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THE EXPORT PERFORMANCE OF
SWEDISH AND U.S. MULTINATIONALS

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The Export Performance of Swedish and U.S. Multinationals

ABSTRACT

While the U.S. and Sweden both lost more than 20 per cent of their shares of world and developed countries' exports of manufactures over the 15 years or so after the mid-1960's, the export shares of their multinational firms stayed fairly stable or even increased. The multinationals, while first increasing and then holding fairly constant their shares of exports by their home countries, raised the proportion of their worldwide exports that they supplied from their overseas affiliates. These developments suggest that the declining trade shares of the U.S. and Sweden were not due mainly to deterioration in the innovativeness or inventiveness of American and Swedish firms or declines in their management ability or in their technological capabilities, but rather to economic developments in the firms' home countries.

The finding that firms have done better as exporters than their home countries is strengthened when we look at different industry groups. In both the U.S. and Sweden, and in all industry groups, with one exception, the multinationals' export shares increased relative to those of their home countries. The margins were often wide, and were mostly larger for Swedish firms than for U.S. firms.

In general, though the basic story was quite similar for the U.S. and Sweden, there were some notable differences. One was that the share of exports originating in affiliates was lower for Sweden than for the U.S. To a large extent, this difference in the siting of export production reflected the much greater export orientation of Swedish parents relative to U.S. parents, presumably a consequence of the relatively small size of the Swedish domestic market. Another difference between U.S. and Swedish multinationals was that while the U.S. firms' share in world manufacturing exports remained stable over the studied period, the Swedish firms' share rose by 14 per cent. We are so far not in a position to say whether this was because Swedish firms increased their competitiveness more than U.S. firms or because there was a higher conversion of Swedish firms into multinational status.

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THE EXPORT PERFORMANCE OF SWEDISH AND U.S. MULTINATIONALS

Magnus Blomström and Robert E. Lipsey*

Introduction

Most governments worry about the competitiveness of their economies, and Sweden and the U.S. are no exceptions, particularly since they have both gone through episodes in which their shares in world trade have declined sharply. Trade theory traditionally assigns the responsibility for such changes to macroeconomic developments such as inflationary monetary policy or expansive fiscal policy. There is also another strand of literature that attributes these changes to more "structural" characteristics of an economy, in the sense that they are more deeply imbedded and long-term, and not subject to manipulation by macroeconomic policy. These include the income elasticity of demand for the country's products and changes in the productivity of the country and its firms relative to that of their competitors. Some recent discussions of U.S. trade problems have emphasized factors of the second type, in particular supposed changes in the character of U.S. firms, such as deteriorations in

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their innovativeness or inventiveness, in their management abilities, and in their technological capabilities (See e.g. Abernathy et al., 1983, and Thurow, 1985).

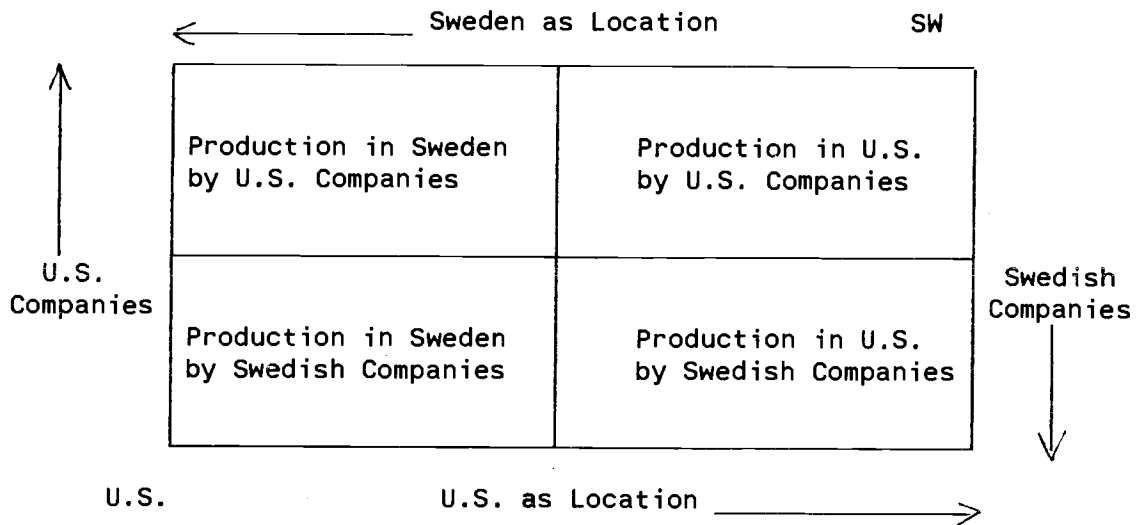
This last type of competitive factor has been given a somewhat different role in recent literature on direct investment. These are the elements of the competitiveness and comparative advantage of individual firms that enable them to produce outside their own countries in competition with local firms that presumably have the advantage of knowledge of local markets and the favor of local consumers and governments. Thus, these elements of competitiveness and comparative advantage are treated in the literature on multinationals as belonging to firms rather than countries, and as being readily transferable by firms from country to country within the firm (See e.g. Dunning, 1981). The more transferable these attributes are geographically, the less they can be the basis for national competitiveness and comparative advantage.

An implication for national trade policy is that factors that contribute to firm competitiveness and comparative advantage will not necessarily contribute to national competitiveness and comparative advantage. Subsidies to R & D, to innovation, or to management or technical training may enhance the competitiveness of national firms in world markets, but that competitiveness may be exploited by producing outside the home country.

A corresponding implication is that the factors producing firm comparative advantages should be studied by examining measures of the competitiveness and comparative advantage of firms rather than that of their home countries. And any large difference between the trade performance of a country and that of the firms based in it helps us to determine whether the respon-

sibility for changes lies with macroeconomic policy or with the determinants of firm advantages such as management or technology.

A simple illustration of this distinction and of the pattern of ownership and location of production expected from it is presented in the diagram below for the U.S. and Sweden alone. Country comparative advantage is shown on the horizontal axis, and company comparative advantage on the vertical axis, and the arrows show increasing comparative advantage.



The combination of U.S. country and U.S. company comparative advantage results in home production by U.S. companies while the combination of Swedish country and company comparative advantage results in home production by Swedish companies. The combination of U.S. company comparative advantage with a location advantage for Sweden as a country results in production in Sweden by U.S.-owned companies while the combination of Swedish company comparative advantage with location advantage for the U.S. results in production in the U.S. by Swedish companies. The location advantage

might rest on factor abundance or prices or on access to that country's market or closeness to other markets.

There are various ways we could observe U.S. and Swedish competitiveness and comparative advantage and those of their firms, and compare them with those of the world as a whole or of particular countries. We could compare U.S. and Swedish shares in world production or exports, shares of the two countries as exporters to particular markets, or shares of U.S. and Swedish firms as producers in or exporters from individual country markets. In the last case, we could be comparing the two countries' firms, holding constant the characteristics of the country in which the production is located.

In this paper we have concentrated on competition on the world market and comparisons with the world as a whole and developed countries as a group. And we have measured competitiveness and comparative advantage by exports rather than by production.

The main advantage of using exports rather than production for this purpose is that exports are somewhat more footloose. A country has more power to determine which producers supply its home market than which supply export markets. We suspect, therefore, that shares in export markets represent the underlying advantages of firms to a greater degree than do shares in domestic markets.

That is not to say that export markets are unaffected by government interventions or other non-economic factors. There have been many complaints in the U.S. about export requirements and subsidies imposed on or offered to U.S. affiliates, especially in developing countries. It is more that these export promoting policies are circumscribed by the ability of companies to

move their export production to other locations, if the policies impose too large costs on them, and by the watchfulness of other countries over their home and export markets.

Ideally, we should examine a variety of measures of firms' competitiveness. A drawback of the export measure is that it ignores differences in the tradability of products. The skills of U.S. food companies in advertising and promotion that enable them to operate in many countries are probably undervalued by this measure because the products are traded very little. Measures of production, consumption, or employment shares might reflect some of these advantages better but have drawbacks of their own, including greater difficulty in assembling comparable data and the greater susceptibility of production for the host-country market to manipulation by government interventions.

There are several advantages of using the U.S. and Sweden for comparative study. The two countries are similar in several respects. Both are highly industrialized and are homes to major multinational firms. In both countries, these firms account for large shares of manufacturing industry and trade. Furthermore, the trade of both countries is biased toward high R & D industries. Finally, both countries provide us with comprehensive data on the activities of their multinationals.¹

There are also some major differences between the U.S. and Sweden that should be noted. Swedish firms are typically smaller when they venture abroad for the first time than are American firms, Swedish multinationals supply their foreign markets from their home production to a much greater extent than

¹The data on U.S. direct investment abroad are mainly from the 1957, 1966, 1977, and 1982 surveys of U.S. multinational enterprises (U.S. Department of Commerce, 1960, 1975, 1981, and 1985). The data on Swedish foreign investment come from the Industriens Utredningsinstitut (IUI) of Stockholm and have been

do U.S. multinationals, and import very little from their foreign manufacturing operations (Swedenborg, 1979, Chapter 3). Some of these differences reflect the fact that the Swedish home market is so much smaller than the U.S. market--no more than 3 or 4 per cent in population or income. There are also substantial differences between Sweden and the U.S. with respect to policy towards multinationals. The Swedish government has regulated both outward and inward foreign investment much more directly than the U.S. government. In particular, Swedish firms have been prohibited since the early 1970s from financing their foreign subsidiaries with Swedish capital. No similar regulations have governed U.S. firms for most of the period.

The remainder of the paper proceeds as follows. First we examine the international competitiveness of the U.S. and Sweden and of their firms for manufacturing industries as a whole and then for broad industry groups. We continue by characterizing the comparative advantages of U.S. and Sweden and of U.S. and Swedish multinationals and analyze changes in these comparative advantages. Finally, we discuss some implications of our findings.

analyzed in a series of volumes by Birgitta Swedenborg (1973, 1979, and 1982). The IUI has completed four surveys of Swedish multinationals covering 1965, 1970, 1974, and 1978. In general, the surveys are comparable, but there is a difference in the definition of a multinational enterprise which should be mentioned. In the Swedish data, parents must have majority-owned production affiliates abroad in order to be included in the sample. The U.S. surveys, on the other hand, use a broader definition, including also firms with only minority interests and/or sales affiliates abroad. For 1970, when information based on the broader definition is available also for Sweden, the firms excluded by the narrower definition accounted for some 25 per cent of exports from Sweden by Swedish parent firms. This means that we understate the role of multinationals in Swedish exports as compared with that of U.S. multinationals in U.S. exports. And if there was a shift among Swedish firms from having only sales affiliates abroad into production abroad, it would exaggerate the rise in export shares of Swedish multinationals, as compared with U.S. multinationals.

The International Competitiveness of the U.S. and Sweden and of Their Firms

The U.S. and Sweden both declined in competitiveness from the mid-1960's to the early 1980's, if we define competitiveness as shares of world or developed country exports.² Swedish export shares declined by about 26 - 29 per cent between 1965 and 1982, while the U.S. shares fell by 15 - 19 per cent over the same period.

| | Shares (%) of Exports from | | | |
|------|----------------------------|--------|---------------------|--------|
| | World | | Developed Countries | |
| | U.S. | Sweden | U.S. | Sweden |
| 1957 | 21.3 | | 25.7 | |
| 1965 | 17.7 | 3.08 | 19.5 | 3.40 |
| 1966 | 17.5 ^a | | 19.4 ^b | |
| 1970 | | 2.96 | | 3.29 |
| 1974 | | 2.89 | | 3.22 |
| 1977 | 13.3 | | 15.1 | |
| 1978 | 13.0 | 2.41 | 14.5 | 2.72 |
| 1982 | 14.3 | 2.19 | 16.5 | 2.52 |
| 1983 | 13.9 | | 16.2 | |

^aRatio comparable to 1957 is 16.4

^bRatio comparable to 1957 is 18.7

Source: Appendix Table S-15

There was a temporary reversal of the decline in the case of the U.S. between 1978 and 1982, but none for Sweden. One can think of these declines as reflecting to a large extent, the declines of Swedish and U.S. shares of world output. The Swedish share of output fell by almost 20 per cent relative to

²This definition of competitiveness is questionable for a number of reasons (see Lipsey, 1984). However, for our purpose here of comparing the performance of countries and their firms, we think it is a reasonable approximation.

| | Shares (%) of World and and Industrial Country Output | | | |
|------|--|--------|-----------------------|--------|
| | World | | Industrial Country | |
| | U.S. | Sweden | U.S. | Sweden |
| 1960 | 31.4 | 1.04 | 43.8 | 1.45 |
| 1965 | 30.9 | 1.05 | 42.9 | 1.46 |
| 1970 | 27.7 | .99 | 39.1 | 1.39 |
| 1975 | 25.8 | .94 | 37.7 | 1.37 |
| 1980 | 25.0 | .82 | 37.5 | 1.23 |

Source: Appendix Table S-4

the world and 13 per cent relative to industrial countries in the 15 years from 1965 to 1980, while the U.S. shares fell by 22 and 16 per cent.

In contrast to the decline in country competitiveness, the shares in world exports of firms based in the two countries fell by much less and the shares of their multinational firms stayed fairly steady or even increased.

| | Shares (%) of Multinational Firms, including Majority-Owned Affiliates in World Exports of Manufactures | |
|------|---|---------|
| | U.S. | Swedish |
| 1965 | | 1.62 |
| 1966 | 17.7 | |
| 1970 | | 2.01 |
| 1974 | | 2.01 |
| 1977 | 17.6 | |
| 1978 | | 1.84 |
| 1982 | 17.7 | |
| 1983 | 17.7 | |

Source: Lipsey and Kravis (1986) and Appendix Table S-2

U.S. multinationals' share in world exports was virtually unchanged over 16 years while the U.S. share fell by 18 per cent. Swedish multinationals' share rose by 14 per cent in 13 years while the share of Sweden itself fell by 20 per cent. In the last four years, there was some decline for Swedish multi-

nationals, but it was smaller than that for Sweden.

A change in the share of multinationals can take place in two ways. One is a shift of firms into or out of multinational status. The other is a change in the competitiveness of those firms that are initially multinational and remain so. The population of U.S. parent firms was stable, or even declined slightly between 1966 and 1977, and then declined substantially between 1977 and 1982 (Lipsev and Kravis, 1986, Table U-10). Thus, for the U.S., the stability or rise in the competitiveness of multinationals was not the result of a movement into multinational operations by firms that had not been multinational before.

For Sweden, the story is not so clear. The number of Swedish firms with production affiliates abroad rose from 82 in 1965 to 118 in 1978 (Swedenborg, 1982, Table 3.2, p. 38). Of these, 47 were in the group continuously. Another 17 disappeared, but in effect remained because they were merged into other firms in the multinational group. There were about 40 genuine disappearances and 94 new entrants to the multinational class, a number that suggests the possibility that the aggregate was substantially affected by the conversion of firms to multinational status.

That question can be at least partially resolved by comparing these measures of competitiveness for all Swedish multinationals with corresponding ones for a fixed group of the largest multinationals:

| | <u>1965</u> | <u>1978</u> | <u>1983</u> |
|--|-------------|-------------|-------------|
| Parent Exports as % of World Exports | | | |
| All Swedish multinationals | 1.45 | 1.49 | NA |
| 28 firms | 1.09 | 1.07 | 1.07 |
| Parent Exports as % of DC Exports | | | |
| All Swedish multinationals | 1.60 | 1.68 | NA |
| 28 firms | 1.20 | 1.20 | 1.26 |
| Parent and Majority-owned Affil. Exports as % of World Exp. | | | |
| All Swedish multinationals | 1.62 | 1.84 | NA |
| 28 firms | 1.21 | 1.32 | NA |

Source: Appendix Tables S-2 and S-3

From these data it appears that changes in the status of firms do not account for the rising share of multinationals. The stability or rise in competitiveness for the fixed panel of 28 firms is similar to the trend for all Swedish multinationals, partly because these 28 are the larger firms. The trend for these 28 firms may tend to be tilted upward because they have absorbed other multinationals during the period, but it is diluted, on the other hand, by the absorption of non-multinational firms. We cannot say, therefore, without a more detailed study, whether mergers raise or lower the trend for these firms.

The similarity in the experience of Swedish and U.S. multinationals extends to the shares of home-country exports. These rose in both countries from the

| | <u>Parent Exports as % of Home-Country Exports</u> | | |
|------|--|---------------|-----------------|
| | <u>U.S.</u> | <u>Sweden</u> | |
| | | <u>Total</u> | <u>28 Firms</u> |
| 1965 | | 47.0 | 35.3 |
| 1966 | 62.7 | | |
| 1970 | | 59.3 | |
| 1974 | | 58.6 | |
| 1977 | 69.4 | | |
| 1978 | | 61.8 | 44.6 |
| 1982 | 66.2 | | |
| 1983 | 65.2 | | 54.0 |

Source: Lipsey and Kravis (1986) and Appendix Tables S-2 and S-3

mid-1960's to the late 1970's. The 28-firm data for Sweden show a continuation of that rise through 1983, but the aggregate data for the U.S. show a decline from 1977 to 1982 and 1983.

The apparent decline in the share of multinationals in U.S. exports reflects, to some degree, changes in the list of multinational firms. The cutoff point below which full data for affiliates did not have to be reported was increased from \$500,000 in 1977 to \$3 million in 1982. Any parent firm with no affiliates above the cutoff size was exempt from reporting. Therefore, there may have been some illusory reduction in the list of parent firms. However, there was also some real movement of firms away from overseas activity, and we are not sure at this point how much of the apparent decline in participation in overseas activity is real and how much is an artifact of the change in reporting requirements.

Another parallel between the Swedish and U.S. multinationals is the rise in shares of world exports accounted for by their affiliates. That share increased rapidly until at least the mid-1970's in both countries. There was some slowdown in the 1974-78 period in Sweden and no change for U.S. majority-owned affiliates between 1977 and 1982.

| | Share (%) of Majority-Owned Affiliates in World (Other than Parent-Country) Exports | |
|------|--|--------|
| | U.S. | Sweden |
| 1957 | 5.8 | |
| 1965 | | 0.17 |
| 1966 | 8.2 ^a | |
| 1970 | | 0.26 |
| 1974 | | 0.33 |
| 1977 | 9.7 | |
| 1978 | | 0.36 |
| 1982 | 9.7 | |
| 1983 | 10.0 | |

^aRatio comparable to 1957 is 7.9%

Source: Lipsey and Kravis (1986) and Appendix Table S-2

This rapid rise in the affiliates' share of world trade while that of the multinationals as a whole was increasing slowly or holding steady implies that multinationals in both countries were shifting their production for export, in percentage terms, from their home countries to the host countries in which their affiliates were operating.

| | Share (%) of Majority-Owned Affiliates in Total Exports of Parents and Affiliates | | |
|------|--|-----------------------|-------------|
| | U.S. | Sweden | |
| | | All Multinationals | 28 Firms |
| 1965 | | 10.4 | 9.7 |
| 1966 | 38.1 | | |
| 1970 | | 12.5 | |
| 1974 | | 15.9 | |
| 1977 | 47.7 | | |
| 1978 | | 19.3 | 18.9 |
| 1982 | 46.7 | | |
| 1983 | 48.7 | | |

Source: Lipsey and Kravis (1986) and Appendix Tables S-2 and S-3

Among U.S. multinationals, there was a large shift toward exporting from affiliates between 1966 and 1977 but little change in the next five years.

The shift to exporting from foreign affiliate production rather than from home production was even stronger for Swedish firms than for U.S. firms, but it started from a much lower base. The share of multinational firm exports coming from affiliates was much lower throughout the period for Swedish firms, starting from a quarter of the U.S. share in 1965.³ The lower ratio for Swedish firms was not primarily the result of a greater export orientation of U.S. affiliates than of Swedish affiliates, although the U.S. affiliates were somewhat more export oriented (exports were 31 per cent of U.S. affiliates' sales in 1977 as compared to 24 per cent for Swedish affiliates in 1978). The explanation is to be found in the greater export orientation of Swedish parents than of U.S. parents. Over 50 per cent of Swedish parents' sales were exported in 1978, while U.S. parents exported less than 10 per cent of their sales in 1977. This divergence between the Swedish and U.S. parents appears despite the omission from the Swedish data of parents with only sales affiliates abroad. This difference may be one explanation of the high share of Swedish foreign investment in "marketing activities" that was reported in Eliasson et al. (1985). However, the increase in affiliate shares of Swedish multinationals' exports was notable: an 84 per cent jump for Swedish multinationals as a group and almost a doubling among the 28 large firms.

Competitiveness Within Industry Groups

The declines in the competitiveness of the U.S. and Sweden, as manifested in their falling shares of world exports during the decade or so ending in the late 1970's, were reflected in similar declines within broad industry groups.

³See also the discussion in Swedenborg (1979, Chapter 3). The share of affiliates in exports of Swedish multinationals would have been even lower if it had been measured on the U.S. definition, as mentioned above.

Changes in Shares in World^a & Developed Country^b
Exports of Manufactures

| | World | | | U.S. | | | Sweden | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------|-------------------|
| | | | | Developed Country | | | World | Developed Country |
| | <u>1978</u> 1965 | <u>1977</u> 1966 | <u>1982</u> 1966 | <u>1978</u> 1965 | <u>1977</u> 1966 | <u>1982</u> 1966 | 1978/1965 | |
| Food and Kindred Products ^c | .74 | .78 | .82 | .73 | .81 | .77 | .71 | .69 |
| Chemicals and Allied Prod. | .67 | .69 | .75 | .68 | .70 | .79 | 1.02 | 1.04 |
| Metals | .56 | .57 | .69 | .56 | .56 | .68 | .94 | .94 |
| Machinery | .69 | .75 | .84 | .72 | .78 | .90 | .81 | .84 |
| Nonelectrical | .70 | .77 | .90 | .72 | .78 | .93 | .80 | .82 |
| Electrical | .70 | .73 | .78 | .77 | .80 | .88 | .85 | .94 |
| Transport Equipment | .73 | .73 | .67 | .75 | .75 | .76 | .72 | .73 |
| Other Mfg. ^c | .79 | .79 | .86 | .87 | .87 | .98 | .66 | .73 |
| All Mfg. | .74 | .76 | .81 | .76 | .77 | .85 | .78 | .80 |

^aAll market economies

^bDeveloped market economies

^cTobacco products included with Food and Kindred Products in Swedish data and with Other Mfg. in U.S. data

Source: Appendix Table S-15

Overall, the competitiveness of Swedish manufacturing declined a little less during that decade than that of the U.S., and much less in chemicals (where it actually increased), metals, and electrical machinery. The roughly equivalent performance in manufactured goods as a whole suggests, as will be discussed later, that U.S. comparative advantage was tilted more than that of Sweden towards industries growing faster in world trade.

The performance of both countries looks somewhat more favorable compared with that of developed countries than in comparison with all market economies, because the developing countries were expanding their exports of manufactures more rapidly than the developed ones. That was the case particularly for electrical machinery and other manufacturing. Relative to deve-

veloped countries, Sweden's share in chemicals exports rose by four percentage points and it fell by only six percentage points in metals and electrical machinery, the "best" performing Swedish industries in this sense. In the case of the U.S. it was the two machinery industries that held their shares best in most comparisons and the metals industries that fared the worst. The extension of the U.S. data to 1982 produced an improvement for the U.S. not only overall but also in most industry groups.

Our main interest in these country competitiveness measures is in the comparison with those for the two countries' multinational firms, shown below. As was pointed out earlier, U.S.-based multinationals' shares in world manufacturing exports were essentially stable while the Swedish multinationals' shares increased. However, the U.S. multinationals' shares probably come closer to representing the competitiveness of a fixed or even declining group of firms; the rising share of Swedish-based firms may include some effects of shifts into multinational status by Swedish firms.

Changes in Shares of U.S. and Swedish Multinationals in World^a and Developed-Country^b Exports of Manufactures

| | U.S. Firms | | | | Swedish Firms | |
|--------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------|-------------------|
| | World | | Developed Country | | World | Developed Country |
| | <u>1977</u> 1966 | <u>1982</u> 1966 | <u>1977</u> 1966 | <u>1982</u> 1966 | 1978/1965 | |
| Foods and Kindred Prod. ^c | .96 | 1.04 | 1.08 | 1.08 | 5.00 | 4.67 |
| Chemicals and Allied Prod. | 1.00 | 1.11 | 1.04 | 1.17 | 1.49 | 1.54 |
| Metals | .94 | .94 | .90 | .97 | 1.07 | 1.07 |
| Machinery | .91 | .92 | .87 | .90 | .88 | .93 |
| Nonelectrical | NA | NA | NA | NA | .89 | .91 |
| Electrical | NA | NA | NA | NA | .85 | .94 |
| Transport Equipment | .87 | .79 | .88 | .81 | 1.25 | 1.29 |
| Other Mfg. ^c | .99 | .94 | 1.06 | 1.05 | 1.17 | 1.29 |
| All Mfg. | .99 | .99 | .99 | 1.01 | 1.14 | 1.17 |

^aAll market economies

^bDeveloped market economies

^cTobacco products included with Food and Kindred Products in Swedish data and with Other Mfg. in U.S. data.

Source: Appendix Table S-16

The industry group in which U.S.-multinationals' share declined substantially relative to the world and to developed countries was transport equipment, especially in the longer span to 1982. Over that period, when the U.S. as a country lost as much as a third of its market share in a couple of industry groups and some share in all of them, U.S. multinationals increased their shares relative to developed countries in three of the groups by five percent or more, held their share within three per cent in another, and lost almost 20 per cent in only one group. Swedish multinationals gained strongly relative to the world and to other developed countries in five groups (although from extremely low initial shares of under one half of one per cent

in two of them) and lost only in the machinery industries, the groups in which their shares were initially largest.

We can compare the changes in competitiveness of each country's multinationals with those of their home countries by taking ratios of changes in multinationals' shares to the changes in shares of the countries in which they are based. In both countries, and in all the industry groups,

| | Changes in Multinationals' Shares of World Exports Relative to Changes in Home-Country Shares | | |
|-----------------------------|---|---------------------|-------------------|
| | U.S. | | Sweden |
| | <u>1977</u> 1966 | <u>1982</u> 1966 | 1978/1965 |
| Foods & Kindred Products | 1.23 ^a | 1.27 ^a | 7.04 ^b |
| Chemicals & Allied Products | 1.45 | 1.48 | 1.46 |
| Metals | 1.65 | 1.36 | 1.14 |
| Machinery | 1.20 | 1.10 | 1.09 |
| Non-electrical | NA | NA | 1.11 |
| Electrical | NA | NA | 1.00 |
| Transport Equipment | 1.19 | 1.18 | 1.74 |
| Other Mfg. | 1.25 ^b | 1.09 ^b | 1.77 ^a |
| All Mfg. | 1.30 | 1.22 | 1.46 |

^aExcludes tobacco products

^bIncludes tobacco products

Source: Two previous text tables.

with one exception, the multinational firms' export shares increased relative to those of their home countries. The margins were often wide, and were mostly larger for Swedish firms than for U.S. firms. The exceptions were chemicals, metals and machinery. In the case of metals, Swedish multinationals gained in export share while U.S. firms lost, and both countries lost

export shares, but the decline for the U.S. as a country was so much greater than that for Sweden that the margin over the home country was larger for U.S. firms. In the case of machinery, U.S. and Swedish firms lost shares by similar amounts but the U.S. as a country lost market share more severely than Sweden did.

In general, multinationals from both Sweden and the U.S. fared better than their home countries in just about every industry group. The margins tended to be largest in groups where the home countries' shares fell the most, although that was not universal. The changes in multinationals' shares tended to be smaller than those in home-country shares, perhaps because the multinationals had the flexibility to shift production from higher-cost or increasing-cost locations to cheaper ones.

The Comparative Advantage of U.S. and Swedish Multinationals

We can characterize the comparative advantages of U.S. and Swedish multinationals relative to each other and to their home countries by the distributions of their exports. We cannot compare them with multinationals based in other countries on the basis of exports because the data are not available, but we can compare them with other multinationals on the basis of their activities in Sweden and in the U.S. In this section we ask three questions. First, what comparative advantages distinguish U.S. multinationals from Swedish ones? The second question is, what are the comparative advantages of Swedish and U.S. multinationals relative to their own countries? That is, what distinguishes them from other firms of the same nationality? Finally, what comparative advantages do U.S. and Swedish multinationals have relative to multinationals from other countries?

We can compare the industry distribution of Swedish and U.S. multinationals' exports for 1977 and 1978, the closest pair of years for which both countries' data are available.

| | Industry Distribution (%) of Manufactures Exports by Multinationals Based in | |
|---------------------|---|----------------------|
| | <u>U.S. (1977)</u> | <u>Sweden (1978)</u> |
| Foods | 4.7 | .6 |
| Chemicals | 14.0 | 4.2 |
| Metals | 5.9 | 12.9 |
| Machinery | 29.4 | 30.5 |
| Non-electrical | 18.2 | 18.6 |
| Electrical | 11.1 | 11.9 |
| Transport Equipment | 30.6 | 24.2 |
| Other Manufacturing | 15.4 | 27.6 |

Source: Appendix Table S-14

U.S. multinationals appear to have had a relatively stronger position in the food, chemical, and motor vehicle industries, while Swedish multinationals were oriented more towards metals industries and other manufacturing, the latter group including the traditional Swedish wood and paper and related industries.⁴

To some extent, this comparison reflects the differing comparative advantages of the home countries for two reasons. One is that the firms do have large parts of their operations in their home countries, perhaps for political or historical reasons, and exports from home production are included here. A second is that the firm comparative advantages that are carried to foreign countries may reflect current or past home-country comparative advantages because the firms have absorbed these through learning-by-doing.

⁴In order to be placed in a specific industry, a Swedish multinational must have at least 60 per cent of its total sales in that industry. Swedish parents that do not fulfill this requirement are classified as "mixed firms" and are included in "other manufacturing." This means that we overstate the Swedish multinationals' position in other manufacturing by some 4 to 5 percent-

That the countries differ a good deal in their comparative advantages is indicated by their export patterns. In particular, the U.S., as a

| | Industry Distribution (%) of Manufactures Exports from | |
|---------------------|---|----------------------|
| | <u>U.S. (1977)</u> | <u>Sweden (1978)</u> |
| Foods | 7.6 | 1.9 |
| Chemicals | 12.0 | 5.5 |
| Metals | 7.5 | 13.2 |
| Machinery | 30.9 | 27.8 |
| Non-Electrical | 20.9 | 18.3 |
| Electrical | 9.9 | 9.5 |
| Transport Equipment | 23.7 | 19.7 |
| Other Manufacturing | 18.3 | 32.1 |

Source: Appendix Table S-6 and Lipsey and Kravis (1986).

country, relative to Sweden, seems to have comparative advantages in foods, chemicals, and transport equipment, and Sweden in metals and other manufacturing. However, the two countries' machinery industries both account for roughly 30 per cent of manufactured exports, about two thirds non-electrical machinery and one third electrical machinery. Some of the differences between the two sets of multinationals thus seem to reflect the country differences.

Another way of looking at the comparative advantages of the two countries' firms is to compare U.S. multinationals' comparative advantage relative to the U.S. as a country with Swedish firms' comparative advantage relative to Sweden. In other words, in which industries do U.S. and Swedish multinationals have comparative advantages beyond what they draw from their national origins?

tage points, according to our rough calculations.

Share of Industry in Multinational
Firm Exports Relative to Share in
Country Exports

| | <u>U.S. (1977)</u> | <u>Sweden (1978)</u> |
|---------------------|--------------------|----------------------|
| Foods | .62 | .32 |
| Chemicals | 1.17 | .76 |
| Metals | .79 | .98 |
| Machinery | .95 | 1.10 |
| Non-electrical | .87 | 1.02 |
| Electrical | 1.12 | 1.25 |
| Transport Equipment | 1.29 | 1.23 |
| Other Manufacturing | .84 | .86 |

Source: Two preceding text tables.

Both countries' multinational firms seem to possess some comparative advantage relative to their home countries in transport equipment and electrical machinery and equipment, and comparative disadvantages in foods and other manufacturing. There were some contrasts between the two countries. U.S., but not Swedish, multinationals appeared to have some comparative advantage over their home countries in chemicals and some comparative disadvantage in metals and non-electrical machinery.

We have two sets of observations on the comparative advantage of U.S. and Swedish multinationals relative to those of other countries. One is a comparison between the operations in the U.S. of Swedish multinationals and those from other countries. The second is a comparison between the operations of U.S. and non-U.S. multinationals in Sweden.

The most distinctive characteristic of Swedish-owned manufacturing enterprises in the U.S. was their extreme concentration in the machinery industry. Almost three quarters of the sales of Swedish-owned manufacturing enterprises in the U.S. were in that group in 1980, as compared with about a

fifth for all foreign affiliates and all affiliates from developed countries (Appendix Table S-10). Most of the other Swedish affiliate sales were in metals, a little below the average share, and in other manufacturing, far below the average. Concentration on machinery was a little lower measured by employment and considerably lower, but still high, measured by assets (Appendix Tables S-8 and S-9). The degree of concentration was not only high for the machinery industry; it was high for any industry. The highest degree of concentration in an industry other than machinery was Germany's in chemicals, at about 60 per cent. Most of the industry concentrations were a third or less of any country's total direct investment assets.

Another way of describing the strength of Swedish firms' concentration on machinery among their direct investments in the U.S. is that it was 3 1/2 times that of all countries' firms combined. That was a much larger deviation from the world pattern than that of Germany in chemicals, which was a little more than twice the world average. The other side of this concentration was that the shares of Swedish-owned affiliate sales in industry groups other than machinery were far below the world averages. The share of Swedish affiliate sales that were in the food products and chemicals industries in particular was extremely low, under 5 per cent as compared with over 40 per cent for all countries combined.

U.S. multinationals in Sweden were also heavily concentrated in the machinery industry, particularly non-electrical machinery. Almost 40 per cent of their sales were in that group in 1970, as compared with only 5 per cent for foreign affiliates based in other countries (Appendix Table S-17). Compared to the other foreign-owned manufacturing affiliates in Sweden, U.S. firms were also

stronger in chemicals but weaker in foods, electrical machinery, and other manufacturing. In transport equipment, there is no foreign participation at all in the Swedish market. Foreign firms in this industry do not seem to possess enough competitive strength to compete with Swedish firms on the latter's home market.

Since Samuelsson (1977) provides data on shares in Swedish output for 126 5-digit SNI industries in 1970, we can attempt to distinguish between the industry characteristics associated with high U.S. shares and those associated with high shares of non-U.S. multinationals to discover what factors underlie U.S. multinationals' comparative advantages relative to multinationals from other countries aside from Sweden. We relate U.S. and other multinationals' shares to three industry characteristics: ratios of technical and sales employment to total employment as measures of the skill or technical intensity, and the marketing intensity of the industry and the average value added per establishment, as an indicator of scale economies.

The equations^a are:

| Country of Ownership | Technical Employees as % of Total Employees | Sales Employees as % of Total Employees | Value Added per Establishment | \bar{R}^2 | F |
|----------------------|---|---|-------------------------------------|-------------|-------|
| (1) U.S. | 1.41 (2.38) ^b | -.95 (.78) | .01 (3.39) | .48 | 11.20 |
| (2) Other | .75 (2.07) | 3.21 (6.04) | .00 (.33) | .48 | 14.36 |

^aArithmetic equations. The fit of long equations was relatively poor.

^bt-statistics in parentheses.

The equations suggest that skill intensity or technical complexity was more important for U.S. multinationals than for those from other countries. Sales effort or marketing intensity, on the other hand, was important for non-U.S. multinationals but not at all for those from the U.S. Our indicator of the existence of economies of scale in an industry was significant only for U.S. firms.

These results suggest that the comparative advantage of U.S. firms, as compared to those of other countries, is based on high skill intensity or technical complexity and on economies of scale. The comparative advantage of non-U.S. multinationals is based partly on the same technical characteristics but more strongly on sales effort or marketing intensity.

Comparative Advantage, Growth in Demand, and Overall Competitiveness

Changes in the overall competitiveness of countries and their multinationals can be thought of as consisting of several elements. One is changes in their competitiveness within industries. A second is their comparative advantage, which determines the extent to which they produce and export in each industry. The third is the rate at which world trade grows in each industry. We have examined the first two factors in the preceding sections. Here we take up the last link in the chain.

Growth in Aggregate Market Economy Exports

| | <u>1977</u> 1966 | <u>1978</u> 1965 | <u>1982</u> 1966 |
|-------------------------------|---------------------|---------------------|---------------------|
| Foods and Kindred Products | 4.67 ^a | 5.74 ^b | 6.54 ^a |
| Chemicals and Allied Products | 5.72 | 7.85 | 9.86 |
| Metals | 4.62 | 6.18 | 6.87 |
| Machinery | 6.00 | 8.26 | 9.87 |
| Non-Electrical | 5.43 | 7.51 | 8.72 |
| Electrical | 7.16 | 9.78 | 12.21 |
| Transport Equipment | 6.82 | 9.15 | 10.56 |
| Other Mfg. | 5.21 ^b | 7.05 ^a | 8.10 ^b |
| Total Mfg. | 5.49 | 7.34 | 8.59 |

^aExcluding tobacco products

^bIncluding tobacco products

Source: Appendix Table S-13

Whatever the period chosen for measuring growth rates, the two industry groups with the fastest rates of export growth are electrical machinery and transport equipment, followed by chemicals. Non-electrical machinery exports grew at close to the average rate, and the whole machinery group at somewhat above the average. Other manufacturing grew at a below average rate, and foods and metals at the lowest rates, far below the average.

For both Sweden and the U.S., the distribution of exports in 1965 was oriented towards industries that enjoyed above-average export growth in the next 13 years. If their exports in each industry had grown in the next 13 years at the world average rate, Swedish exports in 1978 would have been 7.5 times their 1965 value and U.S. exports 7.6 times the initial value, as compared with a world multiple of 7.3.⁵ In fact, Swedish exports in 1978 were only 5.7 times the 1965 level, and the growth in U.S. exports was even slower. Thus, the initial comparative advantages of the two countries do not explain their relatively slow export growth.

⁵The use of broad industry groups for the calculation of constant-share growth probably overstates the expected growth for Sweden because within the

Growth of Manufactured Exports of All
Market Economies, the U.S., Sweden,
and U.S. and Swedish Multinationals
Actual and Constant Share

| | <u>1978/1965</u> | |
|------------------------|------------------|-----------------------|
| | <u>Actual</u> | <u>Constant Share</u> |
| All Market Economies | 7.34 | |
| Sweden | 5.73 | 7.52 |
| U.S. | 5.40 | 7.62 |
| Swedish multinationals | 8.42 | 7.73 |

| | <u>1977/1966</u> | |
|----------------------|------------------|-----------------------|
| | <u>Actual</u> | <u>Constant Share</u> |
| All Market Economies | 5.49 | |
| U.S. | 4.16 | 5.65 |
| U.S. multinationals | 5.43 | 5.87 |

| | <u>1982/1966</u> | |
|----------------------|------------------|-----------------------|
| | <u>Actual</u> | <u>Constant Share</u> |
| All Market Economies | 8.59 | |
| U.S. | 7.02 | 8.99 |
| U.S. multinationals | 8.59 | 9.37 |

Source: Appendix Tables S-12, S-13, and S-14

The comparative advantage of Swedish multinational firms, in their world-wide activities, was tilted a little more toward rapidly growing export industries than that of Sweden. If the multinationals' exports had grown at the average rate for their industries, their exports would have reached 7.7 times the 1965 level. The bias towards high export growth was strongest for the U.S. multinationals. If they had held their 1966 shares within industries, they would have reached almost 6 times their 1966 level by 1977, as compared with the world average of 5.5. By 1982, the 1966 shares would have implied exports 9.4 times the 1966 level, as compared to the actual world

highest-growth industry groups, electrical machinery and transport equipment, Sweden had low shares of the fastest-growing subgroups, electronic equipment, and motor vehicles, in 1965.

ratio of 8.6.

It is clear, then, that the stability in the U.S. firms' share of world manufactured exports was a combination of two elements: a concentration of activity in relatively fast-growth industry groups, combined with some loss of ground within the groups. We can see that from the fact that the actual ratio for U.S. multinationals, 1977/1966, was 5.4 as compared with 5.9 they would have had with constant shares in each industry, and the actual ratio in 1982/1966 was 8.6 as compared with the hypothetical ratio of over 9.4.

The story is different for Swedish multinationals. Their share of world exports grew faster than it would have if they had retained their 1965 shares in each industry. The multiple for their exports was 8.4 compared with the 7.7 they would have had with constant industry shares.

As in the earlier discussion, the problem in interpreting the Swedish results is that we do not know what part of the high actual growth in multinationals' exports came from the shift of individual firms into multinational status, a factor we believe was not important in this period for the U.S. multinationals' share. We will not be able to make the distinction between the results of a shift of firms to multinationality and rising competitiveness with confidence until we can examine the trends for a fixed panel of firms.

Changes in the Comparative Advantages of the U.S. and Sweden and their Firms

The direction of changes in country comparative advantage can be summarized by the shifts in the proportions of exports coming from each industry sector. Both Sweden and the U.S. were shifting the composition of

Changes in Industry Shares in Exports: 1982/1965

| | <u>Developed Market Economies</u> | <u>All Market Economies</u> | <u>U.S.</u> | <u>Sweden</u> |
|---------------------|---|---------------------------------|-------------|---------------|
| Foods | .81 | .73 | .67 | .91 |
| Chemicals | 1.14 | 1.15 | 1.06 | 1.60 |
| Metals | .81 | .80 | .63 | 1.99 |
| Machinery | | | | |
| Non-electrical | 1.05 | 1.04 | 1.10 | 1.04 |
| Electrical | 1.32 | 1.43 | 1.40 | 1.51 |
| Transport Equipment | 1.26 | 1.26 | 1.03 | 1.14 |
| Other Manufacturing | .87 | .94 | 1.03 | .78 |

Source: Appendix Table S-11

their exports towards electrical machinery, transport equipment, and chemicals which were, as mentioned earlier, the fastest-growing sectors. In each case, the shift was more extensive in Sweden than in the U.S. and more rapid than the world and developed-country shift in chemicals (from a very low initial share) and in electrical machinery. The rest of the world was shifting more rapidly toward transport equipment than either of the two countries, but within that group, Sweden was moving rapidly into the fast-growing motor vehicles subgroup.

Swedish and U.S. multinational firms were both shifting towards chemicals and transport equipment between the mid-1960's and the late 1970's, and both were shifting out of metals, but while Swedish firms were shifting more rapidly than the world or developed countries as a group, U.S. firms were moving less quickly in this direction. Multinationals from both countries, but especially from Sweden, were reducing their concentration in the machinery industries.

Changes in Industry Shares in Worldwide Exports,
U.S., Sweden, and their Multinational Firms

| | 1977/1966 | | 1978/1965 | |
|---------------------|-----------|------------|-----------|---------------|
| | U.S. | U.S. Firms | Sweden | Swedish Firms |
| Foods | .87 | .82 | .68 | 3.00 |
| Chemical | .99 | 1.06 | 1.39 | 1.37 |
| Metals | .63 | .81 | 1.24 | .80 |
| Machinery | 1.07 | .99 | 1.16 | .86 |
| Non-electrical | 1.00 | NA | 1.05 | .80 |
| Electrical | 1.26 | NA | 1.45 | .99 |
| Transport Equipment | 1.21 | 1.10 | 1.14 | 1.36 |
| Other Mfg. | 1.00 | .94 | .82 | 1.00 |

Source: Appendix Tables S-11 and S-14

Finally, we may ask whether, given these changes in the industry distribution of exports, the U.S., Sweden and their firms were still, in 1977-78, more oriented than the world towards the fast-growth industries of the previous decade. If the composition of exports in 1965/66 had been that of 1977/78 for the U.S., Sweden, their firms, and the world, and if the industry export growth rates of the 1965/66 - 1977/78 period had been as they were, the constant-share growth rates would have been as follows:

Constant Share Export Growth, 1965-1978 and 1966-77,
Assuming 1965, 1966, 1977, and 1978 Industry
Distribution of Exports

| | Export Distribution | | | |
|------------------------|---------------------|------|------|------|
| | 1965 | 1966 | 1977 | 1978 |
| U.S. | | 5.65 | 5.81 | |
| U.S. multinationals | | 5.87 | 5.97 | |
| Sweden | 7.52 | | | 7.67 |
| Swedish multinationals | 7.73 | | | 7.88 |
| All market economies | 7.34 | 5.49 | 5.61 | 7.54 |

Source: Appendix Tables S-11, S-12, and S-13.

At the end of the period, Sweden, the U.S., and their multinationals all still had industry compositions of exports biased toward relatively fast

growth. Both countries' multinationals remained more biased toward export growth than their countries, and the U.S. and its multinationals more biased than Sweden and its multinationals. The margin over the world constant-share growth rate decreased for U.S. and Swedish multinationals and for Sweden as a country, but increased for the U.S. Thus, taking account of all movements into and out of the various industry groups, we find that the world as a whole was restructuring faster than Swedish and U.S. multinationals and Sweden as a whole, but that the U.S. kept up with, or even a little ahead of, the rest of the world.

Concluding Remarks

The evidence from this study shows the importance in analyses of competitiveness and comparative advantages, of taking into account the implications of the mobility of capital, technology and other factors of production within multinationals. While the U.S. and Sweden both lost more than 20 per cent of their shares of world and developed countries' exports of manufactures over the 15 years or so after the mid-1960's, the export shares of their multinational firms stayed fairly stable or even increased. The multinationals, while increasing their shares of home-country exports, shifted their production for export in percentage terms from their home countries to the host countries in which their affiliates were located. These developments suggest that the declining competitiveness of the U.S. and Sweden was not due mainly to deterioration in the innovativeness or inventiveness of American and Swedish firms or declines in their management ability or in their technological capabilities. Rather, one should probably look for explanations of declining country competitiveness in events specific to the countries, such as

their macro-economic policies.

The finding that firms have done better than their home countries is strengthened when we look at different industry groups. In both the U.S. and Sweden, and in all industry groups, with one exception, the multinationals' export shares increased relative to those of their home countries. The margins were often wide, and were mostly larger for Swedish firms than for U.S. firms. The margins in favor of the multinational firms tended to be largest in groups where the home countries' shares fell the most, although that was not universal. The changes in multinationals' shares of world exports tended to be smaller than those in home country shares, perhaps because the multinationals had the flexibility to shift production from higher-cost or increasing-cost locations to cheaper ones.

Part of the explanation for the growth of each country's exports and those of its multinationals is the initial composition of exports, or the comparative advantages of the countries and their companies. The comparative advantages of Sweden and the U.S. and their multinationals were skewed, in the mid-1960's, to industries that were to enjoy rapid worldwide export growth in the next decade or so. Despite these comparative advantages, the exports of both countries fell far behind world export growth. The declines may be related, to some extent, to the distribution of each country's exports within these broad industry groups, a subject for future investigation.

The comparative advantages of multinational firms in both countries were biased toward fast-growth industries even more than those of the countries themselves, and that fact partly accounted for the better export performance of the multinationals relative to their home countries. However, the restruc-

turing of the two countries' economies toward faster-growing industries moved more rapidly in the decade after the mid-1960's than that of the multinationals.

In general, despite differences between the U.S. and Sweden, the basic story we find is quite similar. An implication for government policy, confirmed here for both Sweden and the U.S., is that a country's competitiveness can behave very differently from that of firms that are based in the country but produce abroad as well. National policies aimed at improving the competitiveness of a country may fail if they involve creating, or reducing the cost of, assets that improve the competitiveness of the country's firms but can be exploited as well by producing abroad as by producing at home. Thus, subsidies to R & D, to innovation, or to management or technical training might give little encouragement to production at home if the assets created move easily across national borders within firms.

Aside from these similarities between the U.S. and Swedish experience, there were also some notable differences. One was that the share of exports originating in affiliates was lower for Sweden than for the U.S. To a large extent, this difference in the siting of export production reflected the much greater export orientation of Swedish parents relative to U.S. parents, presumably a consequence of the relatively small size of the Swedish domestic market.

Another difference in performance between U.S. and Swedish multinationals was that while the U.S. firms' share in world manufacturing exports remained stable over the studied period, the Swedish firms' share rose by 14 per cent. We are so far not in a position to say whether this was because Swedish firms

increased their competitiveness more than U.S. firms or because there was a higher conversion of Swedish firms into multinational status.

It is often suggested that multinational firms are relatively immune to controls by their home governments because they are free to move their production from one jurisdiction to another. At least as far as export production is concerned, this may be less true for Swedish multinationals than for U.S. multinationals. The reason is that while almost half of the exports by U.S. firms originate in their overseas affiliates, 80 per cent of Swedish multinationals' exports originate in Sweden. The Swedish firms may therefore be more vulnerable not only to home-country controls but also to changes in home-country macroeconomic policy.

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Appendix Table S-1

Estimates of World (Market Economy)
Exports of Manufactures, 1965, 1970, 1974, and 1978
(Unit: \$ million)^a

| | 1965 | 1970 | 1974 | 1978 |
|--|---------|---------|---------|---------|
| Exports, by Geographical Area^b | | | | |
| 1. World (Market Economies) | 116,796 | 214,800 | 515,081 | 857,748 |
| 2. Developed Countries | 106,111 | 193,250 | 461,374 | 759,161 |
| 3. Sweden | 3,603 | 6,354 | 14,864 | 20,651 |
| 4. Less Developed Countries | 10,685 | 21,550 | 53,707 | 98,587 |
| Exports by Ownership | | | | |
| 5. Foreign-owned companies in Sweden ^c | 138 | 392 | 874 | 1,216 |
| 6. All Swedish-owned companies in Sweden | 3,465 | 5,963 | 13,990 | 19,435 |
| Swedish Multinational Enterprises^d | | | | |
| 7. Parents from Sweden | 1,695 | 3,770 | 8,703 | 12,771 |
| 8. Majority-owned affil., from host countries | 196 | 538 | 1,646 | 3,045 |
| 9. " " , of which DCs | 188 | 520 | 1,593 | 2,950 |
| 10. " " , of which LDCs | 8 | 18 | 53 | 95 |
| 11. Minority-owned affil. from host countries ^e | 40 | 100 | 300 | 500 |
| 12. Parents and majority-owned affil., total | 1,891 | 4,308 | 10,349 | 15,816 |
| 13. Parents and majority-owned affil., in DCs | 1,883 | 4,290 | 10,296 | 15,721 |
| 14. Parents and all affil., total | 1,931 | 4,408 | 10,649 | 16,316 |
| Swedish owned firms | | | | |
| 15. All Swedish-owned firms + majority-owned affil., total | 3,661 | 6,501 | 15,636 | 22,480 |
| 16. " " , DCs | 3,653 | 6,483 | 15,583 | 22,385 |
| 17. All Swedish-owned firms, total | 3,701 | 6,601 | 15,936 | 22,980 |

^aIn this and the following tables, Swedish Kroner have been converted into U.S. dollars by the exchange rate used in the UN Yearbook of International Trade Statistics

^bUN Trade Tapes

^cSamuelsson (1977) and Statistiska Meddelanden, F 1977:7 and F 1981:7

^dThe IUI Survey Data on Swedish Manufacturing Investment Abroad

^eEstimated from employment of minority-owned affiliates by assuming that the ratio of exports to employment was the same in minority-owned affiliates as in majority-owned affiliates in the same industry.

Appendix Table S-2

Indicators of the Share of Sweden, Swedish Firms and Swedish Multinational Enterprises in World Exports of Manufactured Goods, 1965, 1970, 1974, and 1978

| | 1965 | 1970 | 1974 | 1978 |
|---|-------|-------|-------|-------|
| <u>Exports from Sweden</u> | | | | |
| 1. % of World Exports | 3.08 | 2.96 | 2.89 | 2.41 |
| 2. % of DC Exports | 3.40 | 3.29 | 3.22 | 2.72 |
| <u>Exports by Swedish Firms incl. Majority-Owned Aff.</u> | | | | |
| 3. % of World Exports | 3.13 | 3.03 | 3.04 | 2.62 |
| 4. % of DC Exports | 3.44 | 3.35 | 3.38 | 2.95 |
| <u>Exports by Swedish Firms incl. All Affiliates</u> | | | | |
| 5. % of World Exports | 3.17 | 3.07 | 3.09 | 2.68 |
| 6. % of DC Exports | 3.48 | 3.41 | 3.44 | 3.01 |
| <u>Exports by Swedish MNCs incl. Majority-Owned Aff.</u> | | | | |
| 7. % of World Exports | 1.62 | 2.01 | 2.01 | 1.84 |
| 8. % of DC Exports | 1.77 | 2.22 | 2.23 | 2.07 |
| 9. % of LDC Exports | 0.07 | 0.08 | 0.10 | 0.10 |
| <u>Exports by Swedish MNCs incl. All Affiliates</u> | | | | |
| 10. % of World Exports | 1.65 | 2.05 | 2.07 | 1.90 |
| <u>Exports by Swedish MNCs (Parents) from Sweden</u> | | | | |
| 11. % of World Exports | 1.45 | 1.76 | 1.69 | 1.49 |
| 12. % of DC Exports | 1.60 | 1.95 | 1.89 | 1.68 |
| 13. % of Swedish Exports | 47.04 | 59.32 | 58.55 | 61.84 |
| <u>Exports by Swedish Majority-Owned Affiliates</u> | | | | |
| 14. % of World Exports other than Swedish | 0.17 | 0.26 | 0.33 | 0.36 |
| 15. % of DC Exports other than Swedish | 0.18 | 0.28 | 0.36 | 0.40 |
| 16. % of Swedish Parent and Majority Exports | 10.36 | 12.49 | 15.90 | 19.25 |
| 17. % of Swedish Firms Exports | 5.30 | 8.15 | 10.33 | 13.25 |
| <u>Exports by All Swedish Affiliates</u> | | | | |
| 18. % of World Exports other than Swed. | 0.21 | 0.31 | 0.39 | 0.42 |
| 19. % of Swedish MNCs Exports | 12.22 | 14.47 | 18.27 | 21.73 |
| 20. % of Swedish Firms Exports | 6.38 | 9.67 | 12.21 | 15.43 |

All Data are from Appendix Table S-1.

Appendix Table S-3

Indicators of the Share of 28 Swedish Multinational Enterprises^a
in World Exports of Manufactured Goods, 1965, 1978, and 1983

| | 1965 | 1978 | 1983 |
|--|------|-------|------|
| <u>Exports by Parents from Sweden</u> | | | |
| 1. % of World Exports | 1.09 | 1.07 | 1.07 |
| 2. % of DC Exports | 1.20 | 1.20 | 1.26 |
| 3. % of Swedish Exports | 35.3 | 44.6 | 54.0 |
| 4. % of Total Sw. MNC (parent) Exports from Sweden | 74.5 | 70.6 | N.A. |
| <u>Exports by Swedish MNCs Incl. Majority-Owned Aff.</u> | | | |
| 5. % of World Exports | 1.21 | 1.32 | N.A. |
| 6. % of DC Exports | 1.33 | 1.49 | N.A. |
| <u>Exports by Majority-Owned Aff.</u> | | | |
| 7. % of World Exports | 0.12 | 0.25 | N.A. |
| 8. % of DC Exports | 0.13 | 0.28 | N.A. |
| 9. % of Swedish Parent and Majority Exports | 9.66 | 18.89 | N.A. |

^aThis sample covers 28 Swedish multinationals which were multinationals throughout the period.

Sources: UN trade tapes, the IUI Survey Data on Swedish Manufacturing Investment Abroad and Sveriges Största Företag (1983).

Appendix Table S-4

Shares of The U.S. and Sweden in World Output

| | 1960 | 1965 | 1970 | 1975 | 1980 |
|--|---------|---------|---------|---------|---------|
| Real GDP in Billions of International Dollars^a | | | | | |
| World | 3,988 | 5,095 | 6,581 | 8,065 | 9,822 |
| Centrally-planned economies | 1,002 | 1,254 | 1,670 | 2,152 | 2,628 |
| Market economies | 2,986 | 3,841 | 4,911 | 5,913 | 7,194 |
| Industrial countries | 2,142 | 2,761 | 3,474 | 4,040 | 4,795 |
| U.S. | | | | | |
| Real GDP per capita ^b (\$) | 5,195 | 6,100 | 6,629 | 7,132 | 8,089 |
| Real GDP per capita adj. for T/T ^c changes ^b | 5,248 | 6,178 | 6,747 | 7,132 | 7,986 |
| Population (thousands) ^b | 180,670 | 194,300 | 204,880 | 213,540 | 222,160 |
| Real GDP (\$ billion) | 939 | 1,185 | 1,358 | 1,523 | 1,797 |
| Real GDP adj. for T/T ^c | 949 | 1,200 | 1,382 | 1,523 | 1,770 |
| As % of market economies | | | | | |
| Real GDP | 31.4 | 30.9 | 27.7 | 25.8 | 25.0 |
| Real GDP adj. for T/T ^c changes | 31.8 | 31.2 | 28.1 | 25.8 | 24.6 |
| As % of industrial countries | | | | | |
| Real GDP | 43.8 | 42.9 | 39.1 | 37.7 | 37.5 |
| Real GDP adj. for T/T ^c changes | 44.3 | 43.5 | 39.8 | 37.7 | 36.9 |
| Sweden | | | | | |
| Real GDP per capita ^b | 4,160 | 5,210 | 6,025 | 6,749 | 7,142 |
| Real GDP per capita adj. for T/T ^c changes ^b | 4,207 | 5,190 | 6,032 | 6,749 | 6,779 |
| Population ^b | 7,480 | 7,730 | 8,040 | 8,190 | 8,260 |
| Real GDP | 31.1 | 40.3 | 48.4 | 55.3 | 59.0 |
| Real GDP adj. for T/T ^c changes | 31.5 | 40.1 | 48.5 | 55.3 | 56.0 |
| As % of market economies | | | | | |
| Real GDP | 1.04 | 1.05 | .99 | .94 | .82 |
| Real GDP adj. for T/T ^c changes | 1.05 | 1.04 | .99 | .94 | .78 |
| As % of industrial countries | | | | | |
| Real GDP | 1.45 | 1.46 | 1.39 | 1.37 | 1.23 |
| Real GDP adj. for T/T ^c changes | 1.47 | 1.45 | 1.40 | 1.37 | 1.17 |

^aKravis and Lipsey (1984), pp. 140-141

^bSummers and Heston (1984)

^cTerms of trade

Exports of Manufactures from Sweden, Total and
by Swedish Multinationals (Parent Firms) 1965, 1970, 1974 and 1978
By Major Industry Group
(Unit: \$ Million)

| Exports By | Manufac- turing | Foods ^a | Chemicals | Metals | 1965 | | Transport Equipment | Others |
|--------------------------|--------------------|--------------------|-----------|--------|---------------------------|---------------------|------------------------|--------|
| | | | | | Machinery (Non-elect.) | Elect. Machinery | | |
| Sweden | 3,603 | 96 | 151 | 514 | 631 | 232 | 576 | 1,404 |
| Parent firms by industry | 1,695 | 1 | 44 | 293 | 329 | 215 | 322 | 491 |
| Other firms | 1,908 | 95 | 107 | 221 | 302 | 17 | 254 | 913 |
| Sweden | 6,354 | 123 | 294 | 974 | 1,201 | 496 | 1,077 | 2,190 |
| Parent firms by industry | 3,770 | 21 | 97 | 514 | 570 | 435 | 859 | 1,274 |
| Other firms | 2,584 | 102 | 197 | 460 | 631 | 61 | 218 | 916 |
| Sweden | 14,864 | 270 | 814 | 2,166 | 2,515 | 1,199 | 2,505 | 5,396 |
| Parent firms by industry | 8,703 | 35 | 257 | 1,048 | 1,168 | 1,088 | 1,939 | 3,168 |
| Other firms | 6,161 | 235 | 557 | 1,118 | 1,347 | 111 | 566 | 2,228 |
| Sweden | 20,651 | 374 | 1,202 | 2,976 | 3,799 | 1,937 | 3,777 | 6,586 |
| Parent firms by industry | 12,771 | 43 | 564 | 1,854 | 1,737 | 1,752 | 2,906 | 3,915 |
| Other firms | 7,880 | 331 | 638 | 1,122 | 2,062 | 185 | 871 | 2,671 |

^aIncluding tobacco products

Sources: UN Trade Tapes and the IUI Survey Data on Swedish Manufacturing Investment Abroad

Appendix Table S-6

Industry Distribution of Exports of Manufactures From Sweden by
Swedish Multinationals and by Other Firms
1965, 1970, 1974, and 1978

| | Total Mfg. | Foods | Chemicals | Metals | Machinery | | Transport Equipment | Other Mfg. |
|-----------------------------------|---------------|-------|-----------|--------|-------------------------|-----------------|------------------------|---------------|
| | | | | | Non- Elec- trical | Elec- trical | | |
| <u>1965</u> | | | | | | | | |
| Sweden | 100.0 | 2.7 | 4.2 | 14.3 | 17.5 | 6.4 | 16.0 | 39.0 |
| Swedish Parents | 100.0 | .06 | 2.6 | 17.3 | 19.4 | 12.7 | 19.0 | 29.2 |
| Other Firms | 100.0 | 5.0 | 5.6 | 11.6 | 15.8 | .9 | 13.3 | 47.9 |
| Swedish Parents as % of Sweden | 47.0 | 1.0 | 29.1 | 57.0 | 52.1 | 92.7 | 55.9 | 35.0 |
| <u>1970</u> | | | | | | | | |
| Sweden | 100.0 | 1.9 | 4.6 | 15.3 | 18.9 | 7.8 | 17.0 | 34.6 |
| Swedish Parents | 100.0 | .6 | 2.6 | 13.6 | 15.1 | 11.5 | 22.8 | 33.8 |
| Other Firms | 100.0 | 3.9 | 7.6 | 17.8 | 24.4 | 2.4 | 8.4 | 35.4 |
| Swedish Parents as % of Sweden | 59.3 | 17.1 | 33.0 | 52.8 | 47.5 | 87.7 | 79.8 | 58.2 |
| <u>1974</u> | | | | | | | | |
| Sweden | 100.0 | 1.9 | 5.5 | 14.6 | 16.9 | 8.1 | 16.8 | 36.4 |
| Swedish Parents | 100.0 | .4 | 3.0 | 12.0 | 13.4 | 12.5 | 22.3 | 36.4 |
| Other Firms | 100.0 | 3.8 | 9.0 | 18.1 | 21.9 | 1.8 | 9.2 | 36.2 |
| Swedish Parents as % of Sweden | 58.6 | 12.8 | 31.6 | 48.4 | 46.4 | 90.7 | 77.4 | 58.7 |
| <u>1978</u> | | | | | | | | |
| Sweden | 100.0 | 1.9 | 5.5 | 13.2 | 18.3 | 9.5 | 19.7 | 32.1 |
| Swedish Parents | 100.0 | .3 | 4.4 | 14.5 | 13.6 | 13.7 | 22.8 | 30.7 |
| Other Firms | 100.0 | 4.2 | 8.1 | 14.2 | 26.2 | 2.3 | 11.1 | 33.9 |
| Swedish Parents as % of Sweden | 61.8 | 11.5 | 46.9 | 62.3 | 45.7 | 90.4 | 76.9 | 59.4 |

All data are from Appendix Table S-5

Appendix Table S-7

Foreign-Owned Manufacturing Affiliates in the U.S., 1974
Distribution of Assets by Industry For Selected Countries and Country Groups

| | Total Mfg. | Foods | Chemicals | Metals | Machinery | Other Mfg. |
|----------------------|---------------|-------|-----------|--------|-----------|---------------|
| All Countries | 100.0 | 14.7 | 30.1 | 17.3 | 13.4 | 24.4 |
| Developed Countries | 100.0 | 15.9 | 27.7 | (D) | (D) | 25.4 |
| Canada & Europe | 100.0 | 16.3 | 29.1 | 15.6 | 13.8 | 25.2 |
| Canada | 100.0 | 32.4 | 3.32 | 19.2 | 19.4 | 25.7 |
| Europe | 100.0 | 11.8 | 36.4 | 14.6 | 12.3 | 25.0 |
| EEC | 100.0 | 8.12 | 37.8 | 17.1 | 10.0 | 27.0 |
| UK | 100.0 | 9.21 | 31.2 | 19.7 | 6.72 | 33.2 |
| France | 100.0 | (D) | 27.8 | (D) | 7.28 | 16.9 |
| Germany | 100.0 | 0.21 | 64.0 | 5.54 | 8.52 | 21.7 |
| Netherlands | 100.0 | 10.3 | 39.0 | 12.5 | 15.8 | 22.5 |
| Other Europe | 100.0 | 25.8 | 31.0 | 4.81 | 20.9 | 17.5 |
| Sweden | 100.0 | .39 | 5.25 | 9.53 | 77.0 | 7.78 |
| Switzerland | 100.0 | 31.3 | 37.3 | 3.89 | 11.5 | 16.1 |
| Developing Countries | 100.0 | 2.70 | 54.5 | (D) | (D) | 14.9 |

(D) = Suppressed by source to avoid disclosure.

Source: U.S. Department of Commerce (1976).

Appendix Table S-8

Foreign-Owned Manufacturing Affiliates in the U.S., 1980,
Distribution of Assets by Industry, for Selected Countries and Country Groups

| | Total | Food & Kindred Products | Chemicals and Allied Products | Primary and Fabricated Metals | Machinery | Other Mfg. |
|-----------------------------------|-------|-------------------------------|--|--|-----------|-------------------|
| All Countries | 100.0 | 10.0 | 31.9 | 12.6 | 21.3 | 24.1 |
| Canada, Europe, & Japan | 100.0 | 10.1 | 33.2 | 12.6 | 19.8 | 24.3 |
| Canada | 100.0 | 20.1 | 4.2 | 14.2 | 30.2 | 31.3 |
| Europe | 100.0 | 8.0 | 41.1 | 11.1 | 17.3 | 22.5 |
| EEC(9) | 100.0 | a | 42.4 | 10.0 | 16.5 | 31.1 ^b |
| Belgium | 100.0 | 0 | n.a. | 36.8 | n.a. | n.a. |
| France | 100.0 | 2.5 | 19.4 | 18.4 | 3.4 | 56.3 |
| Germany | 100.0 | 0.5 | 58.2 | 7.2 | 13.9 | 20.3 |
| Italy | 100.0 | 4.7 | 0 | 0.1 | 64.7 | 30.5 |
| Netherlands | 100.0 | 2.6 | 49.3 | a | 37.1 | 11.0 ^c |
| U.K. | 100.0 | 18.5 | 37.6 | 7.8 | 18.5 | 17.6 |
| Other Europe | 100.0 | a | 53.8 | 16.3 | 21.5 | 8.4 ^b |
| Finland | 100.0 | 0 | 0 | | 11.2 | 89.8 |
| Norway | 100.0 | d | 5.4 | 28.4 ^b | 60.8 | 5.4 |
| Sweden | 100.0 | <.05 | 6.2 | a | 56.9 | 36.9 ^c |
| Switzerland | 100.0 | d | 44.0 | 35.5 ^b | 11.5 | 9.0 |
| Japan | 100.0 | 9.1 | 8.0 | 30.7 | 23.1 | 29.0 |
| Aust., N.Z., S. Africa | 100.0 | n.a. | n.a. | 21.4 | n.a. | 52.2 |
| Developing Countries ^e | 100.0 | 8.8 | 9.2 | 13.0 | 52.5 | 16.6 |

^aIncluded in Other Mfg.

^bIncludes Food and Kindred Products.

^cIncludes Primary and Fabricated Metals

^dIncluded in Primary and Fabricated Metals

^eIncluding Australia, New Zealand, and South Africa

Source: U.S. Dept. of Commerce (1983), Table B-8.

Appendix Table S-9

Foreign-Owned Manufacturing Affiliates in the U.S., 1980
Distribution of Employment by Industry for Selected Countries
and Groups of Countries

| | Total | Food & Kindred Products | Chemicals and Allied Products | Primary and Fabricated Metals | Machinery | Other Mfg. |
|-----------------------------------|-------|-------------------------------|--|--|-----------|-------------------|
| All Countries | 100.0 | 10.9 | 25.7 | 10.2 | 26.2 | 27.0 |
| Canada, Europe, Japan | 100.0 | 11.2 | 26.7 | 9.7 | 24.7 | 26.1 |
| Canada | 100.0 | 13.0 | 2.9 | 13.4 | 33.8 | 37.0 |
| Europe | 100.0 | 10.8 | 31.8 | 9.4 | 22.7 | 25.3 |
| EEC(9) | 100.0 | a | 32.7 | 8.1 | 21.9 | 37.3 ^b |
| Belgium | 100.0 | 0 | 40.9 ^c | 32.3 | d | 26.8 |
| France | 100.0 | 1.3 | 12.9 | 17.2 | 4.7 | 63.9 |
| Germany | 100.0 | 0.4 | 56.2 | 5.9 | 13.9 | 23.5 |
| Italy | 100.0 | a | 0 | a | 70.1 | 29.9 ^e |
| Netherlands | 100.0 | 3.0 | | 35.5 | 57.3 | 4.2 |
| U.K. | 100.0 | 26.2 | 21.2 | 7.4 | 22.3 | 23.0 ^b |
| Other Europe | 100.0 | a | 26.8 | 16.2 | 27.0 | 30.0 |
| Finland | 100.0 | 0 | 0 | | 23.1 | 76.9 |
| Norway | 100.0 | n.a. | n.a. | n.a. | 42.0 | n.a. |
| Sweden | 100.0 | a | a | 14.8 | 71.0 | 14.2 ^f |
| Switzerland | 100.0 | g | 35.3 | 42.0 ^h | 12.5 | 10.2 |
| Japan | 100.0 | 13.6 | 6.2 | a | 33.6 | 46.6 ^e |
| Aust., N.Z., S. Africa | 100.0 | n.a. | n.a. | 19.6 | n.a. | 53.3 |
| Developing Countries ^e | 100.0 | 6.6 | 10.9 | 20.0 | 50.3 | 41.6 |

^aIncluded in Other Mfg.

^bIncludes Food and Kindred Products.

^cIncludes Machinery

^dIncluded in Chemicals

^eIncludes Metals

^fIncludes Foods and Chemicals

^gIncluded in Metals

^hIncludes Foods

Source: U.S. Dept. of Commerce (1983), Table F-5.

Appendix Table S-10

Foreign-Owned Manufacturing Affiliates in the U.S., 1980
Distribution of Sales by Industry for Selected Countries and County Groups

| | Total | Food & Kindred Products | Chemicals and Allied Products | Primary and Fabricated Metals | Machinery | Other Mfg. |
|-------------------------|-------|-------------------------------|--|--|-----------|---------------|
| All Countries | 100.0 | 12.2 | 28.7 | 13.2 | 21.3 | 24.5 |
| Canada, Europe, & Japan | 100.0 | 12.1 | 29.8 | 13.3 | 20.0 | 24.7 |
| Canada | 100.0 | 17.0 | 6.5 | 19.0 | 27.5 | 29.9 |
| Europe | 100.0 | 11.1 | 35.9 | 11.4 | 17.9 | 23.7 |
| EEC(9) | 100.0 | 46.1 | | 10.5 | 16.8 | 26.6 |
| France | 100.0 | 1.6 | 13.9 | 21.2 | 2.9 | 60.4 |
| Germany | 100.0 | 0.5 | 59.2 | 8.0 | 12.4 | 20.0 |
| Italy | 100.0 | a | 0 | 0.1 | 70.2 | b |
| Netherlands | 100.0 | c | 42.8 | 10.5 ^b | 43.3 | 3.4 |
| U.K. | 100.0 | 27.2 | 28.0 | 6.8 | 17.6 | 20.4 |
| Other Europe | 100.0 | 51.6 | | 16.0 | 23.1 | 9.3 |
| Finland | 100.0 | 0 | 0 | 23.7 | | 76.3 |
| Norway | 100.0 | 39.2 | | | 58.3 | 2.5 |
| Sweden | 100.0 | 4.6 | | 11.9 | 73.8 | 9.7 |
| Switzerland | 100.0 | c | 39.2 | 42.5 ^b | 10.5 | 7.8 |
| Japan | 100.0 | 11.4 | 8.2 | 26.8 | 30.1 | 23.5 |
| Aust., N.Z., S. Africa | 100.0 | n.a. | n.a. | 19.0 | n.a. | 54.8 |
| Developing Countries | 100.0 | 13.9 | 8.9 | 11.0 | 47.9 | 22.6 |

^aIncluded in Other Mfg.

^cIncluded with primary and fabricated metals

^bIncluding Foods

Source: U.S. Dept. of Commerce (1983), Table E-6.

Appendix Table S-11

Distribution of Exports, by Major Industry Group
Selected Years, 1965-1982
Sweden, U.S., and Major Country Groups

| | Total | Foods ^a | Chemicals | Metals | Non- Elec. Mach. | Elec. Mach. | Transp. Equip. | Other Manuf. ^b |
|------------------|--------|--------------------|-----------|--------|------------------------|----------------|-------------------|------------------------------|
| 1965 | | | | | | | | |
| U.S.A. | 100.00 | 9.94 | 12.64 | 11.58 | 21.17 | 7.66 | 19.20 | 17.81 |
| Sweden | 100.00 | 2.66 | 4.19 | 14.26 | 17.51 | 6.45 | 15.99 | 38.95 |
| Market Economies | 100.00 | 13.60 | 10.27 | 15.59 | 13.63 | 6.76 | 13.46 | 26.69 |
| Develpd. M. E. | 100.00 | 10.03 | 10.95 | 15.57 | 14.92 | 7.31 | 14.71 | 26.51 |
| Develpd. Europe | 100.00 | 9.09 | 11.29 | 15.74 | 15.13 | 7.34 | 13.99 | 27.43 |
| 1966 | | | | | | | | |
| U.S.A. | 100.00 | 8.69 | 12.75 | 11.90 | 20.85 | 7.88 | 19.62 | 18.30 |
| Sweden | 100.00 | 2.99 | 4.38 | 14.97 | 19.32 | 6.88 | 13.88 | 37.58 |
| Market Economies | 100.00 | 13.03 | 10.30 | 15.53 | 13.96 | 6.82 | 13.78 | 26.58 |
| Develpd. M. E. | 100.00 | 9.55 | 11.03 | 15.15 | 15.34 | 7.38 | 15.14 | 26.41 |
| Develpd. Europe | 100.00 | 8.93 | 11.43 | 15.28 | 15.86 | 7.16 | 13.93 | 27.41 |
| 1970 | | | | | | | | |
| U.S.A. | 100.00 | 7.19 | 12.03 | 10.99 | 21.08 | 8.12 | 22.79 | 17.79 |
| Sweden | 100.00 | 1.94 | 4.62 | 15.33 | 18.89 | 7.80 | 16.95 | 34.47 |
| Market Economies | 100.00 | 11.27 | 10.13 | 15.64 | 14.17 | 7.71 | 15.58 | 25.51 |
| Develpd. M. E. | 100.00 | 8.33 | 10.84 | 15.14 | 15.56 | 8.20 | 17.15 | 24.78 |
| Develpd. Europe | 100.00 | 8.38 | 11.60 | 15.16 | 16.26 | 7.00 | 14.24 | 26.54 |
| 1974 | | | | | | | | |
| U.S.A. | 100.00 | 7.64 | 12.71 | 9.37 | 19.81 | 8.84 | 23.05 | 18.58 |
| Sweden | 100.00 | 1.81 | 5.48 | 14.57 | 16.92 | 8.07 | 16.85 | 36.30 |
| Market Economies | 100.00 | 10.20 | 12.41 | 16.31 | 13.35 | 7.90 | 14.96 | 24.35 |
| Develpd. M. E. | 100.00 | 8.02 | 13.11 | 16.26 | 14.59 | 8.05 | 16.41 | 23.55 |
| Develpd. Europe | 100.00 | 8.52 | 14.55 | 16.14 | 15.01 | 7.61 | 12.61 | 25.56 |
| 1977 | | | | | | | | |
| U.S.A. | 100.00 | 7.58 | 12.64 | 7.50 | 20.93 | 9.94 | 23.68 | 18.34 |
| Sweden | 100.00 | 1.83 | 5.47 | 13.18 | 18.34 | 9.53 | 19.66 | 31.99 |
| Market Economies | 100.00 | 11.89 | 10.73 | 13.00 | 13.81 | 8.90 | 17.14 | 25.25 |
| Develpd. M. E. | 100.00 | 8.06 | 11.52 | 13.34 | 15.33 | 9.09 | 18.99 | 23.68 |
| Develpd. Europe | 100.00 | 8.77 | 12.76 | 13.39 | 15.33 | 8.29 | 15.23 | 25.78 |

Appendix Table S-11 (continued)

| | Total | Foods ^a | Chemicals | Metals | Non- Elec. Mach. | Elec. Mach. | Transp. Equip. | Other Manuf. ^b |
|------------------|--------|--------------------|-----------|--------|------------------------|----------------|-------------------|------------------------------|
| 1978 | | | | | | | | |
| U.S.A. | 100.00 | 7.85 | 12.22 | 7.35 | 20.73 | 9.70 | 23.71 | 18.44 |
| Sweden | 100.00 | 1.81 | 5.82 | 14.41 | 18.40 | 9.38 | 18.29 | 31.89 |
| Market Economies | 100.00 | 10.57 | 10.99 | 13.11 | 13.94 | 9.00 | 16.77 | 25.62 |
| Develpd. M. E. | 100.00 | 8.11 | 11.76 | 13.37 | 15.36 | 9.09 | 18.41 | 23.90 |
| Develpd. Europe | 100.00 | 8.80 | 13.06 | 13.58 | 15.43 | 8.20 | 14.77 | 26.17 |
| 1982 | | | | | | | | |
| U.S.A. | 100.00 | 6.68 | 13.35 | 7.34 | 23.21 | 10.75 | 19.78 | 18.30 |
| Sweden | 100.00 | 2.41 | 6.69 | 14.16 | 18.19 | 9.71 | 18.28 | 30.56 |
| Market Economies | 100.00 | 9.92 | 11.82 | 12.41 | 14.17 | 9.70 | 16.93 | 25.06 |
| Develpd. M. E. | 100.00 | 8.13 | 12.47 | 12.61 | 15.63 | 9.64 | 18.53 | 22.99 |
| Develpd. Europe | 100.00 | 9.28 | 14.08 | 12.81 | 15.05 | 7.86 | 15.42 | 25.50 |

^aIncluding tobacco products

^bExcluding tobacco products

Source: UN trade tapes.

Appendix Table S-12

Exports of Manufactures by the U.S. and Sweden, by Broad Industry Groups
Selected Years, 1965-1983
(Unit: \$ million)

| | Total Mfg. | Foods | Chemicals | Metals | Machinery | | Transport Equip. | Other Mfg. | |
|---------------|---------------|---------------------|-----------|--------|-----------|----------------------|---------------------|---------------|---------------------|
| | | | | | Total | Non-Elect. Elect. | | | |
| <u>U.S.</u> | | | | | | | | | |
| 1965 | 20,692 | 2,056 ^a | 2,616 | 2,397 | 5,966 | 4,380 | 1,585 | 3,972 | 3,685 ^b |
| 1966 | 22,827 | 1,985 ^a | 2,909 | 2,717 | 6,559 | 4,759 | 1,800 | 4,480 | 4,177 ^b |
| 1977 | 94,890 | 7,194 ^a | 11,421 | 7,115 | 29,291 | 19,857 | 9,434 | 22,466 | 17,403 ^b |
| 1978 | 111,790 | 8,776 ^a | 13,663 | 8,217 | 34,013 | 23,174 | 10,839 | 26,509 | 20,612 ^b |
| 1982 | 160,169 | 10,692 ^a | 21,389 | 12,715 | 54,392 | 37,180 | 17,212 | 31,676 | 29,305 ^b |
| 1983 | 155,568 | 11,070 ^a | 20,985 | 11,148 | 50,023 | 32,375 | 17,648 | 32,452 | 29,890 ^b |
| <u>SWEDEN</u> | | | | | | | | | |
| 1965 | 3,604 | 97 ^b | 151 | 514 | 863 | 631 | 232 | 576 | 1,403 ^a |
| 1970 | 6,355 | 126 ^b | 294 | 974 | 1,697 | 1,201 | 496 | 1,077 | 2,187 ^a |
| 1974 | 14,864 | 280 ^b | 814 | 2,166 | 3,714 | 2,515 | 1,199 | 2,505 | 5,385 ^a |
| 1978 | 20,651 | 389 ^b | 1,202 | 2,976 | 5,736 | 3,799 | 1,937 | 3,777 | 6,571 ^a |
| 1982 | 24,567 | 593 ^a | 1,643 | 3,478 | 6,855 | 4,470 | 2,385 | 4,490 | 7,509 ^b |

^aExcluding tobacco products

^bIncluding tobacco products

Source: UN trade tapes and, for 1983, Lipsey and Kravis (1986).

Appendix Table S-13

Exports of Manufactures by All Market Economies and by Developed Market Economies
By Broad Industry Groups, Selected Years, 1965-1983
(Unit: \$ million)

| | Total Mfg. | Foods | Chemicals | Metals | Machinery | | Transport Equip. | Other Mfg. | |
|-----------------------------------|---------------|---------|-----------|---------|-----------|-------------------|----------------------|---------------|---------|
| | | | | | Total | Non-Elect. Elect. | | | |
| <u>All Market Economies</u> | | | | | | | | | |
| 1965 ^a | 116,796 | 16,243 | 11,999 | 18,203 | 23,811 | 15,920 | 7,891 | 15,725 | 30,815 |
| 1966 ^b | 130,343 | 16,979 | 13,421 | 20,237 | 27,096 | 18,201 | 8,895 | 17,962 | 34,648 |
| 1970 ^a | 214,800 | 24,815 | 21,755 | 33,590 | 46,996 | 30,434 | 16,562 | 33,155 | 54,189 |
| 1974 ^a | 515,081 | 53,755 | 63,930 | 84,035 | 109,500 | 68,785 | 40,715 | 77,042 | 126,819 |
| 1977 ^b | 715,220 | 79,293 | 76,740 | 93,560 | 162,482 | 98,796 | 63,686 | 122,569 | 180,576 |
| 1978 ^a | 857,748 | 93,171 | 94,229 | 112,463 | 196,767 | 119,588 | 77,179 | 143,861 | 217,251 |
| 1982 ^b | 1,119,996 | 111,074 | 132,365 | 138,937 | 267,347 | 158,752 | 108,595 | 189,643 | 280,630 |
| 1983 ^b | 1,118,196 | 104,589 | 135,079 | 134,434 | (| | 462,412 ^c |) | 281,682 |
| <u>Developed Market Economies</u> | | | | | | | | | |
| 1965 ^a | 106,111 | 10,966 | 11,616 | 16,520 | 23,582 | 15,828 | 7,754 | 15,612 | 27,815 |
| 1966 ^b | 117,843 | 11,253 | 13,004 | 17,851 | 26,772 | 18,071 | 8,701 | 17,846 | 31,117 |
| 1970 ^a | 193,250 | 16,672 | 20,942 | 29,266 | 45,905 | 30,068 | 15,837 | 33,146 | 47,319 |
| 1974 ^a | 461,374 | 38,107 | 60,470 | 75,041 | 104,480 | 67,330 | 37,150 | 75,704 | 107,572 |
| 1977 ^b | 630,216 | 50,809 | 72,578 | 84,057 | 153,849 | 96,587 | 57,262 | 119,666 | 149,257 |
| 1978 ^a | 759,161 | 63,919 | 89,272 | 101,527 | 185,578 | 116,581 | 68,997 | 139,740 | 179,125 |
| 1982 ^b | 973,840 | 79,145 | 121,440 | 122,824 | 246,104 | 152,254 | 93,850 | 180,448 | 223,879 |
| 1983 ^b | 958,833 | 74,426 | 125,108 | 111,986 | (| | 424,122 ^d |) | 223,191 |

^aTobacco products included with foods

^bTobacco products included with Other Mfg.

^cCorresponding total for 1982, 457,990

^dCorresponding total for 1982, 426,552

Source: UN Trade Tapes and, for 1983, Lipsey and Kravis (1986)

Appendix Table S-14

Exports of Manufactures by U.S. and Swedish Multinationals
By Broad Industry Groups, Selected Years, 1965-1983

| | Total Mfg. | Foods | Chemicals | Metals | Machinery | | Transport Equip. | Other Mfg. | |
|--|---------------|-------|-----------|--------|-----------|----------------------|---------------------|---------------|--------|
| | | | | | Total | Non-Elect. Elect. | | | |
| VALUE OF EXPORTS | | | | | | | | | |
| <u>U.S. Firms and Affiliates (\$ million)</u> | | | | | | | | | |
| 1966 | 23,147 | 1,329 | 3,066 | 1,694 | 6,838 | NA | NA | 6,442 | 3,780 |
| 1977 | 125,746 | 5,917 | 17,591 | 7,370 | 36,929 | 22,925 | 14,004 | 38,541 | 19,418 |
| 1982 | 198,732 | 9,030 | 33,625 | 11,019 | 62,579 | 35,964 | 26,615 | 53,428 | 29,042 |
| 1983 | 197,977 | 9,707 | 33,167 | 8,615 | 61,369 | 34,440 | 26,929 | 57,413 | 27,710 |
| <u>Swedish Firms and Affiliates (\$ million)</u> | | | | | | | | | |
| 1965 | 1,891 | 3 | 56 | 309 | 663 | 438 | 225 | 333 | 527 |
| 1970 | 4,308 | 23 | 122 | 569 | 1,286 | 826 | 460 | 930 | 1,377 |
| 1974 | 10,349 | 45 | 328 | 1,213 | 3,026 | 1,829 | 1,197 | 2,229 | 3,508 |
| 1978 | 15,816 | 92 | 660 | 2,045 | 4,819 | 2,942 | 1,877 | 3,828 | 4,372 |
| PERCENTAGE DISTRIBUTION | | | | | | | | | |
| <u>U.S. Firms and Affiliates</u> | | | | | | | | | |
| 1966 | 100.0 | 5.7 | 13.2 | 7.3 | 29.5 | NA | NA | 27.8 | 16.3 |
| 1977 | 100.0 | 4.7 | 14.0 | 5.9 | 29.4 | 18.2 | 11.1 | 30.6 | 15.4 |
| 1982 | 100.0 | 4.5 | 16.9 | 5.5 | 31.5 | 18.1 | 13.4 | 26.9 | 14.6 |
| 1983 | 100.0 | 4.9 | 16.8 | 4.4 | 31.0 | 17.4 | 13.6 | 29.0 | 14.0 |
| <u>Swedish Firms and Affiliates</u> | | | | | | | | | |
| 1965 | 100.0 | .2 | 3.0 | 16.3 | 35.1 | 23.2 | 11.9 | 17.6 | 27.9 |
| 1970 | 100.0 | .5 | 2.8 | 13.2 | 29.9 | 19.2. | 10.7 | 21.6 | 32.0 |
| 1974 | 100.0 | .4 | 3.2 | 11.7 | 29.2 | 17.7 | 11.6 | 21.5 | 33.9 |
| 1978 | 100.0 | .6 | 4.2 | 12.9 | 30.5 | 18.6 | 11.9 | 24.2 | 27.6 |

Source: Lipsey and Kravis (1986) and the IUI Survey Data on Swedish Manufacturing Abroad

Appendix Table S-15

Shares (Per Cent) of the U.S. and Sweden in Market Economy and Developed Market Economy Exports of Manufactures
By Broad Industry Groups, Selected Years, 1965-1983

| | Total Mfg. | Foods ^a | Chemicals | Metals | Machinery | | Transport Equip. | Other Mfg. ^a | |
|---|---------------|--------------------|-----------|--------|-----------|-------------------|---------------------|----------------------------|------|
| | | | | | Total | Non-Elect. Elect. | | | |
| SHARE OF ALL MARKET ECONOMIES' EXPORTS | | | | | | | | | |
| <u>U.S.</u> | | | | | | | | | |
| 1965 | 17.7 | 12.7 | 21.8 | 13.2 | 25.1 | 27.5 | 20.1 | 25.3 | 12.0 |
| 1966 | 17.5 | 11.7 | 21.7 | 13.4 | 24.3 | 26.1 | 20.2 | 24.9 | 12.1 |
| 1977 | 13.3 | 9.1 | 14.9 | 7.6 | 18.3 | 20.1 | 14.8 | 18.3 | 9.6 |
| 1978 | 13.0 | 9.4 | 14.5 | 7.3 | 17.3 | 19.4 | 14.0 | 18.4 | 9.5 |
| 1982 | 14.3 | 9.6 | 16.2 | 9.2 | 20.3 | 23.4 | 15.8 | 16.7 | 10.4 |
| 1983 | 13.9 | 10.6 | 15.5 | 8.3 | NA | (| 17.8 ^b |) | 10.6 |
| <u>SWEDEN</u> | | | | | | | | | |
| 1965 | 3.08 | .59 | 1.26 | 2.82 | 3.62 | 3.96 | 2.94 | 3.66 | 4.55 |
| 1970 | 2.96 | .51 | 1.35 | 2.90 | 3.61 | 3.95 | 2.99 | 3.22 | 4.04 |
| 1974 | 2.89 | .52 | 1.27 | 2.58 | 3.39 | 3.66 | 2.94 | 3.25 | 4.25 |
| 1978 | 2.41 | .42 | 1.28 | 2.65 | 2.92 | 3.18 | 2.51 | 2.63 | 3.02 |
| 1982 | 2.19 | .53 | 1.24 | 2.50 | 2.56 | 2.82 | 2.20 | 2.37 | 2.68 |
| SHARE OF DEVELOPED MARKET ECONOMIES' EXPORTS | | | | | | | | | |
| <u>U.S.</u> | | | | | | | | | |
| 1965 | 19.5 | 18.8 | 22.5 | 14.5 | 25.3 | 27.7 | 20.4 | 25.4 | 13.3 |
| 1966 | 19.5 | 17.6 | 22.4 | 15.2 | 24.5 | 26.3 | 20.7 | 25.1 | 13.4 |
| 1977 | 15.1 | 14.2 | 15.7 | 8.5 | 19.1 | 20.6 | 16.5 | 18.8 | 11.7 |
| 1978 | 14.7 | 13.7 | 15.3 | 8.1 | 18.3 | 19.9 | 15.7 | 19.0 | 11.5 |
| 1982 | 16.5 | 13.5 | 17.6 | 10.4 | 22.5 | 24.4 | 18.3 | 17.6 | 13.1 |
| 1983 | 16.3 | 14.9 | 16.8 | 10.4 | NA | (| 19.4 ^c |) | 13.4 |
| <u>SWEDEN</u> | | | | | | | | | |
| 1965 | 3.40 | .88 | 1.30 | 3.11 | 3.66 | 3.99 | 2.99 | 3.69 | 5.04 |
| 1970 | 3.29 | .76 | 1.40 | 3.33 | 3.70 | 3.99 | 3.13 | 3.25 | 4.62 |
| 1974 | 3.22 | .73 | 1.35 | 2.89 | 3.55 | 3.74 | 3.23 | 3.31 | 5.01 |
| 1978 | 2.72 | .61 | 1.35 | 2.93 | 3.09 | 3.26 | 2.81 | 2.70 | 3.67 |
| 1982 | 2.52 | .75 | 1.35 | 2.83 | 2.79 | 2.94 | 2.54 | 2.49 | 3.35 |

^aTobacco products included with Food for Sweden and with Other Mfg. for U.S.

^bCorresponding ratio for 1982 is 19.2.

^cCorresponding ratio for 1982 is 20.6

Source: Appendix Tables S-12 and S-13.

Appendix Table S-16

Shares of U.S. and Swedish Multinationals^a in Market Economy and
Developed Market Economy Exports of Manufactures
By Broad Industry Groups, Selected Years, 1965-1983

| | Total Mfg. | Foods ^b | Chemicals | Metals | Machinery | | Transport Equip. | Other Mfg. | |
|--|---------------|--------------------|-----------|--------|-----------|------------|---------------------|---------------|--------|
| | | | | | Total | Non-Elect. | | | Elect. |
| SHARE (%) OF EXPORTS BY ALL MARKET ECONOMIES | | | | | | | | | |
| <u>U.S.</u> | | | | | | | | | |
| 1966 | 17.8 | 7.8 | 22.8 | 8.4 | 25.2 | NA | NA | 35.9 | 10.9 |
| 1977 | 17.6 | 7.5 | 22.9 | 7.9 | 23.0 | 23.7 | 22.0 | 31.4 | 10.8 |
| 1982 | 17.7 | 8.1 | 25.4 | 7.9 | 23.4 | 22.7 | 24.5 | 28.2 | 10.3 |
| 1983 | 17.7 | 9.3 | 24.6 | 6.4 | NA | (| 25.7 ^c |) | 9.8 |
| <u>SWEDEN</u> | | | | | | | | | |
| 1965 | 1.62 | .02 | .47 | 1.70 | 2.78 | 2.75 | 2.85 | 2.12 | 1.71 |
| 1970 | 2.01 | .09 | .56 | 1.69 | 2.74 | 2.71 | 2.78 | 2.78 | 2.54 |
| 1974 | 2.01 | .08 | .51 | 1.44 | 2.76 | 2.66 | 2.94 | 2.89 | 2.77 |
| 1978 | 1.84 | .10 | .70 | 1.82 | 2.45 | 2.46 | 2.43 | 2.66 | 2.01 |
| SHARE (%) OF EXPORTS BY DEVELOPED MARKET ECONOMIES | | | | | | | | | |
| <u>U.S.</u> | | | | | | | | | |
| 1966 | 19.2 | 9.5 | 22.8 | 9.2 | 25.4 | NA | NA | 36.1 | 11.8 |
| 1977 | 19.1 | 10.3 | 23.6 | 8.3 | 22.2 | 23.3 | 20.3 | 31.9 | 12.6 |
| 1982 | 19.4 | 10.3 | 26.6 | 8.9 | 22.8 | 22.8 | 22.8 | 29.2 | 12.4 |
| 1983 | 19.5 | 12.0 | 25.6 | 7.7 | NA | (| 26.1 ^d |) | 11.9 |
| <u>SWEDEN</u> | | | | | | | | | |
| 1965 | 1.78 | .03 | .48 | 1.87 | 2.81 | 2.77 | 2.90 | 2.13 | 1.89 |
| 1970 | 2.23 | .14 | .58 | 1.94 | 2.80 | 2.75 | 2.90 | 2.81 | 2.91 |
| 1974 | 2.24 | .12 | .54 | 1.62 | 2.90 | 2.72 | 3.22 | 2.94 | 3.26 |
| 1978 | 2.08 | .14 | .74 | 2.01 | 2.60 | 2.52 | 2.72 | 2.74 | 2.44 |

^aParents and majority-owned affiliates in all market economies and in developed market economies.

^bTobacco products included with food for Sweden and with Other Mfg. for U.S.

^cCorresponding ratio for 1982 is 25.3.

^dCorresponding ratio for 1982 is 25.5.

Source: Appendix Tables S-13 and S-14

Appendix Table S-17

U.S. and Other Foreign-Owned Manufacturing Affiliates in Sweden, 1970
Distribution of Sales by Industry

| | <u>U.S. Affiliates</u> | <u>Other Foreign-Owned Affiliates</u> |
|--------------------------|------------------------|---|
| Foods | 2.4 | 23.2 |
| Chemicals | 23.8 | 17.2 |
| Metals | 16.2 | 13.1 |
| Non-Elect. Machinery | 39.6 | 4.9 |
| Electrical Machinery | 12.7 | 21.7 |
| Transport Equipment | 0 | 0 |
| Other Manufacturing | 8.3 | 20.0 |
| Total | 100.0 | 100.0 |
| Total Sales (\$ million) | 419 | 633 |

Source: Samuelsson (1977), Table 2:8, p. 40.

The industry classification has been altered here to match that of the other tables in this paper.