be made for disaggregate industries. The study will update the results of investigation 332-154 which was issued in October 1983. The Commission plans to complete this investigation and issue a report by March 3, 1986.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the investigation. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested persons. To be assured of consideration by the Commission, written statements should be submitted at the earliest practicable date, but no later than October 15, 1985. All submissions should be addressed to the Secretary at the Commission's office in Washington, D.C.

Hearing-impaired individuals are advised that information on this matter can be obtained by contacting our TDD terminal on (202) 724-0002.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: July 11, 1985

of the Act (19 U.S.C. 1673). Notice of the institution of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of April 10, 1985 (50 FR 14169). The hearing was held in Washington, DC, on June 3, 1985, and all persons who requested the opportunities were permitted to appear in person or by counsel.

The Commission transmitted its determination in this investigation to the Secretary of Commerce on July 11, 1985. The views of the Commission are contained in USITC Publication 1722 (July 1985), entitled "Tubular Steel Framed Stacking Chairs from Italy: Determination of the Commission in Investigation No. 731-TA-202 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation."

By order of the Commission.

Issued: July 11, 1985.

Kenneth R. Mason,

Secretary.

[FR Doc. 85-16991 Filed 7-16-85; 8:45 am]

BILLING CODE 7020-02-M

[332-217]

U.S. Trade-Related Employment; Notice of Investigation

AGENCY: International Trade Commission.

ACTION: Institution of an investigation under section 332(b) of the Tariff Act of 1930 (19 U.S.C. 1332(b)) for the purpose of estimating U.S. trade-related employment.

EFFECTIVE DATE: July 11, 1985.

FOR FURTHER INFORMATION CONTACT: Dr. Donald Rousslang, Chief, Research Division, Office of Economics, U.S. International Trade Commission, Washington, D.C. 20436 (Phone 202-523-0075).

Background: The Commission instituted this investigation, No. 332-217, on its own motion. The study will provide estimates of the labor content of U.S. trade with all countries combined and of U.S. trade with particular partners, including Japan, the European Community, the newly industrializing countries, the less developed countries, and the nonmarket economies. These labor content estimates will be made for disaggregate industries. The study will update the results of investigation 332-154 which was issued in October 1983. The Commission plans to complete this investigation and issue a report by March 3, 1986.

Written submissions: Interested persons are invited to submit written statements concerning the investigation. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of § 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested persons. To be assured of consideration by the Commission, written statements should be submitted at the earliest practicable date, but no later than October 15, 1985. All submissions should be addressed to the Secretary at the Commission's office in Washington, D.C.

Hearing-impaired individuals are advised that information on this matter can be obtained by contacting our TDD terminal on, (202) 724-0002.

By order of the Commission.

Issued July 11, 1985.

Kenneth R. Mason,

Secretary.

[FR 85-16994 Filed 7-16-85; 8:45 am]

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[Investigation No. 731-TA-212 (Final)]

Certain Welded Carbon Steel Pipes and Tubes From Venezuela

AGENCY: International Trade Commission.

ACTION: Rescheduling of the hearing to be held in connection with the subject investigation.

SUMMARY: The Commission hereby announces the rescheduling of the hearing to be held in connection with the subject investigation from 10:00 a.m. on August 22, 1985, to 10:00 a.m. on October 29, 1985.

For further information concerning the conduct of the investigation, hearing procedures, and rules of general application, consult the Commission's rules of practice and procedure, Part 207, subparts A and C (19 CFR Part 207), and Part 201, subparts A through E (19 CFR Part 201, as amended by 49 FR 32569, Aug. 15, 1984).

EFFECTIVE DATE: July 18, 1985.

FOR FURTHER INFORMATION CONTACT: Tedford Briggs (202-523-4612), Office of Investigations, U.S. International Trade Commission, 701 E Street NW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-724-0002.

SUPPLEMENTARY INFORMATION:

Background.—On June 3, 1985, the Commission instituted the subject investigation and scheduled as hearing to be held in connection therewith for August 22, 1985 (50 FR 26638, June 27, 1985). Subsequently, the Department of Commerce extended the date for its final determination in the investigation from Augest 12, 1985, to October 16, 1985. The Commission, therefore, is revising its schedule in the investigation to conform with Commerce's new schedule. As provided in section 735(b)(2)(B) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)(2)(B)), the Commission must make its final determination in antidumping investigations within 45 days of Commerce's final determination, or in this case by November 29, 1985.

Staff report.—A public version of the prehearing staff report in this investigation will be placed in the public record on October 8, 1985, pursuant to section 207.21 of the Commission's rules (19 CFR 207.21).

Hearing.—The Commission will hold a hearing in connection with this investigation beginning at 10:00 a.m. on October 29, 1985, at the U.S. International Trade Commission Building, 701 E Street NW., Washington, DC. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission not later than the close of business (5:15 p.m.) on October 21, 1985. All persons desiring to appear at the hearing and make oral presentations should file prehearing briefs and attend a prehearing conference to be held at 9:30 a.m. on October 18, 1985, in room 117 of the U.S. International Trade Commission Building. The deadline for filing prehearing briefs is October 22, 1985.

Testimony at the public hearing is governed by section 207.23 of the Commission's rules (19 CFR 207.23). This rule requires that testimony be limited to a nonconfidential summary and analysis of material contained in prehearing briefs and to information not available at the time the prehearing brief was submitted. Any written materials submitted at the hearing must be filed in accordance with the procedures described below and any confidential materials must be submitted at least three (3) working days prior to the hearing (see § 201.6(b)(2) of the Commission's rules (19 CFR 201.6(b)(2)).

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