

THE EXPORT PERFORMANCE OF U.S. AND SWEDISH MULTINATIONALS

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While the U.S. and Sweden both lost more than 20 percent of their shares of world and developed countries' exports of manufactures between the mid-1960s and mid-1980s, the export shares of their multinational firms stayed fairly stable or even increased. The multinationals raised the proportion of their worldwide exports that they supplied from their overseas affiliates. These developments suggest that the declines in the trade shares of the U.S. and Sweden were not due mainly to deterioration in the innovativeness or inventiveness of American and Swedish firms, their management ability or 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.

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 firms. These were skewed, in the mid-1960s, to industries that were to enjoy rapid growth in the next decade or so. Despite these initial comparative advantages, the exports of both countries fell far behind world export growth.

The comparative advantages of both countries' multinationals were even more biased toward fast-growth industries than those of the countries. That fact partly accounted for the better export performance of the multinationals relative to their home countries, but the multinationals outperformed their countries within each industry as well as for manufacturing as a whole.

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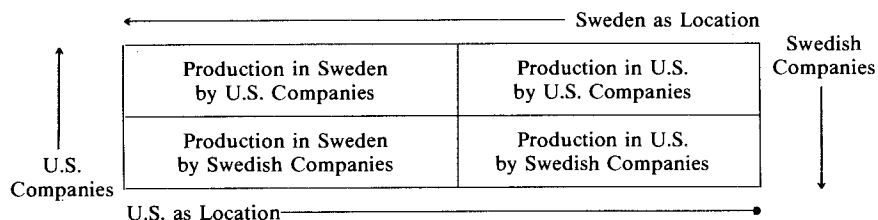
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1. INTRODUCTION

Most governments worry about the competitiveness of their economies, and Sweden and the United States are no exceptions, particularly since they have both gone through periods 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 their innovativeness or inventiveness, in their management abilities, and in their technological capabilities (see e.g. Abernathy *et al.*, 1983, Thurow, 1985).

These characteristics of firms are given a different role in the recent literature on direct investment. These are the elements of the competitiveness 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.

A simple illustration of this distinction and of the pattern of ownership and location of production expected from it with respect to the U.S. and Sweden is presented in the diagram below. 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 factor prices, on access to that country's market or on 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. 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 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 the effects of these export promoting policies are circumscribed. They are limited by the ability of companies to move their export production to other locations if the policies impose costs on them that are too large, and they are limited also by the watchfulness of other countries over their own 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. The strengths of these U.S. firms might therefore be reflected mainly in their shares in consumption relative to local producers. 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. 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 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 percent 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 has the U.S. government. In particular, Swedish firms were prohibited, during most of the period covered by this study, from financing their foreign subsidiaries with Swedish capital. No similar regulations have governed U.S. firms for most of the period, aside from the years of the OFDI regulations.

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.

2. 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-1960s to the mid-1980s, if we define competitiveness as shares of world or developed country exports.² As shown in Table 1, Swedish export shares declined by about

¹The data on U.S. direct investment abroad are mainly from the surveys of U.S. multinational enterprises carried out by the U.S. Department of Commerce, with adjustments to the data described in Lipsey and Kravis (1986). The data on Swedish foreign investment come from the Industriens Utredningsinstitut (IUI) of Stockholm and have been analyzed in a series of volumes by Birgitta Swedenborg (1973, 1979, 1982 and 1989). The IUI has published the results of five surveys of Swedish multinationals covering 1965, 1970, 1974, 1978, and 1986. 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 and 1986, when information based on the broader definition is available also for Sweden, the firms excluded by the narrower definition accounted for some 25 and 14 percent, respectively, 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. 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.

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. The export data are based on UN trade tapes, converted from the SITC classification to an industry classification to match the data on multinationals. The methods are described in Blomström, Kravis, and Lipsey (1988).

TABLE 1
U.S. AND SWEDISH SHARES IN WORLD AND DEVELOPED-
COUNTRY EXPORTS OF MANUFACTURES

Year	Shares (%) of Exports from			
	World		Developed Countries	
	U.S.	Sweden	U.S.	Sweden
1965	17.2	3.00	19.4	3.38
1966	17.1	2.94	19.3	3.31
1970	15.9	2.93	17.8	3.28
1974	14.4	2.88	16.1	3.23
1977	13.2	2.52	15.1	2.87
1978	13.0	2.40	14.8	2.73
1982	14.6	2.18	16.8	2.52
1983	13.9	2.19	16.2	2.56
1984	13.8	2.18	16.3	2.58
1985	13.4	2.20	15.7	2.58
1986	11.7	2.32	13.6	2.69

Source: United Nations trade tapes. For details see Blomström and Lipsey (1986), Appendix Table S-15. Classification of countries as developed according to U.S. Department of Commerce (1985) definition.

20–23 percent between 1965 and 1986, while the U.S. shares fell by 30–32 percent over the same period.³ Sweden's share recovered slightly after the large devaluation of the Krona in 1982, and there was a temporary reversal of the U.S. decline between 1978 and 1982, probably also associated with the low exchange value of the U.S. dollar around 1980.

These declines in export shares could reflect to some extent the declines of Swedish and U.S. shares of world output. From 1965 to 1985, Sweden's share of world output fell by 23 percent, as compared with 27 percent for exports (Table 1 and 2), and its share of developed countries' output by 18 percent, as compared with 24 percent for exports. The U.S. shares in output fell 16 and 8 percent, as compared with 22 and 19 percent for exports. Thus, some of the decline in export shares, especially for Sweden, paralleled the declining shares of the two countries in output. However, the export/output ratios of the two countries did not rise as fast as those for the world or for developed countries as a group.

In contrast to the declines in country competitiveness, the shares in world exports of multinational firms based in the two countries stayed fairly steady or even increased (see Table 3).

The share of U.S. multinationals in world exports was virtually unchanged over 20 years, while the share of the U.S. as a country fell by 32 percent. Swedish multinationals' share rose by 16 percent in 21 years, while the share of Sweden itself fell by 23 percent. After 1974, there was some decline for Swedish multinationals, but it was smaller than that for Sweden.

³Trade in manufactures is defined here to match the definition of manufacturing industries in the direct investment data. It thus includes manufactured food products, but excludes petroleum refining and coal products.

TABLE 2
U.S. AND SWEDISH SHARES IN WORLD AND DEVELOPED
COUNTRY GROSS DOMESTIC PRODUCT

Year	Shares (%) of World and Developed Country Output			
	World		Developed Country	
	U.S.	Sweden	U.S.	Sweden
1965	32.1	0.94	42.5	1.24
1966	32.4	0.92	42.6	1.22
1970	29.8	0.92	39.5	1.22
1974	27.4	0.84	37.5	1.16
1977	27.0	0.78	37.8	1.08
1978	27.1	0.76	37.9	1.06
1982	25.7	0.72	36.9	1.04
1983	26.4	0.72	37.7	1.04
1984	26.7	0.72	38.3	1.04
1985	27.1	0.72	38.9	1.02

Source: Summers and Heston (1988). GDP in current international dollars.

TABLE 3
SHARES (%) OF U.S. AND SWEDISH
MULTINATIONAL FIRMS IN WORLD
EXPORTS OF MANUFACTURES

Year	U.S.	Swedish
1965	—	1.57
1966	17.3	—
1970	—	1.99
1974	—	2.01
1977	17.5	—
1978	—	1.84
1982	17.6	—
1983	17.5	—
1984	18.0	—
1985	18.3	—
1986	16.7	1.82

Source: Blomström and Lipsey (1986), Appendix Table S-2, Lipsey and Kravis (1986), and later data from U.S. Department of Commerce (1986), (1987), (1988a), and (1988b), and from Swedenborg (1989).

Note: Shares of multinational firms include majority-owned foreign affiliates.
— Not available.

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, then declined substantially between 1977 and 1982 (Lipsey and Kravis, 1986, Table U-10), and declined slightly again over the next four years (U.S. Department of Commerce, 1985, Table 6, and 1988b, Table 2). 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 as clear. The number of Swedish firms with production affiliates abroad rose from 82 in 1965 to 118 in 1978 (Swedenborg, 1982, p. 38) and then dropped to 105 during the next eight years (Swedenborg, 1989). Of these, 27 were in the group continuously. Another 18 disappeared, but in effect remained, because they were merged into other firms in the multinational group. There were about 100 genuine disappearances and 143 new entrants to the multinational class, a number that suggests the possibility that the growth of multinationals' exports and foreign production were substantially affected by the conversion of firms to multinational status, at least before 1978. After that, there were more indications of net exit than of net entry.

That question can be at least partially resolved by comparing these measures of competitiveness for all Swedish multinationals with corresponding ones for two fixed groups of the largest multinationals. This is done in Table 4. From

TABLE 4
SHARES OF ALL SWEDISH MULTINATIONALS AND OF 28 AND 27 SWEDISH FIRMS IN
EXPORTS OF MANUFACTURES

	1965	1978	1983	1986
Parent exports as % of world exports				
All Swedish multinationals	1.45	1.49	—	1.40
28 firms	1.09	1.07	1.07	—
27 firms	1.15	1.07	—	1.17
Parent and majority-owned affiliate exports as % of world exports				
All Swedish multinationals	1.57	1.84	—	1.82
28 firms	1.21	1.32	—	—

Source: Blomström and Lipsey (1986), Appendix Tables S-2 and S-3, UN world trade tapes, and Swedenborg (1989).

Note: — Not available.

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 panels of 28 and 27 firms is similar to the trend for all Swedish multinationals, partly because these 28 and 27 are the larger firms. The trend for the panel 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 Sweden and the U.S. extends to the shares of their multinationals in their home-country exports (see Table 5). These rose

TABLE 5
U.S. AND SWEDISH PARENT EXPORTS AS % OF HOME-COUNTRY
EXPORTS OF MANUFACTURES

Year	U.S.	Sweden		
		Total	28 Firms	27 Firms
1965	—	47.0	35.3	38.4
1966	62.7	—	—	—
1970	—	59.3	—	43.2
1974	—	58.6	—	42.7
1977	69.4	—	—	—
1978	—	61.8	44.6	44.6
1982	64.6	—	—	—
1983	65.2	—	54.0	—
1984	66.8	—	—	—
1985	70.0	—	—	—
1986	69.2	59.4	—	50.3

Source: Blomström and Lipsey (1986), Appendix Tables S-2 and S-3, and Lipsey and Kravis (1986), and, for later years, UN world trade tapes, U.S. Department of Commerce (1986), (1987), (1988a), and (1988b), and Swedenborg (1989).

Note: — Not available.

in both countries from the mid-1960s to the mid-1980s. The panel data for Sweden show that the increase was not simply the result of a changing universe of multinationals. The aggregate data for the U.S. show a decline, possibly illusory (see Lipsey and Kravis, 1987), from 1977 to 1982, possibly a consequence of the low value of the dollar around 1980. Then the ratio increased again through 1985.

Another parallel between the Swedish and U.S. multinationals is the rise in shares of world exports accounted for by their affiliates. As shown in Table 6 that share increased rapidly until at least the mid-1970s in both countries.

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 the location of their production for export, in percentage terms, from their home countries to the host countries in which their affiliates were operating (see Table 7). That is not to say that there was necessarily any reduction in exports from the home country, but only that the home country share in exports declined.

Among U.S. multinationals, there was a large shift toward exporting from affiliates between 1966 and 1977, but relatively little change in the next nine years, although the movement continued. 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. 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 percent of U.S. affiliates' sales in 1977 and 39 percent in 1986, U.S. Dept. of Commerce, 1988b, Table 40)

TABLE 6
SHARES (%) OF U.S. AND SWEDISH
FOREIGN AFFILIATES IN WORLD
(OTHER THAN PARENT-COUNTRY)
EXPORTS OF MANUFACTURES

Year	U.S.	Sweden
1965	—	0.17
1966	8.0	—
1970	—	0.26
1974	—	0.33
1977	9.6	—
1978	—	0.36
1982	9.6	—
1983	9.8	—
1984	10.2	—
1985	10.3	—
1986	9.8	0.44

Source: Blomström and Lipsey (1986), Appendix Table S-2 and Lipsey and Kravis (1986), and, for later years, UN world trade tapes, U.S. Department of Commerce (1986), (1987), (1988a), and (1988b), and Swedenborg (1989).

Note: Shares of foreign affiliates do not include minority-owned foreign affiliates.

— Not available.

TABLE 7
SHARES (%) OF U.S. AND SWEDISH MAJORITY-OWNED
AFFILIATES IN TOTAL EXPORTS OF PARENTS AND
MAJORITY-OWNED AFFILIATES

Year	U.S.	Sweden	
		All Multinationals	28 Firms
1965	—	10.4	9.7
1966	38.1	—	—
1970	—	12.5	—
1974	—	15.9	—
1977	47.6	—	—
1978	—	19.3	18.9
1982	46.7	—	—
1983	48.4	—	—
1984	48.9	—	—
1985	48.9	—	—
1986	51.6	24.3	—

Source: Blomström and Lipsey (1986), Appendix Tables S-2 and S-3, and Lipsey and Kravis (1986), and, for later years, UN world trade tapes, U.S. Department of Commerce (1986), (1987), (1988a), and (1988b), and Swedenborg (1989).

Note:—Not available.

as compared to 24 percent for Swedish affiliates in 1978 and 26 percent in 1986 (Swedenborg, 1989). The explanation is to be found in the greater export orientation of Swedish parents than of U.S. parents, as would be expected, given the much smaller size of the Swedish home market. Over 50 percent of Swedish parents' sales were exported in 1978 and 1986, while U.S. parents exported less than 10 percent of their sales in 1977 and 1986 (U.S. Department of Commerce, 1981, Tables II.R1 and II.T1 and 1988b, Tables 56 and 57). 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: a considerably more than doubling between 1965 and 1986.

3. 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 (detailed data for Swedish multinational are not yet available beyond that period), were reflected in similar declines within broad industry groups. As shown in Table 8, the competitiveness of Swedish manufacturing declined much less during that decade than that of the U.S. 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.

TABLE 8
CHANGES IN SHARES OF WORLD AND DEVELOPED COUNTRY EXPORTS OF MANUFACTURES

	U.S.						Sweden	
	World			Developed Country			World	Developed Country
	1978	1977	1982	1978	1977	1982		
	1965	1966	1966	1965	1966	1966	1978/1965	
Food and kindred products ^a	0.74	0.78	0.82	0.73	0.81	0.77	0.71	0.69
Chemicals and allied products	0.67	0.69	0.75	0.68	0.70	0.79	1.02	1.04
Metals	0.56	0.57	0.69	0.56	0.56	0.68	0.94	0.94
Machinery	0.69	0.75	0.84	0.72	0.78	0.90	0.81	0.84
Non-electrical	0.70	0.77	0.90	0.72	0.78	0.93	0.80	0.82
Electrical	0.70	0.73	0.78	0.77	0.80	0.88	0.85	0.94
Transport equipment	0.73	0.73	0.67	0.75	0.75	0.76	0.72	0.73
Other manufacturing ^a	0.79	0.79	0.86	0.87	0.87	0.98	0.66	0.73
All manufacturing	0.74	0.76	0.81	0.76	0.77	0.85	0.78	0.80

Source: United Nations trade tapes. See Blomström and Lipsey (1986), Appendix Table S-15.

Note: Changes = End year ÷ initial year.

World includes all market economies.

Developed Country includes developed market economies.

^aTobacco products included with Food and kindred products in Swedish data and with Other Manufacturing in U.S. data.

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 developed 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 in Table 9. 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.

TABLE 9
CHANGES IN SHARES OF U.S. AND SWEDISH MULTINATIONALS IN WORLD
AND DEVELOPED-COUNTRY EXPORTS OF MANUFACTURES

	U.S. Multinationals				Swedish Multinationals	
	World		Developed Country		World	Developed Country
	1977 1966	1982 1966	1977 1966	1982 1966		
Foods and kindred prod. ^a	0.96	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	0.94	0.94	0.90	0.97	1.07	1.07
Machinery	0.91	0.92	0.87	0.90	0.88	0.93
Non-electrical	—	—	—	—	0.89	0.91
Electrical	—	—	—	—	0.85	0.94
Transport equipment	0.87	0.79	0.88	0.81	1.25	1.29
Other manufacturing ^a	0.99	0.94	1.06	1.05	1.17	1.29
All manufacturing	0.99	0.99	0.99	1.01	1.14	1.17

Source: Blomström and Lipsey (1986), Appendix Table S-16, and Lipsey and Kravis (1986), Appendix Table U-7.

Note: World includes all market economies.

Developed Country includes developed market economies.

— Not available.

^aTobacco products included with Food and kindred products in Swedish data and with Other manufacturing in U.S. data.

Over the period 1966 to 1982, 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 percent in another, and lost almost 20 percent 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 percent in two of them) and lost only in the machinery industries, the groups in which their shares were initially largest.

In Table 10, we 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, 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.

TABLE 10
CHANGES IN MULTINATIONALS SHARES OF WORLD EXPORTS
RELATIVE TO CHANGES IN HOME-COUNTRY SHARES

	U.S.		Sweden
	$\frac{1977}{1966}$	$\frac{1982}{1966}$	1978/1965
Foods and kindred products	1.23 ^a	1.27 ^a	7.04 ^b
Chemicals and allied products	1.45	1.48	1.46
Metals	1.65	1.36	1.14
Machinery	1.20	1.10	1.09
Non-electrical	—	—	1.11
Electrical	—	—	1.00
Transport equipment	1.19	1.18	1.74
Other manufacturing	1.25 ^b	1.09 ^b	1.77 ^a
All manufacturing	1.30	1.22	1.46

Source: Table 8 and 9.

^aExcludes tobacco products.

^bIncludes tobacco products.

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.⁴

⁴We do not have data on costs, but we do know that U.S. multinationals, for example, increased the share of their exports that they supplied from outside the United States from 38 to 48 percent and the share from developing countries from 2.6 to 4.4 percent between 1966 and 1977.

4. 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. In this section we ask two 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?

In Table 11 we 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. U.S. multinationals appear to have had a relatively stronger position in the foods, chemicals, and transport equipment, while Swedish multinationals were more oriented towards metals industries and other manufacturing, the latter group including the traditional Swedish wood and paper and related industries.⁵

TABLE 11
INDUSTRY DISTRIBUTION (%) OF MANUFACTURED EXPORTS BY
MULTINATIONALS BASED IN THE U.S. AND SWEDEN

	U.S. (1977)	Sweden (1978)
Foods	4.7	0.6
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
Total	100.0	100.0

Source: Blomström and Lipsey (1986), Appendix Table S-14, and Lipsey and Kravis (1986), Appendix Table U-5.

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.

That the countries differ a good deal in their comparative advantages is indicated by their export patterns (see Table 12). In particular, the U.S., as a country, relative to Sweden, seems to have comparative advantages in foods,

⁵In order to be placed in a specific industry, a Swedish multinational must have at least 60 percent 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 percentage points, according to our rough calculations.

TABLE 12
INDUSTRY DISTRIBUTION (%) OF MANUFACTURED EXPORTS
FROM THE U.S. AND SWEDEN

	U.S. (1977)	Sweden (1978)
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: Blomström and Lipsey (1986), Appendix Table S-6 and Lipsey and Kravis (1986), Appendix Table U-3.

chemicals, and transport equipment, and Sweden in metals and other manufacturing. However, the two countries' machinery industries both account for roughly 30 percent 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.

5. 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.

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 (Table 13). 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 (see Table 14). 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 7.3.⁶ In fact, Swedish exports in 1978 were only 5.7

⁶The use of broad industry groups for the calculation of constant-share growth probably overstates the expected growth for Sweden because within the 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.

TABLE 13
GROWTH IN AGGREGATE MARKET ECONOMY EXPORTS

	1977 1966	1978 1965	1982 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 manufacturing	5.21 ^b	7.05 ^a	8.10 ^b
Total manufacturing	5.49	7.34	8.59

Source: Blomström and Lipsey (1986), Appendix Table S-13, and Lipsey and Kravis (1987).

^aExcluding tobacco products.

^bIncluding tobacco products.

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.

The comparative advantage of Swedish multinational firms, in their world-wide activities, was tilted a little more toward rapidly growing export industries

TABLE 14
GROWTH OF MANUFACTURED EXPORTS OF ALL MARKET
ECONOMIES, THE U.S., SWEDEN, AND U.S. AND SWEDISH
MULTINATIONALS ACTUAL AND CONSTANT SHARE

	1978/1965	
	Actual	Constant Share
All market economies	7.34	
Sweden	5.73	7.52
U.S.	5.40	7.62
Swedish multinationals	8.42	7.73
	1977/1966	
	Actual	Constant Share
All market economies	5.49	
U.S.	4.16	5.65
U.S. multinationals	5.43	5.87
	1982/1966	
	Actual	Constant Share
All market economies	8.59	
U.S.	7.02	8.99
U.S. multinationals	8.59	9.37

Source: Blomström and Lipsey (1986), Appendix Tables S-12, S-13, and S-14, and Lipsey and Kravis (1987).

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 ratio of 8.6.

It is clear, then, that the stability in the U.S. multinationals' 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.

6. 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. As can be seen in Table 15, both Sweden and the U.S. were shifting the composition

TABLE 15
CHANGES IN INDUSTRY SHARES IN EXPORTS: 1982/1965

	Developed Market Economies	All Market Economies	U.S.	Sweden
Foods	0.81	0.73	0.67	0.91
Chemicals	1.14	1.15	1.06	1.60
Metals	0.81	0.80	0.63	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	0.87	0.94	1.03	0.78

Source: Blomström and Lipsey (1986), Appendix Table S-11.

of 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 Swedish 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-1960s and the late 1970s, 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 (see Table 16). Multinationals from both countries, but especially from Sweden, were reducing their concentration in the machinery industries.

TABLE 16
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	0.87	0.82	0.68	3.00
Chemicals	0.99	1.06	1.39	1.37
Metals	0.63	0.81	1.24	0.80
Machinery	1.07	0.99	1.16	0.86
Non-electrical	1.00	—	1.05	0.80
Electrical	1.26	—	1.45	0.99
Transport equipment	1.21	1.10	1.14	1.36
Other manufacturing	1.00	0.94	0.82	1.00

Source: Blomström and Lipsey, 1986, Appendix Tables S-11 and S-14.

Note: — Not available.

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 in Table 17.

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, with respect to export trade, the world as a whole

TABLE 17
 CONSTANT SHARE EXPORT GROWTH, 1965-78 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: Blomström and Lipsey (1986), Appendix Tables S-11, S-12, and S-13.

Note: — Not available.

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.

7. CONCLUDING REMARKS

It is important in analyses of competitiveness and comparative advantage to take 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 percent of their shares of world and developed countries' exports of manufactures between the mid-1960's and the mid-1980'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 macroeconomic 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-1960s, 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 restructuring of the two countries' economies toward faster-growing industries moved more rapidly in the decade after the mid-1960s 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 and the home environment is not conducive to export production.

Aside from these similarities between the U.S. and Swedish experience, there were also some differences. One was that while the U.S. firms' share in world manufacturing exports remained stable over the studied period, the Swedish firms' share rose by 16 percent. 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 more than half of the exports by U.S. firms originate in their overseas affiliates, 75 percent 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.

REFERENCES

- Abernathy, W. J., Clark, K. B., and Kantrow, A. M., *Industrial Renaissance. Producing a Competitive Future for America*, Basic Books, New York, 1983.
- Blomström, M., Kravis, I. B., and Lipsey, R. E., Multinational Firms and Manufactured Exports from Developing Countries, NBER Working Paper 2493, January, 1988.
- Blomström, M. and Lipsey, R. E., The Export Performance of Swedish and U.S. Multinationals, NBER Working Paper 2081, November, 1986.

- Dunning, J. H., *International Production and the Multinational Enterprise*, George Allen and Unwin, London, 1981.
- Eliasson, G., Bergholm, F., Horvitz, E. C., and Jagrén, L., *De Svenska Storföretagen*, Stockholm, Industriens Utredningsinstitut, 1985.
- Lipsey, R. E., Recent Trends in U.S. Trade and Investment, in *New Problems of Advanced Societies*, Third International Symposium, Springer-Verlag, Heidelberg and New York, 1984.
- Lipsey, R. E., and Kravis, I. B., The Competitive Position of U.S. Manufacturing Firms, *Banca Nazionale del Lavoro Quarterly Review*, 153, June, 1985.
- , "The Competitiveness and Comparative Advantage of U.S. Multinationals, 1957-1983". NBER Working Paper 2051, October, 1986.
- , "The Competitiveness and Comparative Advantage of U.S. Multinationals, 1957-1984." *Banca Nazionale del Lavoro Quarterly Review*, No. 161, June 1987, 1987.
- Summers, R., and Heston, A., A New Set of International Comparisons of Real Product and Prices: Estimates for 130 Countries, 1950-85, *Review of Income and Wealth*, 34 (1), March, 1988.
- Swedenborg, B., *Den Svenska Industrins Investeringar i Utlandet*, Industriens Utredningsinstitut, Stockholm, 1973.
- , *The Multinational Operations of Swedish Firms, An Analysis of Determinants and Effects*, Industriens Utredningsinstitut, Stockholm, 1979.
- , *Svensk Industri i Utlandet: En Analys av Drivkrafter och Effekter*, Industriens Utredningsinstitut, Stockholm, 1982.
- , *Den Svenska Industrins Utlandsinvesteringar, 1960-1986*, Industriens Utredningsinstitut, Stockholm, 1989.
- Thurrow, L., *The Zero-Sum Solution. Building a World Class American Economy*, Simon & Schuster, New York, 1985.
- U.S. Department of Commerce, *U.S. Direct Investment Abroad, 1977*. Bureau of Economic Analysis, 1981.
- , *U.S. Direct Investment Abroad: 1982 Benchmark Survey Data*, Bureau of Economic Analysis, December, 1985.
- , *U.S. Direct Investment Abroad: Operations of U.S. Parents and their Foreign Affiliates, Revised 1983 Estimates*, Bureau of Economic Analysis, October, 1986.
- , *U.S. Direct Investment Abroad: Operations of U.S. Parents and their Foreign Affiliates, Revised 1984 Estimates*, Bureau of Economic Analysis, June, 1987.
- , (1988a). *U.S. Direct Investment Abroad: Operations of U.S. Parents and their Foreign Affiliates, Revised 1985 Estimates*, Bureau of Economic Analysis, June, 1988.
- , (1988b), *U.S. Direct Investment Abroad: Operations of U.S. Parents and their Foreign Affiliates, Preliminary 1986 Estimates*, Bureau of Economic Analysis, June, 1988.