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MULTINATIONAL FIRMS  
AND MANUFACTURED EXPORTS  
FROM DEVELOPING COUNTRIES

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Multinational Firms and Manufactured Exports from Developing Countries

ABSTRACT

Multinational firms have played an important role in leading the developing countries into world markets. Multinationals from the United States, Japan and Sweden have all increased their shares of LDC exports of manufactures since the mid-1960s or mid-1970s. Their importance was particularly notable in Latin America, while their role in the Asian NICs decreased.

The comparative advantages of U.S. and Swedish multinationals' affiliates in developing countries resembled those of their home countries more than those of their host countries, while Japanese affiliates' exports are more similar to those of their host countries. There are some cases in which the advantage of the multinationals as exporters seems to be that they are able to combine company comparative advantages with the location advantages of producing in the developing countries.

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## MULTINATIONAL FIRMS AND MANUFACTURED EXPORTS FROM DEVELOPING COUNTRIES\*

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### 1. Introduction

The encouragement of foreign direct investment in export industries is often urged upon developing countries as a key to entering world markets. However, the major empirical work on the question, a study by Nayyar (1978), concluded that multinationals had not been increasing their role in developing countries' exports of manufactures. He reported that the share of U.S. multinationals (by far the major investors) in total developing country exports of manufactures fell from 10.6 to 8.7 per cent between 1966 and 1974 and that their share in Latin American exports of manufactures fell even more steeply -- from 38 to about 19 per cent in the same period.

For several reasons another look at this issue may be worthwhile. A decade has passed since that conclusion was reached, developing countries' export prospects are still questionable, and a substantial amount of new and revised data on multinationals' operations have become available. In

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addition to multinationals from the United States, our investigation also covers firms from Japan and Sweden.

## 2. U.S. Multinationals

The basic fact about the share of U.S. multinationals in developing country exports of manufactures is that it has increased substantially since the 1950s and, contrary to Nayyar's findings, since the 1960s as well (Table 1). U.S. majority-owned foreign affiliates (MOFAs)<sup>1</sup> raised their share in developing-country exports of manufactures by 58 per cent between 1966 and 1983 and more than doubled it between 1957 and 1983.

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<sup>1</sup>Export data are not collected for U.S. foreign affiliates that are minority-owned.

Table 1

Shares of U.S. Majority-Owned Foreign Affiliates  
in LDC Exports of Manufactures,<sup>a</sup> Selected Years, 1957-1983  
(Percentages)

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|      |                  |                    |
|------|------------------|--------------------|
| 1957 | 2.8              | (3.7) <sup>c</sup> |
| 1966 | 3.6 <sup>b</sup> | 4.8                |
| 1977 |                  | 6.5                |
| 1982 |                  | 7.7                |
| 1983 |                  | 7.6                |

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<sup>a</sup>Manufactures defined to match definition in U.S. Dept. of Commerce (1985). For details, see Appendix A. The definition is somewhat different from Nayyar's, and that, as well as new data since he wrote, account for the difference in findings.

<sup>b</sup>Comparable to 1957.

<sup>c</sup>Extrapolated from 1966 by figures in first column.

Source: Lipsey and Kravis (1986), Appendix Table U-1, and revised data for 1983 from Appendix Tables 1 and 2 of this paper.

The role of U.S. firms in Third World exports varied widely among industries and countries. As can be seen in Table 2, it was much greater in chemicals, transport equipment, and machinery than in foods, metals, and other manufacturing (largely textiles and apparel). In machinery and transport equipment the U.S. companies' shares more than doubled between 1966 and 1977, reaching over 30 and 14 per cent, but they receded somewhat by 1983.

Table 2  
Shares of U.S. MOFAs in LDC Exports of Manufactures,  
by Industry, Selected Years, 1966-1983  
(Percentages)

| Year | Foods | Chemicals | Metals | Machinery |               |       | Transport<br>Equipment | Other<br>Mfg. |
|------|-------|-----------|--------|-----------|---------------|-------|------------------------|---------------|
|      |       |           |        | Total     | Non-<br>Elec. | Elec. |                        |               |
| 1966 | 4.5   | 23.0      | 3.1    | 15.1      | n.a.          | n.a.  | 6.9                    | 2.7           |
| 1977 | 2.4   | 11.2      | 4.8    | 32.5      | 19.3          | 37.0  | 14.1                   | 2.1           |
| 1982 | 2.7   | 12.0      | 3.7    | 30.2      | 19.0          | 35.2  | 9.9                    | 2.1           |
| 1983 | 2.5   | 13.5      | 1.8    | 27.9      | 23.1          | 29.8  | 12.6                   | 1.9           |

Source: Appendix Tables 1 and 2

The combination of rising MOFA shares overall and mostly declining shares in individual industries emphasizes the importance of shifts among industries. The industries in which U.S. multinationals were most active as exporters from LDCs were also the industries in which LDC exports were rising most rapidly.

The data for individual countries reveal that U.S. multinationals' shares of host-country exports increased both in Latin America and in developing Asia as a whole through 1982, but decreased in each of the four Asian NICs after 1977, the only period for which we have data for them (Table 3). However, the Asian NICs' exports were growing much faster during these years than were those of the Latin American and other Asian countries. The Latin American share in world exports was actually decreasing (for details, see Blomström, 1987).

Table 3

Shares of U.S. MOFAs in LDC Exports of Manufactures,  
by Country and Region, Selected Years, 1966-1983  
(Percentages)

| Host Countries  | 1966 | 1977 | 1982 | 1983 |
|-----------------|------|------|------|------|
| Latin America   | 7.6  | 9.8  | 13.0 | 13.4 |
| Brazil          | 3.3  | 11.4 | 14.1 | 12.3 |
| Mexico          | 9.5  | 20.5 | 33.9 | 27.5 |
| Developing Asia | 3.9  | 6.3  | 6.9  | 6.1  |
| Hong Kong       | n.a. | 8.1  | 6.5  | 5.6  |
| Korea           | n.a. | 1.4  | 1.2  | 1.3  |
| Singapore       | n.a. | 18.7 | 14.5 | 17.4 |
| Taiwan          | n.a. | 6.2  | 4.2  | 3.9  |

Source: Appendix Table 3

For U.S. multinationals, we can thus conclude that their role in LDC exports of manufactures increased from the late 1950s to the early 1980s. That increase can be factored into several elements. One was that there were declines in shares in most industries and, in 1977 to 1983, in the fastest growing countries. However, these declines were more than offset by the concentration of the multinationals' activities, relative to LDC exports as a whole, in the fastest growing LDC export sector, machinery, and in the fastest growing countries.

### 3. Japanese Multinationals

The story for the Japanese multinationals seems to be similar to that of the U.S. firms in many respects. As Table 4 shows, Japanese affiliates increased their share of LDC exports of manufactures between 1974 and 1983,

the only two years for which data comparable to the U.S. figures are available. Japanese multinationals played a particularly large role in the electrical machinery industry, as did American firms, and their share in that industry's exports increased between the 1970s and 1980s. Thus, the increase in the overall share of Japanese multinationals in developing countries' manufactured exports reflected the concentration of Japanese-owned production in the very fast growing electrical machinery and transport equipment groups, as well as in other manufacturing, which grew at a rate slightly better than manufacturing as a whole.

Table 4

Shares of Japanese Affiliates in LDC Exports of Manufactures, 1974 and 1983  
(Percentages)

| Year | Total<br>Mfg. | Foods | Chemicals | Metals | Machinery |               |       | Transport<br>Equipment | Other<br>Mfg. |
|------|---------------|-------|-----------|--------|-----------|---------------|-------|------------------------|---------------|
|      |               |       |           |        | Total     | Non-<br>Elec. | Elec. |                        |               |
| 1974 | 3.5           | 1.3   | 2.5       | .9     | 12.5      | 3.4           | 16.2  | 5.8                    | 4.2           |
| 1983 | 5.6           | 1.1   | 5.6       | 5.2    | 13.2      | 3.4           | 17.2  | 6.7                    | 4.8           |

Source: Appendix Tables 1 and 2

The role of Japanese affiliates in Latin American manufacturing exports, always small, increased substantially between 1974 and 1983, while it increased only slightly in developing Asia, where it was always much greater (Table 5). A major difference between the Japanese and U.S. multinationals is that the Japanese firms' activities were overwhelmingly concentrated in the fast-growing group of countries (Developing Asia) and

hardly at all in the slow-growing group (Latin America), while the U.S. had a substantial stake in Latin America. The increases in the overall Japanese share, thus, reflected their geographical concentration as well as their industry concentration.

Table 5

Shares of Japanese Affiliates in Developing Asian and Latin American Exports of Manufactures, 1974 and 1983 (Percentages)

| Year                   | Total Mfg. | Foods | Chemicals | Metals | <u>Machinery</u> |                 | Transport Equipment | Other Mfg. |     |
|------------------------|------------|-------|-----------|--------|------------------|-----------------|---------------------|------------|-----|
|                        |            |       |           |        | Total            | Non-Elec. Elec. |                     |            |     |
| <u>Developing Asia</u> |            |       |           |        |                  |                 |                     |            |     |
| 1974                   | 6.2        | 3.4   | 5.8       | 2.7    | 15.7             | 5.5             | 18.4                | 10.9       | 5.1 |
| 1983                   | 6.9        | 2.3   | 8.4       | 3.0    | 14.3             | 3.6             | 18.0                | 9.8        | 5.0 |
| <u>Latin America</u>   |            |       |           |        |                  |                 |                     |            |     |
| 1974                   | 1.1        | .4    | 2.8       | .3     | .7               | 0               | 1.7                 | 2.0        | 2.8 |
| 1983                   | 3.1        | .4    | 2.1       | 7.5    | 2.1              | 2.9             | .3                  | 1.9        | 6.1 |

Source: Appendix Table 4

#### 4. Swedish Multinationals

Swedish multinationals are fewer in number than either U.S. or Japanese MNCs. Compared to the U.S. multinationals, Swedish MNCs are also smaller on average (Swedenborg, 1979), and their affiliates are less export-oriented (Blomström and Lipsey, 1986). Thus, they inevitably play a much smaller role in LDC exports. However, the trends in their activities pro-

vide an additional set of observations on multinationals' export activity in the developing countries.

Swedish investment in developing countries is concentrated in Latin America, the slower-growing of the two regions we compare, but exports were much larger from other areas, particularly Africa, before 1978. There was a rapid growth in the amount of Swedish multinationals' exports from Latin America, almost all from Brazil, and in the share (initially extremely small) of Swedish multinationals in Latin American exports of manufactures (Table 6). However, there were contrasting movements in Brazil and Mexico. In Brazil, whose share in world exports of manufactures rose between 1974 and 1978, the share of Swedish multinationals increased greatly. In Mexico, whose share of world manufactured exports was constant, the share of Swedish multinationals fell by almost a half.

Table 6

Share of Swedish Majority Owned Foreign Affiliates in Exports of Manufactures by All LDCs, Latin America, Brazil and Mexico (Percentages)

|               | 1965 | 1970 | 1974 | 1978 |
|---------------|------|------|------|------|
| All LDCs      | .07  | .07  | .10  | .10  |
| Latin America | .01  | .09  | .13  | .28  |
| Brazil        | NA   | NA   | .36  | .60  |
| Mexico        | NA   | NA   | .07  | .04  |

Source: Appendix Table 5

5. The Comparative Advantages of Multinationals' Affiliates in Developing Countries

A comparison of the industry distribution of exports by affiliates based in the three countries with those of their home countries and host countries should give some indication of the comparative advantage of the multinational firms operating in developing countries. It should also provide an indication as to whether the comparative advantage of these affiliates reflects mainly that of their home countries, or is some combination of the advantages of the firms and their host countries. The comparisons are shown in Table 7.

Table 7  
Industry Distribution of Manufactured Exports by Countries  
and by Foreign Affiliates<sup>a</sup>  
(Percentages)

|                 | <u>All LDCs</u> |      | <u>U.S.</u><br>1983 | <u>Japan</u><br>1983 | <u>Sweden</u><br>1978 | <u>LDC Affiliates of<br/>Multinationals Based in:</u> |              |               |
|-----------------|-----------------|------|---------------------|----------------------|-----------------------|---|--------------|---------------|
|                 | 1978            | 1983 |                     |                      |                       | <u>U.S.</u>   | <u>Japan</u> | <u>Sweden</u> |
|                 |                 |      |                     |                      |                       | 1983  | 1983         | 1978          |
| Foods           | 26.7            | 20.4 | 6.7                 | 1.0                  | 1.8                   | 6.8   | 4.1          | 0             |
| Chemicals       | 5.0             | 5.5  | 13.7                | 5.3                  | 5.8                   | 9.8   | 5.5          | 0.3           |
| Metals          | 11.1            | 12.4 | 7.6                 | 15.8                 | 14.4                  | 2.9   | 11.4         | 6.4           |
| Non-Elect Mach. | 3.1             | 4.8  | 20.9                | 14.1                 | 18.4                  | 14.6  | 2.8          | 26.1          |
| Elect Mach.     | 8.3             | 11.8 | 11.0                | 20.6                 | 9.4                   | 46.6  | 35.9         | 13.1          |
| Transp. Equip.  | 4.2             | 5.8  | 21.6                | 27.2                 | 18.3                  | 9.7   | 6.9          | 47.2          |
| Other Mfg.      | 38.7            | 39.2 | 18.6                | 16.0                 | 31.9                  | 9.6   | 33.3         | 6.8           |

<sup>a</sup>Data for Swedish affiliates are not available for years later than 1978.

Source: Appendix Tables 1 and 2.

Some conformities between a country's comparative advantages and those of the country's LDC affiliates are evident. All three developed countries have low shares of their exports in foods relative to the LDCs, and their affiliates do also. The U.S. has a comparative advantage in chemicals relative to the LDCs, Japan, and Sweden, and so do its affiliates. Japan has the highest share of exports in metals and the U.S. the lowest, and the same is true of their affiliates.

In machinery and transport equipment the relationships are a little more complicated. Non-electrical machinery is an industry in which the three developed countries clearly have a comparative advantage relative to the LDCs. In electrical machinery, however, the LDCs seem to have a comparative advantage relative to the U.S. and Sweden, but not relative to Japan. But U.S.-based LDC affiliates have almost half of their exports concentrated in this industry and Japanese affiliates a third. Thus, the combination of U.S. and Japanese firm characteristics (mainly technology) with LDC country characteristics (cheap labor) seems to be the optimum combination in this industry.

Transport equipment, like non-electrical machinery, is an industry in which all three of the developed countries appear to have some comparative advantage relative to the LDCs. U.S. and Japanese affiliates in LDCs, as in the case of non-electrical machinery, appear to possess some comparative advantage relative to the LDCs, but not relative to their home countries, as was true in non-electrical machinery. However, again as with non-electrical machinery, Swedish LDC affiliates had a strong comparative advantage relative to the home country; transport equipment accounted for close to half

of exports by Swedish-based LDC affiliates. We do not try to explain the data for other manufacturing because it is so heterogeneous, dominated, for example, by textiles and clothing in the LDCs, and by forest products and derivatives in Sweden.

More generally, it can be said that the distribution of exports of U.S. and Swedish affiliates is more like that of home-country exports than that of developing-country exports, even though these affiliates are producing in developing countries. Japanese affiliates, however, export products that are very different from Japanese exports and much more similar to those of the LDCs.

Table 8

Absolute Differences Between Shares of Industries  
in Exports of Affiliates in Developing Countries and in  
Exports of Home Countries and Developing Countries  
(Percentage Points)

|                 | <u>Home Country Shares</u> |              | <u>Differences from<br/>Developing Country Shares</u> |             |              |               |
|-----------------|----------------------------|--------------|---|-------------|--------------|---------------|
|                 | <u>U.S.</u>                | <u>Japan</u> | <u>Sweden</u>   | <u>U.S.</u> | <u>Japan</u> | <u>Sweden</u> |
| Foods           | .1                         | 3.1          | 1.8   | 13.6        | 16.3         | 26.7          |
| Chemicals       | 3.9                        | .2           | 5.5   | 4.3         | 0            | 4.7           |
| Metals          | 4.7                        | 4.4          | 8.0   | 9.5         | 1.0          | 4.7           |
| Non-Elect Mach. | 6.3                        | 11.3         | 7.7   | 9.8         | 2.0          | 23.0          |
| Elect Mach.     | 35.6                       | 15.3         | 3.7   | 34.8        | 24.1         | 4.8           |
| Transp. Equip.  | 11.9                       | 20.3         | 28.9  | 3.9         | 1.1          | 43.0          |
| Other Mfg.      | <u>9.0</u>                 | <u>17.3</u>  | <u>25.1</u>   | <u>29.6</u> | <u>5.9</u>   | <u>31.9</u>   |
| Total           | 71.5                       | 71.9         | 80.7  | 105.5       | 50.4         | 138.8         |

Source: Text Table 7

There is, thus, some confirmation here that Japanese operations in developing countries are quite different from those of other investors. They appear to bring less of the comparative advantage of the home country to the host country. However, a more detailed industry breakdown, particularly of "other manufacturing", would be needed to draw strong conclusions on this issue.

On the whole, the story seems to be that LDC affiliates reflect a mixture of home-country and host-country attributes. There are a few cases, however, such as U.S. and Japanese LDC affiliates in electrical machinery, and Swedish affiliates in non-electrical machinery and transport equipment, where the combination of company advantages and LDC country advantages produces a particularly high comparative advantage for the affiliates.

## 6. Conclusions

In contrast to Nayar (1978), we find that multinational firms have played an increasing role in leading the developing countries into world markets of manufactured goods in recent decades. Multinationals from the United States, Japan and Sweden all increased their share of LDC exports of manufactures between the early 1970s and the 1980s. The increase was particularly notable in Latin America, which suggests that multinational firms may play an important role in converting import-substituting industries to exporting.

The experience of the Asian NICs, on the other hand, shows that there are possibilities of fast export expansion by firms that have no equity participation by foreign-owned multinationals. Foreign direct investment

is not necessary for successful export-oriented manufacturing. Although the multinationals in these countries expanded their manufactured exports rapidly, local firms' exports grew as fast, or even faster.

The industries in which the multinationals increased their exports most rapidly were the two machinery industries and transport equipment. These were also the industries where these firms and their home countries had their comparative advantages relative to their host countries. Thus, if these avenues for the expansion of manufactured exports are chosen, we expect foreign direct investment to be an important underlying factor.

In less technologically oriented industries (such as foods, textiles, and clothing), where the multinationals have comparative disadvantages relative to the LDCs, locally-owned firms' exports were growing faster than those of the multinationals. Thus, if the LDCs choose these avenues for the expansion of manufactured exports, there seems to be less of a role for multinationals. However, even in some of these industries, while there is relatively little equity ownership by foreign firms, sub-contracting arrangements with foreign multinationals may play an important part, as Nayyar and others have noted.

The comparative advantage of U.S. and Swedish multinationals, as judged from the industry distribution of their exports, resembled that of their home countries more than that of their host countries, while that of Japanese affiliates was more similar to that of the host countries. In addition, there seemed to be some industries in which the affiliates seemed to combine the advantages of host countries and home countries.

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## APPENDIX A

### Definitions and Data Sources

The data on U.S. direct investment abroad are from the 1957, 1966, 1977, 1982 and 1983 surveys of U.S. multinational enterprises (U.S. Department of Commerce, 1960, 1975, 1981, 1985 and 1986). These are presumably quite complete censuses of U.S. direct investment abroad.

The Japanese data are from the MITI surveys (MITI, 1976 and 1986). These surveys are not complete censuses of Japanese foreign direct investment. The proportion of firms reporting varied substantially from one survey to another. In 1974, the responses included 50.2 per cent of parents, accounting for 78.4 per cent of the equity of companies with investment overseas approved by the Ministry of Finance. The ratios in 1983 were 38.1 per cent of parents, accounting for 57.3 per cent of equity. In our analysis of the Japanese data, we have adjusted for the coverage.

The data on Swedish foreign investment were taken from Swedenborg (1979) and (1982). They originate in surveys by the Industriens Utredningsinstitut (IUI) of Stockholm. The IUI has completed four surveys of Swedish multinationals covering 1965, 1970, 1974, and 1978. In general, the Swedish and U.S. surveys are comparable.

Host-country exports, by the industry classifications used in the direct investment surveys, were taken from the United Nations trade tapes and converted from the SITC to this industry classification. For this conversion, we used as a guide the Classifications and Cross-Classifications, U.S. Department of Commerce, 1974. There were some problems, however, in

making this adjustment. One was that no country's data contained the full detail needed to adjust the trade figures completely. A second was that there were variations from country to country in the degree of detail provided, and the comparisons among countries and of country data with data for multinationals therefore are not completely consistent. Thirdly, there were no detailed export data available for 1982 for Chile, India, Macao and Venezuela, or for 1983 for Ecuador, India, Peru and Venezuela, so we had to estimate them. Because the U.N. does not provide any data for Taiwan, we used a tape from the World Bank and, for 1982 and 1983, official Taiwanese trade data. We also adjusted U.S. export data for the underreporting of exports to Canada.

Because of the many country differences in the commodity detail provided, the following description of the adjustments is not applicable to every country. Some judgment had to be used in applying the desired adjustments, listed below, to the actual data.

#### Adjustments to Industry Data

##### 1. Food and kindred products

- SITC 0 (Food and Live Animals)
- + SITC 11 (Beverages)
- SITC 001 (Live animals)
- SITC 025 (Eggs)
- SITC 041, 043-045 (Unmilled cereals)
- SITC 051 (Fruits, fresh, and nuts, fresh or dried)
- SITC 054.1-054.5, 054.8 (Vegetables, fresh or simply prepared)
- SITC 061.1, 061.6 (Raw sugar, honey)
- SITC 072.1 (Cocoa beans, raw or roasted)
- SITC 081.1 (Hay and fodder, green or dry)
- + SITC 211 (Hides and skins (except furskins), undressed)
- SITC 211.8 (Waste and used leather)
- + SITC 221.9 (Flour and meal of oil seeds)
- + SITC 263.2 (Cotton linters)
- + SITC 4 (Animal and vegetable oils and fats)
- SITC 4313 (Acid oils and fatty acids)
- SITC 4314 (Waxes of animal or vegetable origin)

## 2. Chemicals

- SITC 5 (Chemicals)
- SITC 521.1 (Mineral tar)
- SITC 521.3 (Ammoniacal gas liquors)
- SITC 571.4 (Hunting and Sporting ammunition)
- + SITC 231.2 (Synthetic rubber)
- + SITC 241.2 (Wood charcoal)
- + SITC 266 (Synthetic and regenerated fibers)
- + SITC 276.3 (Salt)
- + SITC 431.3 (Acid oils and fatty acids)
- + SITC 431.4 (Waxes of animal or vegetable origin)

## 3. Primary and Fabricated Metals

- SITC 67 (Iron and steel)
- + SITC 68 (Nonferrous metals)
- + SITC 69 (Manufactures of metals)
- SITC 695.2 (Non-Agricultural tools for use in the hand or machines)
- SITC 697.1 (Domestic stoves, boilers, cookers, ovens, space-heaters)
- SITC 698.5 (Pins and needles of iron or steel, etc.)
- + SITC 321.8 (Coke and semi-coke)
- + SITC 521.1 (Mineral tar)
- + SITC 521.3 (Ammoniacal gas liquors)
- + SITC 571.4 (Hunting and sporting ammunition)
- + SITC 711.1 (Steam generating boilers)
- + SITC 711.2 (Boiler house plant)
- + SITC 711.7 (Nuclear reactors)
- + SITC 723.1 (Insulated wire and cable)
- + SITC 735.9 (Ships and boats, n.e.s.)
- + SITC 812.1 (Central heating apparatus)
- + SITC 812.3 (Sanitary and plumbing fixtures and fittings of iron or steel)
- + SITC 894.3 (Non-military arms)
- + SITC 951 (Firearms of war and ammunition therefore)

## 4. Non-Electrical Machinery

- SITC 71 (Machinery, other than electric)
- SITC 711.1 (Steam generating boilers)
- SITC 711.2 (Boiler house plant)
- SITC 711.4 (Aircraft engines)
- SITC 711.5 (Internal combustion engines, other than for aircraft)
- SITC 711.7 (Nuclear reactors)
- SITC 717.3 (Sewing machines)
- SITC 719.4 (Domestic appliances, non-electrical)
- + SITC 695.2 (Nonagricultural tools for use in the hand or in machines)
- + SITC 729.6 (Electro-mechanical hand-tools)

## 5. Electrical Machinery

- SITC 72 (Electrical machinery, apparatus and appliances)
- SITC 723.1 (Insulated wire and cable)
- SITC 729.5 (Electrical measuring and controlling instruments and apparatus)
- SITC 729.6 (Electro-mechanical hand-tools)
- + SITC 667.4 (Synthetic or reconstructed precious or semi-precious stones)
- + SITC 697.1 (Domestic stoves, boilers, cookers, ovens, space-heaters, n.e.s.)
- + SITC 717.3 (Sewing machines)
- + SITC 719.4 (Domestic appliances, non-electrical)
- + SITC 812.4 (Lighting fixtures and fittings, lamps, lanterns, and parts thereof)
- + SITC 891.1 (Phonographs and tape recorders)
- + SITC 891.2 (Phonograph records and recorded tapes)

## 6. Transport Equipment

- SITC 73 (Transport Equipment)
- SITC 733.4 (Invalid carriages, fitted with means of mechanical propulsion)
- SITC 735.8 (Ships, boats and other vessels for breaking up)
- SITC 735.9 (Ships and boats, n.e.s.)
- + SITC 711.4 (Aircraft engines)
- + SITC 711.5 (Internal combustion engines, other than for aircraft)

## 7. Other Manufacturing

### Textiles and Apparel, Leather and Leatherware:

- SITC 611-612 (Leather and leather manufactures)
- + SITC 65 (Textile yarn, fabrics, made-up articles and related products)
- + SITC 83 (Travel goods, hand bags and similar articles)
- + SITC 84 (Clothing)
- + SITC 85 (Footwear)
- + SITC 211.8 (Waste and used leather)
- + SITC 262.6-262.9 (Wool or other animal hair, carded or combed; wool waste; wool tops and shoddy)
- + SITC 263.3-263.4 (Cotton, carded or combed, and cotton waste)
- + SITC 267 (Waste materials from textile fabrics)

### Paper and Paper Products, Printing and Publishing

- SITC 25 (Pulp and waste paper)
- + SITC 64 (Paper, paperboard and manufactures thereof)
- + SITC 892 (Printed matter)

### Rubber and Plastic Products

- SITC 62 (Rubber manufactures, n.e.s.)
- + SITC 893 (Plastic products)
- + SITC 231.3-231.4 (Reclaimed rubber, waste and scrap rubber)

Lumber, Wood Products, Furniture and Fixtures

- SITC 242 (Wood in the rough or roughly squared)
- + SITC 243 (Wood, shaped or simply worked)
- + WITC 63 (Wood and cork manufactures)
- + SITC 82 (Furniture)

Non-Metallic Mineral Products, Including Glass

- SITC 661 (Lime, cement, and fabricated building materials, except glass and clay)
- + SITC 662 (Clay construction materials and refractory construction materials)
- + SITC 663 (Mineral manufactures, n.e.s.)
- + SITC 664 (Glass)
- + SITC 665 (Glassware)
- + SITC 666 (Pottery)
- + SITC 275.1 (Industrial diamonds)
- + SITC 812.2 (Sinks, wash basins, bidets, baths, and other sanitary and plumbing fixtures and fittings of ceramic materials)

Instruments and Related Products

- SITC 86 (Professional, scientific, and controlling instruments)
- + SITC 729.5 (Electrical measuring and controlling instruments and apparatus)
- + SITC 733.4 (Invalid carriages, fitted with means of mechanical propulsion)

Other Industries

- SITC 613 (Fur skins, tanned or dressed)
- + SITC 667 (Pearls and precious and semi-precious stones, unworked or worked)
- SITC 667.4 (Synthetic or reconstructed precious or semi-precious stones, not set or strung)
- + SITC 698.5 (Pins and needles of iron or steel and base metal fittings for apparel and travel goods)
- + SITC 891.4-891.9 (Musical instruments and parts)
- + SITC 894 (Perambulators, toys, games and sporting goods)
- SITC 894.3 (Non-military arms)
- + SITC 895 (Office and stationery supplies)
- + SITC 897 (Jewellery and goldsmith's and silversmith's wares)
- + SITC 899 (Manufactured articles, n.e.s.)

Appendix Table 1

Manufactured Exports by Developing Countries  
By Industry, Selected Years, 1966-1983  
(million dollars)

| Year  | Total<br>Mfg. | Foods  | Chemicals | Metals | Machinery               |                 | Transport<br>Equipment | Other<br>Mfg. |
|---|---------------|--------|-----------|--------|-------------------------|-----------------|------------------------|---------------|
|   |               |        |           |        | Non-<br>Elec-<br>trical | Elec-<br>trical |                        |               |
| <u>Tobacco Products Included with Other Manufacturing</u> |               |        |           |        |                         |                 |                        |               |
| 1966  | 12,500        | 5,726  | 418       | 2,386  | 130                     | 194             | 116                    | 3,531         |
| 1974  | 53,708        | 15,532 | 3,460     | 8,994  | 1,455                   | 3,565           | 1,338                  | 19,362        |
| 1977  | 85,004        | 28,484 | 4,162     | 9,503  | 2,209                   | 6,424           | 2,903                  | 31,320        |
| 1982  | 146,157       | 31,929 | 10,926    | 16,113 | 6,498                   | 14,775          | 9,195                  | 56,752        |
| 1983  | 149,889       | 30,651 | 8,245     | 18,586 | 7,178                   | 17,709          | 8,740                  | 58,779        |
| <u>Tobacco Products Included with Foods</u>               |               |        |           |        |                         |                 |                        |               |
| 1965  | 10,685        | 5,277  | 383       | 1,683  | 92                      | 137             | 113                    | 3,000         |
| 1970  | 21,550        | 8,143  | 813       | 4,323  | 366                     | 725             | 309                    | 6,870         |
| 1974  | 53,708        | 15,648 | 3,460     | 8,994  | 1,455                   | 3,565           | 1,338                  | 19,247        |
| 1978  | 98,587        | 19,252 | 4,958     | 10,935 | 3,007                   | 8,182           | 4,127                  | 38,126        |

Source: U.N. Trade Tapes. For explanation of data, see Appendix A.

Appendix Table 2

Manufactured Exports from Developing Countries  
by U.S., Japanese and Swedish Multinationals  
By Industry, Selected Years, 1966-1983  
(million dollars)

| Year  | Total<br>Mfg. | Foods | Chemicals | Metals | Machinery               |                 | Transport<br>Equipment | Other<br>Mfg. |
|---|---------------|-------|-----------|--------|-------------------------|-----------------|------------------------|---------------|
|   |               |       |           |        | Non-<br>Elec-<br>trical | Elec-<br>trical |                        |               |
| <u>U.S. Affiliates<sup>a</sup></u>                              |               |       |           |        |                         |                 |                        |               |
| 1966  | 578           | 257   | 96        | 73     | 49                      |                 | 8                      | 95            |
| 1977  | 5,495         | 696   | 465       | 454    | 427                     | 2,375           | 409                    | 670           |
| 1982  | 11,281        | 866   | 1,309     | 602    | 1,234                   | 5,187           | 914                    | 1,170         |
| 1983  | 11,348        | 769   | 1,110     | 326    | 1,660                   | 5,283           | 1,100                  | 1,101         |
| <u>Japanese Affiliates<sup>b</sup>, as Reported<sup>c</sup></u> |               |       |           |        |                         |                 |                        |               |
| 1974  | 1,479         | 163   | 68        | 62     | 39                      | 452             | 61                     | 635           |
| 1983  | 4,850         | 198   | 265       | 555    | 138                     | 1,743           | 334                    | 1,617         |
| <u>Japanese Affiliates, Adjusted for Coverage<sup>d</sup></u>   |               |       |           |        |                         |                 |                        |               |
| 1974  | 1,886         | 208   | 87        | 79     | 50                      | 576             | 78                     | 810           |
| 1983  | 8,464         | 346   | 462       | 969    | 241                     | 3,042           | 583                    | 2,822         |
| <u>Swedish Affiliates<sup>a</sup></u>                           |               |       |           |        |                         |                 |                        |               |
| 1978  | 95.1          | 0     | .3        | 6.1    | 24.8                    | 12.5            | 44.9                   | 6.5           |

<sup>a</sup>Majority-owned foreign affiliates

<sup>b</sup>All foreign affiliates

<sup>c</sup>The proportion of firms reporting varied substantially from one survey to another. In 1974, the responses included 50.2 per cent of parents, accounting for 78.4 per cent of the equity of companies with investment overseas approved by the Ministry of Finance. The ratios in 1983 were 38.1 per cent of parents, accounting for 57.3 per cent of equity.

<sup>d</sup>Reported figures multiplied by 100/78.4 for 1974 and by 100/57.3 for 1983. We have no information on coverage by sector and had to assume that the same coverage applied to all sectors.

Source: U.S. data from Lipsey and Kravis (1986), with revised data from U.S. Department of Commerce (1986); Japanese data from MITI (1976) and (1986); and Swedish data from Swedenborg (1982) and shares for developed countries in Blomström and Lipsey (1986).

Appendix Table 3

Exports of Manufactures by Country of Origin, Selected Years, 1966-1983  
(million dollars)

|  | 1966  | 1974   | 1977   | 1982        | 1983    |
|--|-------|--------|--------|-------------|---------|
| <u>Exports by all firms</u>  |       |        |        |             |         |
| Latin America  | 4,770 | 14,903 | 23,951 | 35,971      | 33,863  |
| Brazil   | 1,195 | 4,349  | 8,735  | 14,907      | 16,793  |
| Mexico   | 519   | 1,948  | 2,393  | 3,015       | 4,445   |
| Developing Asia <sup>a</sup>   | 5,310 | 27,435 | 46,665 | 93,749      | 103,803 |
| Hong Kong  | 983   | 4,426  | 7,421  | 13,425      | 13,898  |
| Korea  | 185   | 4,102  | 9,462  | 21,072      | 23,775  |
| Singapore  | 496   | 2,882  | 4,406  | 11,894      | 12,568  |
| Taiwan   | 389   | 5,141  | 8,936  | 21,035      | 24,496  |
| <u>Exports by U.S. affiliates<sup>b</sup></u>                              |       |        |        |             |         |
| Latin America  | 362   | --     | 2,341  | 4,692       | 4,540   |
| Brazil   | 39    | --     | 994    | 2,105       | 2,067   |
| Mexico   | 49    | --     | 488    | 1,023       | 1,223   |
| Developing Asia <sup>a</sup>   | 207   | --     | 2,921  | 6,155-6,319 | 6,337   |
| Hong Kong  | --    | --     | 600    | 878         | 783     |
| Korea  | --    | --     | 128    | 260         | 303     |
| Singapore  | --    | --     | 822    | 1,723       | 2,185   |
| Taiwan   | --    | --     | 558    | 889         | 965     |
| <u>Exports by Japanese affiliates<sup>c</sup>, as reported<sup>d</sup></u> |       |        |        |             |         |
| Latin America  | --    | 123    | --     | --          | 592     |
| Developing Asia <sup>a</sup>   | --    | 1,343  | --     | --          | 4,086   |
| <u>Exports by Japanese affiliates, adjusted for coverage<sup>d</sup></u>   |       |        |        |             |         |
| Latin America  | --    | 157    | --     | --          | 1,033   |
| Developing Asia <sup>a</sup>   | --    | 1,713  | --     | --          | 7,131   |

<sup>a</sup>Excluding the Middle East

<sup>b</sup>Majority-owned foreign affiliates

<sup>c</sup>All foreign affiliates

<sup>d</sup>See notes c and d to Appendix Table 3

(-) not available

Source: U.N. trade tapes, U.S. Department of Commerce (1975), (1981), (1985) and (1986), and MITI (1976) and (1986).

Appendix Table 4

Exports of Manufactures by Japanese Affiliates and their Host Countries  
(million dollars)

| Year  | Total<br>Mfg. | Foods  | Chemicals | Metals | Machinery               |                 | Transport<br>Equipment | Other<br>Mfg. |
|---|---------------|--------|-----------|--------|-------------------------|-----------------|------------------------|---------------|
|   |               |        |           |        | Non-<br>Elec-<br>trical | Elec-<br>trical |                        |               |
| <u>Exports by Japanese Affiliates</u>                                 |               |        |           |        |                         |                 |                        |               |
| <u>Latin America, as Reported<sup>b</sup></u>                         |               |        |           |        |                         |                 |                        |               |
| 1974  | 123           | 20     | 24        | 8      | 0                       | 5               | 9                      | 60            |
| 1983  | 592           | 29     | 33        | 283    | 19                      | 3               | 31                     | 194           |
| <u>Latin America, Adjusted for Coverage<sup>b</sup></u>               |               |        |           |        |                         |                 |                        |               |
| 1974  | 157           | 26     | 31        | 10     | 0                       | 6               | 11                     | 77            |
| 1983  | 1,033         | 51     | 58        | 494    | 33                      | 5               | 54                     | 339           |
| <u>Developing Asia<sup>a</sup></u>                                    |               |        |           |        |                         |                 |                        |               |
| 1974  | 1,343         | 140    | 43        | 54     | 36                      | 448             | 52                     | 569           |
| 1983  | 4,086         | 168    | 181       | 180    | 119                     | 1,740           | 303                    | 1,395         |
| <u>Developing Asia<sup>a</sup>, Adjusted for Coverage<sup>b</sup></u> |               |        |           |        |                         |                 |                        |               |
| 1974  | 1,713         | 179    | 55        | 69     | 46                      | 571             | 66                     | 726           |
| 1983  | 7,131         | 293    | 316       | 314    | 208                     | 3,037           | 529                    | 2,435         |
| <u>Exports by Host Countries</u>                                      |               |        |           |        |                         |                 |                        |               |
| <u>Latin America</u>  |               |        |           |        |                         |                 |                        |               |
| 1974  | 14,903        | 6,105  | 1,125     | 3,540  | 516                     | 357             | 557                    | 2,703         |
| 1983  | 33,863        | 14,283 | 2,792     | 6,591  | 1,133                   | 649             | 2,893                  | 5,523         |
| <u>Developing Asia<sup>a</sup></u>                                    |               |        |           |        |                         |                 |                        |               |
| 1974  | 27,435        | 5,317  | 949       | 2,514  | 832                     | 3,105           | 610                    | 14,109        |
| 1983  | 103,803       | 12,736 | 3,754     | 10,489 | 5,771                   | 16,893          | 5,404                  | 48,756        |

<sup>a</sup>Excluding the Middle East.

<sup>b</sup>See notes c and d to Appendix Table 3.

Source: U.N. Trade Tapes and MITI (1976) and (1986).

Appendix Table 5

Exports of Manufactures by Swedish Affiliates<sup>a</sup>  
and their Host Countries  
(million dollars)

|               | 1965   |     | 1970   |      | 1974   |      | 1978   |      |
|---------------|--------|-----|--------|------|--------|------|--------|------|
|               | A      | B   | A      | B    | A      | B    | A      | B    |
| All LDCs      | 10,686 | 7.9 | 21,550 | 18.0 | 53,708 | 53.0 | 98,586 | 95.1 |
| Latin America | 4,262  | .6  | 7,158  | 6.8  | 14,903 | 19.3 | 27,242 | 76.3 |
| Brazil        | 1,111  | NA  | 1,833  | NA   | 4,349  | 15.7 | 9,804  | 59.2 |
| Mexico        | 441    | NA  | 745    | NA   | 1,948  | 1.3  | 3,239  | 1.4  |

(A) Host country exports

(B) Swedish affiliate exports

<sup>a</sup>Majority-owned foreign affiliates

Source: Swedenborg (1982), Tables D:4 and D:5, translated into \$U.S. at current exchange rates.