SWEDISH MULTINATIONAL CORPORATIONS

RECENT TRENDS IN FOREIGN ACTIVITIES [1]

by

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MAY 1996

Abstract

This paper presents recent trends in the foreign activities of Swedish multinationals. The focus is on the distribution of production and R&D between the MNCs' domestic and foreign units, and the pattern of trade within the firms. Issues concerning entry modes and the importance of information technology in coordinating geographically dispersed production are also highlighted.

Despite considerable improvements in the conditions for industrial activities in Sweden, the trend towards increased internationalization of Swedish firms has continued. After a noticeable increase in the share of foreign production located in the former European Community between 1986 and 1990, the recent development suggests a return to a regional distribution of foreign activities similar to the one prevailing in 1986. In the 1990s the increase in foreign production by Swedish MNCs has been concentrated to the NAFTA-countries, Asia and Eastern Europe. Another striking result is the pronounced increase in the share of foreign R&D that has taken place between 1990 and 1994.

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[1]Valubale comments on earlier drafts of this paper have been provided by Roger Svensson and other IUI researchers.
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1. Introduction

In comparison with most other countries, and despite its limited size, Sweden has fostered an impressive number of large multinational firms. These corporations account for the overwhelming part of domestic manufacturing production, employment and exports. They also have a long tradition of extensive foreign operations and several of them have had production abroad since the early 20th century. Throughout the years the foreign activities of Swedish multinational corporations (MNCs) have grown markedly while inward investments by foreign firms have until recently been negligible.

In the wake of the unprecedented increase in foreign direct investment (FDI) flows in the 1980s, propelled by the dismantling of trade barriers and deregulation of capital markets, locational issues have become a prominent topic on the international research agenda. The most important theoretical contributions emanate from an extension of trade theory models, taking into account the influence of economies of scale and trade costs on the location of economic activities. Particular attention has been paid to whether production tends to agglomerate into certain regions and countries.[3]

The IUI has for a long time conducted research on multinational corporations, taking advantage of a unique IUI dataset that is based on a questionnaire sent to all Swedish MNCs approximately every fourth year since the 1960s (1965, 1970, 1974, 1978, 1986, 1990 and 1994). The questionnaire contains detailed information on the parent company as well as on the operation of each individual subsidiary. Research has focused on the home country effects of foreign activities by Swedish MNCs, particularly the extent to which FDI has replaced or complemented production in the domestic units (Swedenborg 1979, 1986, Eliasson *et al.* 1985, Svensson 1996). But also more macro-oriented issues have been examined, such as the implications for FDI on the allocation of production and the pattern of trade (Braunerhjelm 1990, 1994, Andersson *et al* 1996).

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[3]Contemporary trade models that incorporate locational matters have been developed by e.g. Krugman (1991), Brainard (1993), Venables (1993) and Markusen & Venables (1994, 1996). For a survey see Markusen (1996).

The purpose of the present study is to document the findings of the most recent questionnaire and to discuss the underlying forces, and consequences, of FDI. Emphasis will be on the distribution of production and R&D between foreign and domestic units of Swedish MNCs, the distribution of foreign production on industries, and the development of trade - both within the firms as well as to third markets. The approach is purely descriptive in the sense that there will be no rigorous modelling or testing of hypotheses. We focus on the period 1986-1994, although the evolution since the 1960s will also be presented. We also give a brief account of the background events, such as the policy changes that took place in Sweden in 1990-1994, and the global extent and pattern of FDI.[4]

Throughout this study we present the data in relative terms, for instance the percentage distribution of production and R&D on foreign and domestic units, the geographical and sectoral allocation of affiliate production, etc. The reason for not presenting data in absolute numbers is that we have not yet attained the desired answer rate (90 percent) for the questionnaire, and hence the figures for 1994 are not fully comparable with those for previous years.

The paper is organized in the following way. We continue in section 2 with a brief overview of the important policy changes in Sweden during the last decade, and a description of the general pattern of outward and inward FDI for Sweden and other OECD countries. In section 3 we show the geographical and sectoral allocation of production in Swedish affiliates abroad. We also discuss changes in entry mode, the degree of competition that Swedish MNCs encounter, and whether we can detect any changes in the size distribution of MNCs. In section 4, intra-firm trade, together with the geographical and sectoral patterns of exports by Swedish MNCs, are examined. Section 5 focuses on the distribution of R&D between domestic and foreign units, and on the importance of information technology (IT) for the operations of MNCs. In the final section, we conclude by relating the pattern of Swedish FDI to the policy changes that have taken place internationally and in Sweden.

[4]For an overview and detailed description of previous Swedish FDI, see Swedenborg (1986) and Andersson et al (1996).

2. Background

It seems obvious that in an internationalized, or globalized, economy, firms will locate production where the prerequisites for production are most favorable. A dismantling of trade barriers and a deregulation of capital markets carries two important consequences: first, competition for both national and multinational firms is intensified in the short-run, and second, firms are induced to locate production into regions where profit opportunities are highest in the long-run. The lower transportation costs are in relation to sales values, and the larger the differences in production costs are between regions, the more prone firms will be to relocate their production. Therefore, countries with relatively high production costs and an adverse institutional setting may find it hard to attract investment. Furthermore, if agglomeration factors influence the location of production, countries may find themselves "trapped" in virtuous or vicious investment cycles that tend to be self re-enforcing.[5] We therefore give a short recapitulation of the most important policy changes in the Swedish economy during the last decade to elucidate whether Sweden qualifies as an attractive host country for manufacturing production.

2.1. Domestic policies

From a political point of view, the period 1990-1994 contains several dramatic changes. During this period Sweden experienced its most far-reaching economic turmoil since the depression in the 1930s. The crises of the 1990s were manifested in decreasing GDP for three subsequent years, 1991-1993, and the loss of 250 000 jobs in the manufacturing sector. This downturn of the economy was parallelled by previously unattained productivity increases in the manufacturing sector. In 1994, propelled by the depreciation of the Swedish krona, the economy switched into an export-led boom, which persisted well into 1995, while domestic demand continued to lag behind.

[5]This may also have implications for growth. If agglomeration factors are particularly strong in knowledge-intensive production, countries will, according to the "new" growth theory, also experience different rates of growth.

Among the more decisive and far reaching political events in the early 1990s was Sweden's application in 1991 to become a member of the European Union. The European Union was established in 1993 and Sweden was accepted as a full member in 1995. Between 1993 and 1995 the EES (European Economic Space) agreement replaced the old free trade agreement between the EFTA states and the former EC (European Community). Although the EES-agreement gave Swedish firms roughly the same access to the EU-market as insider firms, some differences still prevailed, for instance with regard to border crossings and public procurement. In addition, the EFTA-countries had no say in the political process of the EU. Hence, to some extent outsiders were discriminated as compared to insider firms.

Some major economic policy changes also changes took place in the 1980s and the early 1990s, particularly in Sweden's monetary policy. In the latter half of the 1980s, after the large devaluation in 1982, the krona was pegged to a trade-weighted currency basket. The policy commitment to keep the fixed exchange rate was much stronger than in the 1970s, with the aim to curb expectations of future accommodations in the monetary policy. As it became evident in the early 1990s that Sweden would apply for membership in the EU, the ECU became the new anchor of the exchange rate policy in 1991. Under pressure from high levels of domestic inflation and a strong German mark, massive speculation against the krona took place and in November 1992 Sweden was forced to let the krona float. The immediate response was a depreciation of approximately 20-25 percent against most other currencies. Since then the Swedish krona has appreciated somewhat, but compared to most other currencies it is still below its 1992 value in the range of 10-25 percent.

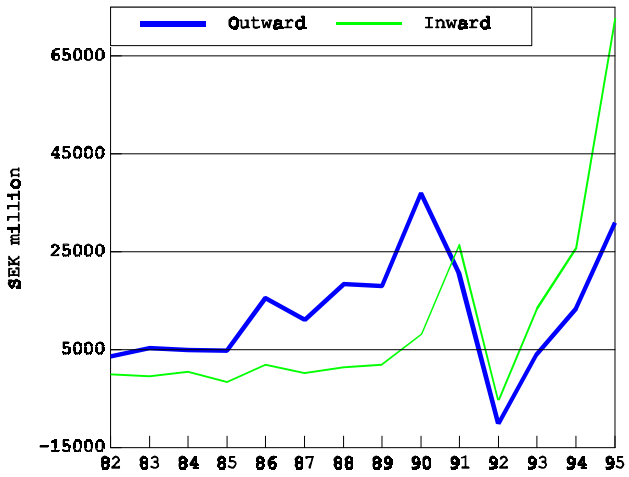
A third important policy change in Sweden was the restructuring of the tax system. The major ingredients were a reduction of statutory tax rates, comprising corporate well as individual tax rates, combined with reduced deduction possibilities. As a result, Sweden's corporatet tax rate now stands out as being very competitive in a European perspective.

Irrespective of the policy improvements outlined above, many of Sweden's economic problems remain. High levels of unemployment and a sagging domestic demand persist. Despite tight fiscal policies during the last years, budgetary problems and an increasing public debt - at present around 80 percent of GDP - severely restrict the scope for economic policy. With these caveats in mind, the overall effect of the

policy changes in the 1990s, i.e. the EU membership, the increased competitiveness stemming from the depreciation, and the shift in tax policies, should make Sweden a considerably more attractive host country for direct investment. The large Swedish firms should also find it relatively more profitable to expand production at home rather than abroad. Thus it seems reasonable to expect a drift towards increasing production in the domestic units by Swedish MNCs, starting after 1992.

Turning to the development of FDI since 1980, Figure 1 depicts the flows of inward and outward FDI according to the balance of payments statistics. Evidently, Swedish firms considerably stepped up their outward FDI in the middle of the 1980s

Figure 1. Outward and inward flows of FDI in the Swedish manufacturing sector, 1980-1995



Source: Riksbanken

and from then on FDI continued to grow up to 1990. This trend came to a halt in the beginning of the 1990s when outward FDI fell sharply for two years. Inward FDI followed a similar pattern with a one year lag. Thereafter both inward and outward FDI picked up again, but with a substantially changed relation between inward and outward FDI. Since 1992, inward flows have exceeded outward flows.

With regard to the stock of FDI, the Swedish federal bank (Riksbanken) regularly analyzes the balance between outward and inward assets. Table 1 shows the evolution with regard to stocks over the period 1986-1994. The increase in inward and

outward stocks from 1986 to 1994 are approximately of the same magnitude, somewhat over 300 percent, although the level of outward FDI is substantially higher. The timing of the change in outward and inward FDI differs, however, which corresponds to the picture that emerged in Figure 1. While the bulk of the increase in outward FDI took place before 1990, the opposite prevails for inward FDI. Between 1986 and 1990 the stock of inward investments increased by 42 percent, as compared to an increase of 145 percent in the period 1990-1994.

The shift in outward and inward FDI that occurred in the beginning of the 1990s was probably influenced by particularly two policy events: the huge depreciation of the krona in November 1992, and the application for membership in the European Union (EU) in 1991.

Table 1. The stock of outward Swedish FDI (O) and the stock of inward foreign FDI (I), 1986-1994

(Current billion, Swedish krona)

	1986		1988		1990		1992		1994	
	O	I	O	I	O	I	O	I	O	I
EU	42	14	85	23	155	27	215	49	255	92
US	36	8	32	9	41	7	49	11	58	16
Nordic	15	14	23	16	33	22	28	24	42	41
Other	17	5	35	13	53	15	44	13	87	26
Total	110	41	175	61	282	71	336	97	442	175

Source: Riksbanken

Note: FDI is defined as an acquisition of equity such that the investing firm can influence the affiliate's decision. If the investing firm's share of equity exceeds 10 percent, it is always registered as a FDI. The stock is defined as total equity after tax, taking into account the net debt relation between the parent company and affiliates.

2.2 International trends in FDI

Although foreign production, in terms of the aggregated stock of global inward FDI, slumped in the early 1990s, the long-term trend indicates that multinational activities

by firms will continue to increase in the future (UN 1995).

One indication of the importance of MNCs in the global economy is given by their role in international trade. The geographically dispersed units of MNCs are involved in an extensive exchange of goods, and intra-firm exports are estimated to amount to approximately one third of world trade. Another 30 percent of world trade emanates from exports by MNCs to non-affiliated firms. Hence, altogether about 65 percent of world trade is channelled through MNCs (UN 1995).

The developed countries dominate global FDI, both with regard to origin and destination, as shown in Table 2. In 1994 about 35 percent of inward FDI was targeted for developing countries while outward FDI originating in these countries was a modest 15 percent. These figures also contain wide differences between regions and countries. For example, China has been a major recipient of inward FDI in the last couple of years, and removing China from the group of developing countries would make the figures even smaller.

Table 2. Global FDI Inflows and Outflows, 1982-1994

(Billions of US dollars)

Year	Developed countries		Developing countries		Central and Eastern Europe		All countries	
	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows
1982-1986[1]	43	53	19	4	.02	.01	61	57
1987-1991[1]	142	183	31	12	.6	.02	174	195
1989	172	202	29	15	.3	.02	200	218
1990	176	226	35	17	.3	.04	211	243
1991	115	188	41	11	2.5	.04	158	199
1992	111	171	55	19	4.4	.02	170	191
1993	129	193	73	29	6.0	.08	208	222
1994[2]	135	189	84	33	6.3	.07	226	222

Source: UN 1995. [1] Annual average flows. [2] Based on preliminary estimates.

Table 3 illustrates the ratio of outward to inward stocks for a selected number of countries. A ratio that equals one implies that the stock of outward FDI is matched by an inward stock of equal size. As can be seen from the Table 3, Sweden has among

the highest ratios during the entire period and is only exceeded by Japan in 1992. This indicates that Sweden is one of the most outward oriented countries as far as FDI is concerned. This picture is reinforced by the fact that, in contrast to Japan, Sweden's foreign activities are not explained by current account surpluses that has been accumulated over the years.

Table 3. The Ratio of outward FDI stock to inward stock of FDI for a Selected Number of countries, 1981-1992

	1981	1985	1990	1992
Australia	.17	.27	.43	.37
Austria	.17	.31	.43	.64
Belgium/Lux	.83	.53	.79	.81
Canada	.44	.62	.69	.72
Denmark[1]	.29	.50	.80	.97
Finland	1.36	1.38	2.36	2.32
France	1.04	1.11	1.27	1.35
Germany	1.18	1.62	1.27	1.38
Italy	.78	.86	.97	1.09
Japan	.53	1.27	5.85	6.47
Netherlands	2.20	1.92	1.48	1.57
Norway	.35	.97	1.27	1.45
Spain	.24	.23	.23	.24
Sweden	1.68	2.60	4.24	3.56
Switzerland	2.53	2.12	2.13	2.27
UK	1.28	1.62	1.12	1.28
US	2.65	1.36	1.09	1.17

Source: UN 1994

[1] International Direct Investment Statistics Yearbook, 1994, OECD

To summarize, Sweden has undergone some major policy-changes, particularly during the 1990s, which should make Sweden a more attractive host country for FDI. An increase in inward FDI can also be observed since 1990. At the same time, the international trend points at increasing flows of FDI, with a tendency

towards a larger involvement by developing countries.

3. Foreign production by Swedish MNCs.[6]

This section is mainly devoted to the regional and sectoral distribution of foreign production, the mode by which Swedish MNCs enter foreign markets, and to measures of concentration in their main product markets. We also report how the firms assess the relative importance of the advantages of market proximity, as opposed to degree of economies of scale, in their locational decisions.

3.1 The geographical and sectoral distribution of MNC production

Two variables will be used to capture the geographical distribution of foreign production: the number of employees and affiliate production, where the latter is defined as total affiliate sales corrected for intra-firm deliveries from the parent company. Henceforth, when we refer to foreign production, we mean only affiliates where production is the dominating activity, i.e. sales affiliates are disregarded.

Table 4. Swedish and foreign share of MNCS employees and production 1965-1994 (percent)

	Employees		*Turnover*	
	Sweden	*Abroad*	*Sweden*	*Abroad*
1965	66.1	33.9	74.1	25.9
1970	N.A.	N.A.	72.9	27.1
1974	59.8	40.2	71.1	28.9
1978	57.6	42.4	64.6	35.4
1986	50.8	49.2	57.7	42.3
1990	39.4 (34.1)	60.6 (65.9)	48.6 (43.2)	51.4 (56.8)
1994	38.9	61.1	47.8	52.2

Source: IUI database
Note: Figures within parenthesis are percentages including Asea Brown Boveri in the sample.

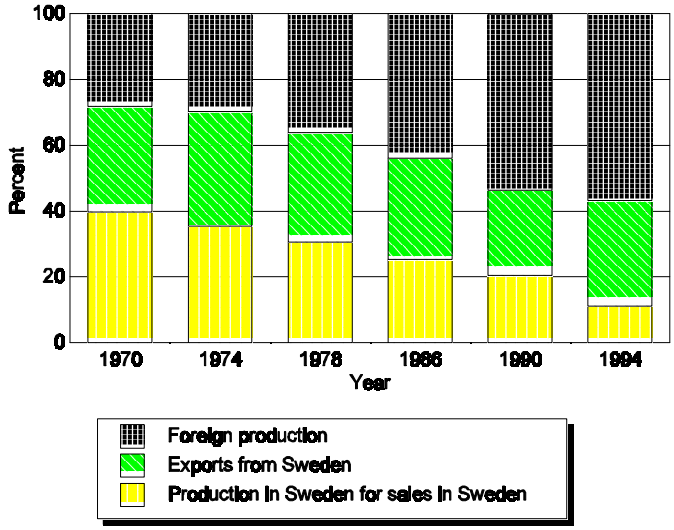
[5]In the forthcoming, figures for ABB are excluded for the years 1990 and 1994, if not mentioned otherwise. Note also that some of the figures will be influenced by exchange rate fluctuations. For a description of the data base and the questionnaire, see the appendix.

The allocation of Swedish MNCs' production on foreign and domestic units since 1965 is depicted in Table 4. According to Table 4, there has been a successive decline in the proportion of the Swedish MNCs' employees and turnover that relate to the Swedish parts. This decline appears to have been particularly large between 1986 and 1990, indicating that the plans to deepen the European integration may have had an effect on the Swedish MNCs. As illustrated in the table, the negative trend in the Swedish share of employment and turnover has continued in the 1990s.

By dividing the MNCs' total production into foreign production, domestic production for exports, and domestic production aimed for sale in the home country market, we get an overall picture of the MNCs dependence on foreign markets (Figure 2). The sum of affiliate production abroad and exports from Sweden has increased from about 60 percent of total sales in 1970 to approximately 85 percent in 1994. Even though the share of domestic production geared for exports increased between 1970 and 1994 (from 45 to 75 percent), exports from Swedish units as a share of the MNCs' total production diminished - despite continous devaluations - in the period between 1974 and 1990. It is only in the aftermath of the huge depreciation in 1992 that an increase in Swedish exports has been registered.This pattern is mirrored by a decline in home country production by Swedish MNCs from over 70 percent of total production in 1970, to roughly 45 percent in 1994. Between 1990 and 1994 the share of domestic production (exports plus domestic sales) has remained relatively constant due to the increase in exports from the domestic units.

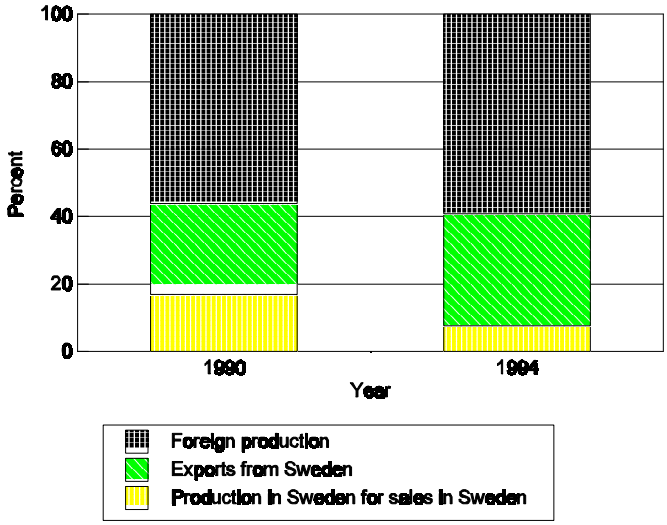
Figure 3 shows the corresponding distribution of the MNCs' production for the years 1990 and 1994; however, only firms participating in both surveys are included. For these firms, which constitute about 60 percent of the total population in 1994, the share of production located abroad increased from 56 to almost 60 percent. The share of production sold at the Swedish market displays a more pronounced decline, from 17 percent in 1990 to about 7.5 percent in 1994, while exports have risen. Consequently, firms already having multinational production in 1990 seem to have become even more internationalized by 1994.

Figure 2. Distribution of Swedish MNCs sales in Sweden and abroad, selected years 1970-1994 (percent)[1]



Source: IUI database. [1]Net of intra-firm transactions.

Figure 3. Distribution of foreign and domestic sales for Swedish MNCs included in the 1990 and 1994 surveys (percent)[1]



Source: IUI database. [1]Net of intra-firm transactions.

Thus, an unambiguous pattern of continued internationalization of Swedish

MNCs emerges, paired with a corresponding decrease in the share of domestic sales.

The Regional Distribution of Foreign Production by Swedish MNCs

As illustrated in Table 5 and Table 6, the regional distribution of foreign employees and foreign production, respectively, has been concentrated to OECD-Europe. The share in terms of foreign employees and production has remained well over 50 percent in the period 1965-1994. Since 1970 this share has decreased in a trendwise fashion, with the exception of 1990 when a considerable increase in the operations of Swedish MNCs in OECD-Europe took place. One likely reason for this peak is the uncertainty in that period surrounding Sweden's future relationship to the EU and the risk for firms of being exposed to discriminatory measures if Sweden were to choose an outsider strategy.

Table 5. The regional distribution of foreign employees of Swedish MNCs, percentage share, 1965-1994[1]

	1965	1970	1974	1978	1986	1990	1994
OECD Europe	72.1	70.3	66.6	66.4	55.4	58.7	53.5
Nafta[2]	13.4	10.6	10.7	12.3	28.0	29.2	31.3
Other OECD[3]	1.9	3.4	4.5	3.1	4.5	2.2	2.1
Eastern Europe	0	0	0	0	0	0	3.3
Asia[4]	7.7	7.2	7.4	2.6	3.0	3.2	4.5
Latin America[5]	4.9	8.5	10.7	15.6	9.1	6.8	5.3
	100	100	100	100	100	100	100

Source: IUI database. [1]Theses regions contain over 99 percent of foreign production by Swedish MNCs. [2] Including Mexico.[3] Including Japan. [4]Excluding Japan. [5] Excluding Mexico.

An opposite pattern is observed for the NAFTA-region, where Swedish MNCs have expanded their activities since the early 1970s. From hosting about 13 percent of employees in Swedish affiliates, the share went up to 31 percent in 1994. The other regions display a more irregular pattern, except for LatinAmerica where the presence of Swedish MNCs seems to have deteriorated continuously since the late

1970s. Moreover, the reforms in Eastern Europe are reflected in a marked increased presence by Swedish MNCs in that area during the 1990s.

Table 6. The regional distribution of production of Swedish MNCs, percentage share, 1965-1994[1]

	1965	1970	1974	1978	1986	1990	1994
OECD Europe	67.8	72.1	72.1	71.6	57.1	66.7	58.0
Nafta[2]	22.6	15.6	14.2	13.3	33.5	27.3	33.6
Other OECD[3]	1.2	2.7	4.4	4.0	3.4	2.1	1.9
Eastern Europe	0	0	0	0	0	0	1.0
Asia[4]	4.3	3.0	1.9	1.0	0.7	0.6	1.0
Latin America[5]	4.1	6.5	7.5	10.1	5.2	3.3	4.5
	100	100	100	100	100	100	100

Source: IUI database[1] Theses regions contain over 99 percent of foreign production by Swedish MNCs. [2] Including Mexico.[3] Including Japan. [4]Excluding Japan. [5] Excluding Mexico.

Confining the analysis to the dominant host region of FDI by Swedish MNCs, i.e. OECD-Europe, the development is pictured in Table 7 where OECD-Europe has been disaggregated into 5 different regions: EC 6 constitutes the 6 original countries in the European Community (Belgium, France, Germany, Italy, Luxembourg, and the Netherlands), EC 73 represents the extension of the original EC in the 1970s with the addition of Denmark, Ireland, and United Kingdom, EC 80 denotes the further expansion in the 1980s by incorporating Greece, Portugal and Spain, while EU 90 stands for the addition of Finland and Austria in the 1990s. More important than the latter two countries' de facto membership in 1995 is that the uncertainty concerning their future relationship with EU was removed already in the beginning of the 1990s. Finally, the EFTA-region is included. Note that each expansion of EC/EU-regions implies a corresponding decrease in the EFTA-area.

Measured in terms of number of employees, production within the traditional core EC-countries has diminished since the 1960s. In terms of local production, EC6 recived an increasing share up until the mid-1970s, followed by a

sharp decline in the mid-1980s. In the subseqeunt period, i.e. 1986 to 1990, the share of production in the EC6 and EC73 increased substantially. Thereafter, however, a downturn in production ocurred in both these regions. Hence, the share of foreign production in former EC has been characterized by considerable swings.

Table 7. The percentage distribution of employees (L) and production (P) in OECD-Europe, 1965-1994

	1965		1970		1974		1978		1986		1990		1994	
	L	P	L	P	L	P	L	P	L	P	L	P	L	P
EC 6	55.0	52.7	52.8	57.6	48.5	56.8	44.9	53.9	35.7	39.7	35.2	44.3	33.4	41.6
EC 73	-		-		9.7	8.0	12.1	10.0	8.9	8.9	13.7	12.5	10.6	9.4
EC 80	-		-		-		-		4.2	2.5	5.4	5.4	4.2	2.9
EU 2	-		-		-		-		-		-	-	2.8	2.2
EFTA	16.1	13.9	16.6	13.6	7.4	6.3	8.8	7.2	6.4	5.9	4.2	4.3	2.2	1.9

Source: IUI database

The distribution of foreign production by industry

Turning to the distribution of Swedish MNCs' foreign production by industry, it is evident that the engineering industry accounts for the overwhelming part.[7] Its dominance has decreased somewhat since the 1960s, from 75 percent of foreign employees in 1965 to 69 percent in 1994 (Table 8). The other notable change is the strong internationalization of the basic industries, although they still have most of their production in Sweden. The entire increase in foreign production by basic industries took place between 1986 and 1990, a period when the paper and pulp industry was involved in some very large acquisitions of foreign companies. The share of foreign employees in the chemical industry has declined somewhat since the 1970s, although a marked increase occurred between 1990 and 1994, while the category "other industries" displays a relatively stable share of approximately 12 percent of foreign employment of Swedish manufacturing firms.

[7]For definitions of industry classifications, see the appendix.

Table 8. Distribution of foreign employees by industry, 1965-1994

	1965	1970	1974	1978	1986	1990	1994
Basic	1.3	2.4	3.2	4.8	2.8	13.5	9.7
Chemicals	17.4	14.4	10.6	7.9	11.1	7.0	10.4
Engineering	74.8	71.8	74.8	75.6	71.3	68.2	68.4
Other	6.5	11.4	11.4	11.7	14.8	11.3	11.5
All industries	100	100	100	100	100	100	100

Source: IUI database

Table 9 shows foreign production broken down by region and industry. The share of the engineering industry's employees in OECD-Europe has diminished between 1974 and 1994, from 49 percent to 35 percent. This is parallelled by an increasing share in the NAFTA region, from about 7 percent to 19 percent in 1994. Asia, too, has received an increasing proportion of Swedish overseas production in the engineering industry. In the other regions, Swedish MNC presence is comparatively low.The increase in foreign production by basic industries is concentrated geographically to OECD-Europe, while the chemical industry has predominantly increased its share of production in the NAFTA region.

Hence, over time stability characterizes the regional distribution of foreign production by Swedish MNCs. Yet some changes have occurred, such as the increased share of foreign employees in the basic industries, and the increased share of production located in Eastern Europe.

Table 9. Distribution of foreign employees in Swedish MNCs by region and industry, 1974-1994

	OECD-Europe	Eastern Europe	Nafta	Asia	Other
1974					
Basic	2.6	0	0.5	0	0.1
Chemicals	3.5	0	0.5	4.6	2.0
Engineering	49	0	6.8	2.5	16.4
Other	11.3	0	0.1	0.1	0.1
1978					
Basic	4.1	0	0.6	0	0
Chemicals	4.2	0	1.0	0.6	2.1
Engineering	48.1	0	6.6	2.3	18.5
Other	10.1	0	1.1	0	0.4
1986					
Basic	2.1	0	0.6	0	0
Chemicals	4.3	0	2.2	2.2	2.4
Engineering	40.8	0	15.4	2.4	12.7
Other	10.9	0	12.4	0.8	0.7
1990					
Basic	12	0	1.9	0.3	0
Chemicals	3.6	0	1.2	0.3	1.9
Engineering	49.3	0	17.6	2.9	10.7
Other	8.3	0	1.9	1.4	0.3
1994					
Basic	7.9	0.5	0.6	0	0
Chemicals	5.9	0.2	2.6	1.2	1.1
Engineering	35.2	2.2	20.6	4.0	6.4
Other	7.9	4.0	1.6	0.6	0.4

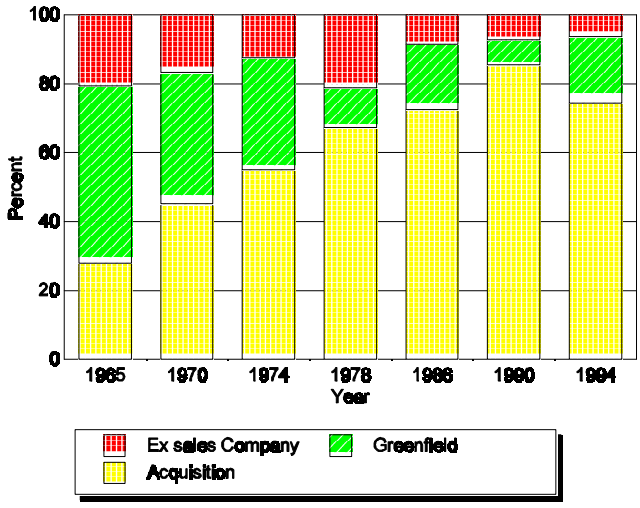
Source: IUI database.

Note: For each year the regional shares of employees summarize to 100 percent.

3.2 Mode of entry and the size distribution of Swedish MNCs

A firm can enter a foreign market by establishing a foreign production affiliate in different ways. It can invest in new production capacity, so-called greenfield investment, or acquire an existing company. If a firm already has a sales affiliate it can let this affiliate get involved in actual production. The choice between greenfield investment and acquisition of an existing company is usually taken to have important implications for the degree of competition, the direction and extent of technology transfers between the affiliate and the mother company and the extent of intra-firm trade. Greenfield investment tends to be considered as more favorable for the host country because it is less likely to reduce competition and may be more likely to involve technology transfers from the mother company to the affiliate and to generate positive employment effects.

Figure 4. Distribution of companies according to entry mode



Source: IUI database

As can be seen from Figure 4, there is a general trend towards acquisitions and away from greenfield investments, at least until 1990. In the 1960s and early 1970s, greenfield investment predominates over take-overs, whereas in the 1980s and early 1990s the opposite is the case. However, the trend towards take-overs seems to

come to a halt after 1990. Between 1990 and 1994, there is a slight decrease in the share of acquisitions and a slight increase in the share of greenfield investments.

Table 10. Distribution of companies according to mode of entry, by region, 1965-1994 (per cent)

		Greenfield	*Acquisition*	*Ex sales company*
1965	**Total**	**51.5**	**27.9**	**20.6**
	W. Europe	49.0	33.3	17.7
	N. America	60.9	17.4	21.7
	Asia	61.5	23.1	15.4
	Other	53.7	16.4	29.9
1970	**Total**	**38.0**	**45.3**	**16.8**
	W. Europe	37.3	48.0	14.7
	N. America	44.4	22.2	33.3
	Asia	66.7	0	33.3
	Other	34.8	47.8	17.4
1974	**Total**	**32.6**	**55.0**	**12.4**
	W. Europe	35.6	55.4	8.9
	N. America	28.6	57.1	14.3
	Asia	0	33.3	66.7
	Other	18.2	54.5	27.3
1978	**Total**	**11.6**	**67.1**	**21.2**
	W. Europe	9.3	73.2	17.5
	N. America	5.9	70.6	23.5
	Asia	42.9	42.9	14.3
	Other	16.8	48.0	36.0
1986	**Total**	**19.0**	**72.4**	**8.6**
	W. Europe	15.8	75.0	9.2
	N. America	23.8	66.7	9.5
	Asia	40.0	60.0	0
	Other	26.9	69.2	3.8
1990	**Total**	**7.3**	**85.4**	**7.3**
	W. Europe	5.8	88.4	5.8
	N. America	5.1	82.1	12.8
	Asia	41.7	33.3	25.0
	Other	6.2	93.8	0
1994	**Total**	**19.2**	**74.4**	**6.4**
	W. Europe	11.9	82.2	5.9
	E. Europe	40.0	56.7	3.3
	N. America	6.2	81.2	12.5
	Asia	50.0	41.7	8.3
	Other	15.4	76.9	7.7

Source: IUI database

Table 10 shows how entry modes differ between regions. The share of acquisitions is always higher in the developed countries, and the shift towards acquisitions is also stronger in these countries, as compared to the developing countries. It is also evident from Table 10 that the increase in the share of greenfield investments and the decrease in the share of acquisitions between 1990 and 1994 occurs in all regions except North America, where the shares of greenfield

investments and acquisitions remain quite constant. It can also be noted that a fairly large proportion of investments in Eastern Europe are greenfield (40 percent).

It was noted earlier that the relative importance of small MNCs in entering foreign markets seems to have increased since the late 1980's (e.g. Andersson *et al.* 1996, pp. 40-42). According to Table 11, the proportion of entry by MNCs with less than 500 employees in Sweden has increased considerably, from around 15 percent in 1965-1987 to 27 percent in 1987-1994. The share of new foreign affiliates that can be attributed to MNCs with more than 5000 employees in Sweden increased up to the mid 1980s (about 65 percent), but since then this share has declined (around 45 percent). It thus seems as if the shift towards an increased importance of small firms in Swedish outward FDI is upheld, and perhaps even reinforced when we extend the analysis to include the most recent time period.

Table 11. Distribution of new foreign affiliates by parent company size, 1965-1994 (per cent)

Number of employees in parent company	*1965-70*	*1971-4*	*1975-8*	*1979-86*	*1987-90*	*1991-4*
1 - 500	14	18	13	14	27	28
501 - 1,000	5	9	3	5	9	6
1,001 - 5,000	25	19	17	16	16	20
5,001 - 10,000	31	22	32	24	11	30
10,001 -	24	32	36	40	37	16
Total	100	100	100	100	100	100

Note: Columns may not add up to exactly 100 due to rounding off.
Source: IUI database

3.3 Proximity advantages and market structure

Recent theorizing about the determinants of foreign direct investment has largely focused on the relative importance of geographical proximity and economies of scale (see e.g. Markusen & Venables 1994, 1996). The idea is that factors such as transport costs, trade barriers, differences in language and culture can make it more costly to supply a certain market through exports than through direct production in this market.

On the other hand, there may be economies of scale, making it more cost efficient to concentrate production at a few locations. Whether a firm will serve a specific market through exports or local production will then depend on which of these forces predominate.

Several studies have concluded that, despite global reductions in tariff barriers, transportation costs, as well as trade costs, are still sizable. For instance, in Europe cabotage rules, border-crossing procedures, and other non-tariff barriers (standards etc.) have all contributed to preserve a rather protectionistic environment. The companies participating in the 1994 questionnaire were therefore asked to indicate the relative importance of scale economies and geographical proximity in their decision to locate production abroad. Table 12 reveals that the majority of firms, whether the whole population or more R&D-intensive industries are considered, regard economies of scale as equally or more important than geographical proximity.

Table 12. Ranking of the relative importance of geographical proximity and economies of scale by Swedish MNCs

	Proportion of companies indicating that the statement is correct, percent	
	Total population	*Engineering &Chemicals*
Geographical proximity definitely most important	5.5	4.8
Geographical proximity of major importance but economies of scale plays a role	18.8	18.1
Geographical proximity and economies of scale of equal importance	27.3	27.6
Economies of scale of major importance but geographical proximity plays a role	29.7	32.4
Economies of scale definitely most important	18.8	17.1
Total	100 percent	100 percent

Source: IUI database

This result is perhaps somewhat surprising, given that representatives of

companies with investments abroad often claim that foreign investments are driven by the importance of being in proximity to customers.

In the questionnaire the companies were also asked to state the combined market share of the four largest competitors - the so called C4-ratio - in their two largest divisions. Table 13 shows their response with regard to their main division. Even though the results must be interpreted with caution, it seems quite clear that for the majority of the companies, markets are not highly concentrated. Almost a third of the responding companies operate in markets where the four largest competitors' combined market share does not exceed 10 percent. Around two thirds of the companies operate in markets where it does not exceed 50 percent.

Table 13. Proportion of Swedish MNCs reporting different C4 measures

Market share in percent of the four largest competitors in main division	*Proportion of companies reporting C4 measures within the corresponding interval, percent*
0 - 10	29.3
11 - 20	16.8
21 - 30	6.3
31 - 50	14.0
51 - 75	20.3
76 - 100	13.3

Source: IUI database

4. Swedish MNCs and the pattern of trade

In this section trade patterns of Swedish MNCs are presented. We will examine the extent of intra-firm trade as well as the sectoral and geographical distributions of trade.

Table 14 clearly shows that OECD-Europe is the main recipient of exports from the domestic units of Swedish MNCs. In 1994 about 65 percent of total exports was destined for Europe, predominantly the EU-countries. The other large recipient

of Swedish exports was the NAFTA-countries (Canada, Mexico and USA), to which almost 15 percent is exported, and Asia (receiving about 10 percent of exports). It is also evident that MNCs in the engineering industry have the widest geographical spread for their exports, while the basic industry is strongly concentrated to OECD-Europe, absorbing more than 90 percent of its exports. The chemical industry, as well as other industries, rank somewhere between these two industries.

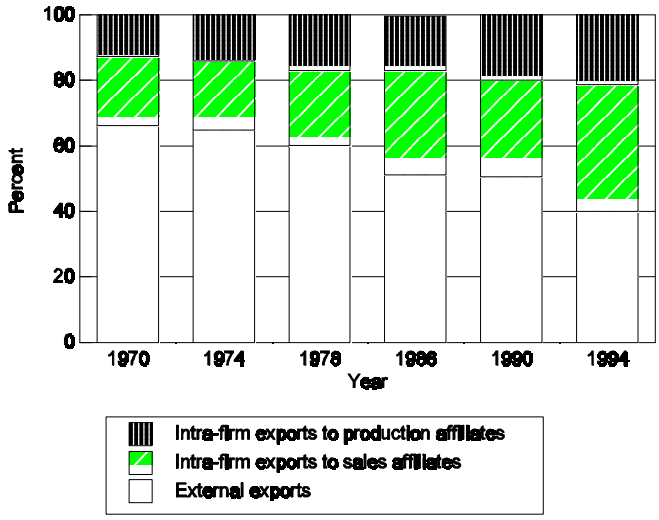
Table 14. Exports from parent companies of Swedish MNCs, by industry and region, 1994 (percent)

Region	*Engineering*	*Chemicals*	*Basic*	*Others*	*All Swedish MNCs*	*Total Swedish exports*
OECD-Europe	57.9	70.6	90.3	75.1	65.5	70
Nafta	19.2	12.7	3.1	14.3	15.6	9.6
Other OECD	3.1	3.2	0.4	0.6	2.6	1.6
Eastern Europe	3.5	2.1	2.1	3.9	3.1	3.7
ASIA	12.2	10.1	3.4	2.0	10.2	12
Latin America	2.0	0.4	0	0	1.3	1.7
Other	2.1	0.9	0.7	4.1	1.7	1.5
Total	100	100	100	100	100	100

Source: IUI database and Statistics Sweden.

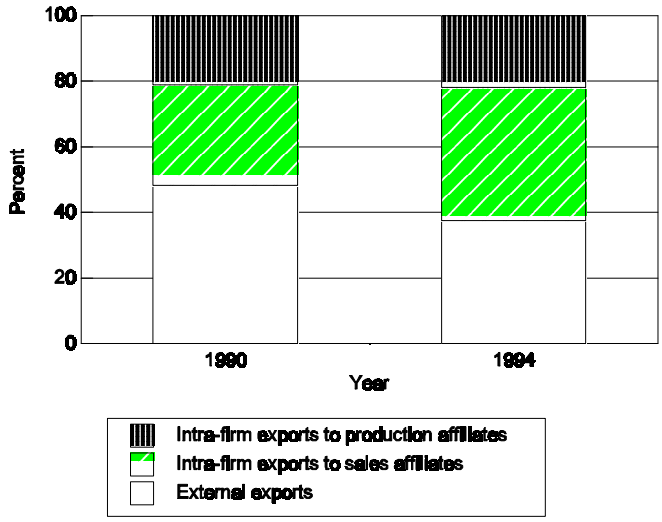
Figure 5 below shows the structure of exports from all parent companies in Sweden while Figure 6 depicts the same thing between 1990 and 1994 for those firms included in both surveys. The period 1970-1994 is characterized by increasing intra-firm trade.

Figure 5. Composition of exports from parent companies of Swedish MNCs, selected years 1970 and 1994, percent of parent exports.



Source: IUI database

Figure 6. Composition of exports from parent companies having foreign production in 1990 and 1994 (percent)



Source: IUI database

In the figures above, exports to sales affiliates show a particularly pronounced increase in 1978-1986, as well as in 1990-1994, two periods characterized by a major a fall in the value of the Swedish krona. But also the share of intra-firm exports to manufacturing affiliates has grown over time. Out of total exports, 34 percent of parent exports were shipped to affiliates in 1970. In 1994 the corresponding figure was 60 percent.

When we divide intra-firm trade by industry, we find that only the basic industries have experienced a decline in intra-firm exports to manufacturing foreign affiliates in 1994 as compared to 1970 (Table 15). However, the figures reveal considerable fluctuations between different years. There are also distinct differences between industries: the basic, chemical and machinery industries report an increase in the share of exports to foreign affiliates between 1990 and 1994, while the remaining four industries have experienced a decrease in the share of exports to foreign affiliates. The extent of intra-firm exports also differs substantially between the industries. In the chemical, metal and machinery industries, up to 40 percent of exports is directed to manufacturing affiliates abroad in 1994, while the other industries, particularly the basic industry, absorb much less of parent exports.

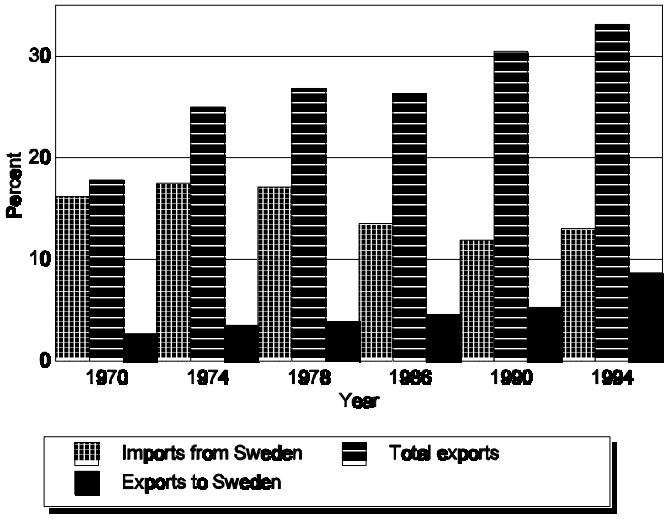
Table 15. Exports to foreign manufacturing affiliates as a share of total parent exports, by industry, 1970-1994 (percent).

Industry	1970	1974	1978	1986	1990	1994
Basic	12.9	10.9	14.4	7.3	5.3	8.4
Chemicals	15.7	18.4	16.0	9.5	14.8	27.3
Engineering	14.6	18.4	20.8	20.3	29.8	23.9
- Metal products	10.7	10.3	13.9	31.8	46.1	40.2
- Machinery	23.5	20.6	25.5	26.2	22.3	28.4
- Electronics	18.8	24.0	15.2	18.1	32.0	21.5
- Transport	7.8	13.9	23.6	18.4	26.8	21.9
Total	12.7	14.0	16.9	16.5	20.1	20.8

Source: IUI database

Figure 7 shows that the share of intra-firm imports by foreign affiliates from home country units fell from around 17 percent of their turnover in 1974, to about 12 percent in 1990. Between 1990 and 1994 this trend reversed and intra-firm imports by foreign affiliates increased. Figure 7 also reveals how the export intensity, i.e. exports as a percentage of total sales, of foreign affiliates has increased throughout the entire period. The overall export intensity has almost doubled between 1974 and 1994 (from 19 percent of total sales to 33.2 percent). Note also the strong increase of exports from foreign affiliates back to Sweden in the latest period of observation (from 5.3 percent in 1990 to 9.2 percent in 1994).

Figure 7. Exports and intra-firm trade by manufacturing foreign affiliates in relation to the affiliates total sales, 1970-1994 (percent)



Source: IUI database

Even though intra-firm trade is less sensitive to alterations in exchange rates, this development is somewhat surprising considering the large depreciation of the Swedish krona. It indicates that integration among the different units in the Swedish MNCs is substantial, implying that increased exports from the Swedish located units

also boost imports from their foreign units.[8]

5. R&D and Information Technology (IT) in Swedish MNCs

In this section we outline the importance of R&D and information technology (IT) in Swedish MNC´s and examine whether any distinct trends can be detected between 1965 and 1994.

R&D in Swedish MNCs

Table 16 shows how R&D-expenditures are divided among different industries in the Swedish manufacturing sector. The share of R&D-expenditures is also related to the respective industry's share of employment. As evident from Table 16, R&D-expenditures are concentrated to the chemistry-, electronics- and transport industries. These industries account for almost 90 percent of industrial R&D in Swedish MNCs, while the corresponding employment share is about 58 percent.

Over time Swedish MNCs seem to have allotted an increasing share of their expenditures to R&D (Table 17). As may be expected, the sectors where a growing portion of availablet resources are allocated to R&D include the chemical and the engineering industries. The overall increase in R&D-intensity, in fact, stems exclusively from these groups, whereas the share of R&D spending in basic industries and in other industries (e.g. food industry and textiles & clothing) does not appear to have altered much over the time period 1965-94. The most striking pattern is the strong increase of R&D-expenditures in the transport equipment sector, particularly

[8]This may seem to contradict the pattern of intra-firm exports reported in Figure 5, i.e. intra-firm exports from the Swedish units increased between 1970 and 1994 while imports from foreign manufacturing affiliates diminished in the same period. Note however that imports in Figure 7 refer to manufacturing affiliates, while exports have primarily increased to sales affiliates. It is also influenced by the fact that only shares are reported, not absolute figures.

marked from the late 1970´s onwards, which probably reflects the increasing importance of R&D as a competitive tool in that industry.

Table 16. Total R&D and employment by industry, 1994 (percent)

	R&D	**Employment**
Basic	3.3	14.2
Chemistry	23.1	10.1
Metal Products	2.5	7.6
Machinery	4.4	12.1
Electronics	46.3	33.9
Transport	19.2	13.9
Other	1.2	8.1
All industries	100	100

Source: IUI database

Table 17. R&D-expenditures as a percentage share of total turnover, 1965-1994

	1965	1970	1974	1978	1986	1990	1994
Basic	1.4	1.2	1.1	0.7	0.7	0.9	0.9
Chemicals	3.9	4.7	3.7	4.6	6.7	6.8	9.4
Metal Products	1.8	1.4	1.7	3.1	2.5	2.4	2.0
Machinery	2.5	2.5	1.9	2.4	2.7	2.6	2.3
Electronics	5.2	6.5	4.1	3.8	4.5	4.6	8.1
Transport equipment	1.1	1.3	2.7	2.4	5.9	8.4	4.2
Other industries	0.9	1.5	2.8	1.2	0.9	0.5	0.7
All industries	2.0	2.1	2.1	2.2	3.9	3.9	4.7

Source: IUI database

Regarding the distribution of the share of R&D undertaken domestically and abroad (Table 18), the tendency seems to be that Swedish MNCs allocate a growing proportion of their R&D outside of Sweden, though we see a threshold in this trend between the 1970s and the 1980s. Yet the fluctuations within some industries have been considerable.

The role played by the various members of the engineering industry is once again noteworthy, with the machinery industry undertaking almost two thirds of their R&D abroad in the 1990´s. A closer look reveals that in 1994 51 percent of all R&D in this industry took place in the European Union compared to 39 percent in 1990. For Swedish industry considered as a group, too, there was a slight increase in the EU share of total R&D - from 11 to 13 percent - between 1990 and 1994.

Table 18. R&D-expenditure abroad as percentage share of total R&D-expenditure, 1965-1994

	1965	1970	1974	1978	1986	1990	1994
Basic	1.6	0.1	9.8	3.5	2.1	25.0	24.2
Chemicals	8.3	9.7	13.3	12.7	13.2	17.0	28.7
Metal products	2.1	1.3	0	9.4	15.8	21.4	32.3
Machinery	6.6	13.8	34.5	37.4	45.3	55.7	64.3
Electronics	19.5	16.2	15.2	9.9	21.1	25.5	25.2
Transport equipment	0	0.3	8.9	3.8	3.6	5.6	8.1
Other industries	23.8	11.1	12.8	17.4	27.0	38.6	37.1
All industries	9.7	9.3	15.1	14.0	13.6	18.6	24.7

Source: IUI database

A striking change in the distribution of R&D between domestic and foreign units is reported for the basic industry. Between 1986 and 1990, a 10-fold increase in the share of foreign R&D occurred. The share remained constant between 1990 and 1994. Most likely this is explained by some of the major acquisitions that the basic industry has been involved in, in conjunction with a relatively modest level of R&D to begin with.

We go on to study what type of R&D the companies actually choose to invest in, based on the 1994 survey. One approach may be to divide R&D-spending into *product*-related and *process*-related R&D. From that perspective, the obvious result is that the vast majority of resources - some 88 percent - is being put to work in product related R&D. While this population mean correctly reflects the situation in engineering industries and in chemicals, the picture is different in other industries. For instance, more process-oriented industries, such as the basic industry, show a pattern approaching a fifty-fifty relationship between the two R&D-categories. Furthermore, it is worth noting that the food industry stands alone as the only industry that allocates the greater part of its R&D effort to process related improvements.

Finally, it still seems to be the case that the R&D undertaken is a concern of the individual company. On average, a modest 9 percent of the Swedish R&D resources in 1994 was poured into projects where more than one company was involved.

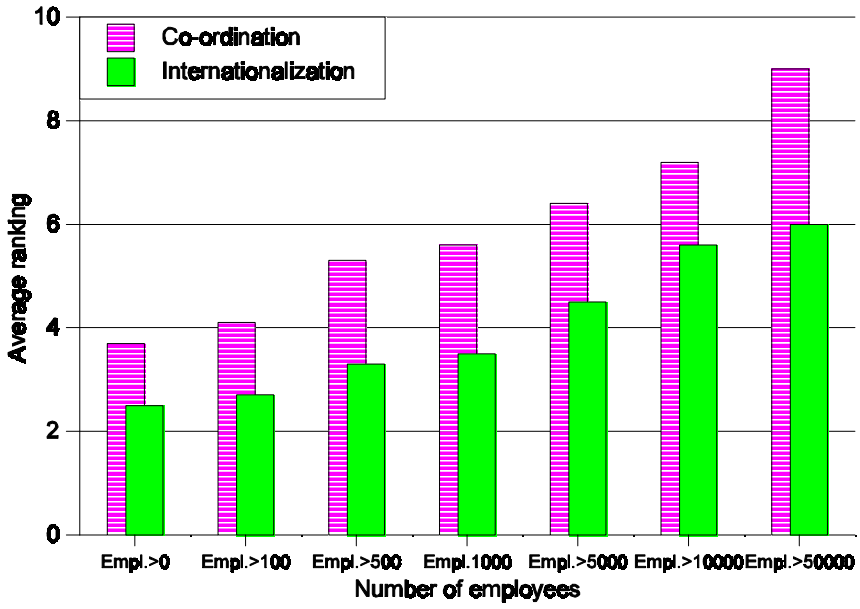
The role of information technology (IT) in Swedish MNCs

The qualitative judgement of the importance of IT for Swedish MNCs of different size is illustrated in Figure 8. MNCs were asked to rank the importance of IT in coordinating geographically dispersed activities, and its role in the firm's internationalization, on a scale from 1 to 10, 10 being most important. As shown in Figure 8, IT is reported to be more important, the larger the organization, measured by total employees.

We then examine whether the subjective valuation of companies could be

empirically verified by studying the relation between IT-expenditures (defined as IT-expenditures divided by turnover) and degree of internationalization (measured as the share of foreign employees) on one hand, and between IT-expenditures and R&D intensity, on the other. In the former case the underlying hypothesis is that IT would facilitate the monitoring and coordination of geographically spread production. A positive relationship in the latter case reflects that R&D-intensive industries may be more apt in realizing the benefits of IT use, and also more inclined to transfer knowledge between units. However, in no case could a statistically significant relationship between these variables and IT-expenditures be found. The subjective valuation of the importance of IT may therefore more reflect future, but until now unrealized, benefits of IT.

Figure 8. The MNCs' qualitative valuation of IT on coordination and geographical spread of production, by firm size, 1994



Source: IUI database

6. Concluding comments and summary

The internationalization of Swedish firms constitutes one of IUI's core research areas. Since 1965 detailed information on the entire population of Swedish manufacturing firms has been collected on six different occasions. The results from IUI's most recent (1994) questionnaire to Swedish MNCs suggest that the trend towards greater internationalization continues.

In the 1980s the deepening of the European integration appear to have fostered a substantial increase of foreign production in the member countries of the European union. In 1994, however, this trend was over and the share of foreign production returned to the level of the early 1980s. The opening up of the former communist countries has had a noticeable, but modest, effect on the location of foreign operations by Swedish MNCs. South-East Asia is also attracting a large share of Swedish affiliate production, as are the NAFTA-countries.

The engineering industriy dominate when it comes to the share of foreign production. Yet, basic industries, traditionally having the major part of their production in Sweden, display the most rapid expansion in foreign production since 1986. In absolute terms, the share accounted for by the basic industry is less impressive. A similar pattern emerges for the distribution of R&D; however, the share of R&D undertaken abroad has increased much more rapidly than production between 1990 and 1994. The increase in the share of foreign R&D is about two times larger than the increase in the share of foreign production by Swedish MNCs. A somewhat related matter concerns the firms' use of information technology, frequently claimed to facilitate the internationalization of production. Even though firms report that this is indeed the case, and increasingly so with the size of the firm, this subjective evaluation of the importance of IT could not be verified empirically. Neither the degree of internationalization, nor the R&D-intensity of firms, was positively correlated with IT-expenditures.

The intensified integration of Swedish and foreign production units is reflected in the increase in intra-firm trade. Between 1990 and 1994 the former trend

of decreasing imports by affiliates from parent companies was reversed, and imports increased by almost 14 percent. Similarly, exports from the foreign affiliates back to the home country units as a share of affiliate total sales almost doubled in that period.

To conclude, despite Sweden's full membership in the European Union, the changes in the Swedish tax system that benefit firms, and the large depreciation of the Swedish krona, the share of foreign production has actually increased in the 1990s. To some extent this is an expected process, particularly where market access requires proximity, which seems to be the case for several of the emerging markets in Southeast Asia, East Europe and Latin America.

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APPENDIX

The database

The database comprises all manufacturing Swedish MNCs with a number of employees exceeding 50, and that have established foreign affiliates. The questionnaire consists of two parts where one is answered by the parent company and the other by each foreign affiliate involved in manufacturing production. Information on sale companies is more limited and provided by the parent company. All values are expressed in Swedish krona, and the firms themselves have converted the values of their foreign activities by implementing the exchange rate at the respective year of the questionnaire. Consequently, large swings in exchange rates will affect the values of different variables. At the level of aggregation presented here, this is unlikely to seriously convey or distort information. Still, when possible, we will use real variables, such as employment figures, or percentage shares.

At present (May 1996) the answer rate is about 75 percent for the 1994 questionnaire. The total number of firms that will be covered in the 1994 survey is expected to be approximately 170 parent companies and 800 foreign affiliates. Most of the large Swedish corporations are incorporated in the most recent questionnaire, and hence no major change in the results obtained at this stage are expected as the number of firms increase.[9] Yet it should be stressed that the results presented here are preliminary and should be interpreted with caution.

With regard to the classification on industries and regions, the following groups have been used:

Asia: India, Pakistan, Burma, Sri Lanka (Ceylon), Thailand, Philippines, Malaysia, Singapore, Japan, Lebanon, China, Indonesia, Hong Kong, Democratic People's Republic of Korea, Republic of Korea, Taiwan, Other Asia....

EU: Belgium, Denmark, France, Germany (excl. former East Germany), Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, and United Kingdom.

EFTA: Austria, Finland, Iceland, Norway, Switzerland, Sweden (and Denmark, Ireland, and United Kingdom before 1973).

Eastern Europe: Former Soviet Union, the Baltic States, East Germany, Hungary, the Czech Republic, Poland

Nafta: Canada, Mexico, United States

Latin America: Argentina, Brazil, Chile

OECD-Europe: EU, EFTA (excl. former East Germany), Turkey, Cyprus and Malta.

Other OECD: Australia, Japan, New Zealand,

The following industry definitions have been made:

[9]The large Swedish firms not included are Assi-Domän and AGA. ABB is not included in the figures for 1990 and 1994, while Asea are contained in the figures preceding 1990.

Basic: Paper and Pulp industries; Iron and Steel industries

Chemicals: Chemical plastic and rubber industries

Engineering: Fabricated metal products industry; Machinery industry; Electronics and electrical machinery industry; Transport equipment industry; Ship and boat-building industry

Other: Food, beverages and tobacco industries; Textile, wearing apparel and leather industries; Paper products and printing industries; Wood and wood products industry; Non metallic mineral products industry, except products of petroleum and coal; Industries for measuring and controlling equipment, photographic and optical goods

The questionnaire

FOREIGN OPERATIONS BY SWEDISH MULTINATIONAL ENTERPRISES 1994

GUIDELINE FOR THE QUESTIONNAIRE

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The questionnaires should be returned before 28 April 1995 to the Industrial Institute for Economic and Social Research.

I. Which companies are to answer the questionnaire?

The investigation comprise all Swedish manufacturing enterprises having foreign affiliates in 1994.

II. The purpose of the investigation

This questionnaire is a follow up of earlier surveys conducted by the Institute in 1965, 1970, 1974, 1978, 1986 and 1990. The purpose is to investigate the extent and direction of Swedish companies's foreign operations. The questionnaire is designed in the same way as earlier questionnaire in order to facilitate comparisons over time.

III. Definitions

A Swedish company is defined as a company registered in Sweden and not being an affiliate to a foreign company. In addition its main activity shall be within manufacturing.

Subsidiaries are defined as companies in which the parent company holds directly, or jointly with other subsidiaries, more than 50% of the voting rights for all of the shares in the subsidiary. Other companies defined as subsidiaries are those in which the parent company, by virtue of its shareholdings or agreements, has a controlling interest and receives a significant portion of the company's income. Refer to chapter 1, § 2 of the Swedish Companies Act. In the consolidated statements, companies in which the parent company holds a "practical majority" at general meetings are normally not reported as subsidiaries. A "practical majority" is defined as holdings that carry entitlement to less than 50 percent of the voting rights but which in practice provide the parent company with controlling influence, as the remaining shares are spread among many other shareholders.

Producing companies are defined as companies performing some kind of production of goods such as extraction, manufacturing or assembly. Producing companies are also those in which production of goods is only a minor part of their overall activity.

Sales companies are those which exclusively are dealing with sales, possibly combined with installation and service activities. Sales activities should predominantly involve goods produced by belonging to the same group.

Other operational companies are defined as companies who is neither producing nor selling according to the definitions above (e.g. finance, service etc).

The Swedish company group or **the Swedish part of the company group** consists of the parent company and subsidiaries located in Sweden.

Foreign subsidiaries or **the foreign part of the group** consists of companies located abroad.

Subsidiaries located in the European Union (EU) constitute **the EU part of the group** The EU contains the following countries;

Belgium	Germany	Greece
France	Great Britain	Denmark
Italy	Spain	Ireland
Netherlands	Portugal	Luxembourg

Please note: Sweden, Austria, and Finland did not belong to the EU in 1994.

IV. The disposition of the questionnaire

The questionnaire is sent to the parent company of the group who also answers for directly and indirectly owned foreign affiliates.

The questionnaire contains two formulae. **Form A** is to be returned in one copy and concern information on the company group in Sweden and its interest abroad. Companies which have producing affiliates abroad are asked to answer **form B** as well. For each and everyone of the producing foreign affiliates, one copy of form B is to be filled in. More copies of form B can be obtained from the IUI.

Please also enclose a copy of the **Annual Report 1994** for the company group. Send the forms and the Annual Report in the enclosed postage free envelope named "svarskuvert".

V. Rate of exchange

All figures are to be expressed in Swedish crowns after conversion according to the rates of exchange in the consolidated financial statements of 1994.

VI. Accounting year

All questions in the questionnaire concern the calendar year 1994. Items on the balance sheet should refer to December the 31st. Companies with broken financial year should leave information for the accounting year which most closely coincide with the calendar year. If your accounting year covers the period 1st of July to the 30th of June, then please forward the figures for the accounting year 1993/94. If the company has a broken accounting year, or does not cover 12 months, then please mention this in the questionnaire.

VII. Precision in the answers

If you have difficulties in gathering exact information, please make reasonable estimates. Try to make the estimates comparable between different affiliates and countries. If the information provided is highly uncertain, please indicate so under "additional information" in the A- and B formulas.

FORM A
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ACTIVITIES OF SWEDISH MULTINATIONAL ENTERPRISES ABROAD 1994

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The forms should be returned before 28 April 1994 to the Industrial Institute for Economic and Social Research.
NB Please send a copy of your Group Annual Report for 1994.

Form A: Details of the company/group in Sweden and its interests abroad.
Please read the instructions before filling in the questionnaire.

SECTION I

1. Name and address of the company/parent company: .... Company reg. No: ..... Has the company changed its name since 1990? If so, please state the former name here:		IUI code (to be filled in by IUI)
2. Contact person: ..... Tel: ..... ext: ..... Fax:		
3. The main sector to which the Swedish company/companies in the group belong(s). Give the sector code as defined in instructions VIII:1. NB One code only.	Code	

4. List below the industrial enterprises situated in **Sweden** with at least fifty employees which joined/left the group in the period 1990-1994, together with other details of these enterprises.

See instructions III and VIII:1

Company name	Sector (acc. to code in VIII:1)	Year joined	Year left	Number of employees at the time of acquisition/divestment

Continue on a separate sheet if the table is not large enough.

	Number 1994
5. The number of **production affiliates** abroad. See instructions III. For each such affiliate, one form B should be sent in.	

	Worldwide	**of which** in Sweden	**of which** in EU countries
6. Total number of group employees in 1994. Average for the year. NB Sweden, Austria, and Finland did not belong to the EU in 1994.			

7. Number of employees in **sales affiliates** abroad.

See instructions III. Add up the employees of sales affiliates and specify by country.

Country	IUI code (to be filled in by IUI)	Number of employees 1994

Continue on a separate sheet if the table is not large enough.

8. Details of **other operating affiliates** abroad.

See instructions III and VIII:2

Country	IUI code (to be filled in by IUI)	Type of business by code in VIII:2	Number of employees 1994

Continue on a separate sheet if the table is not large enough.

	MSEK 1994
9. External revenues of the **entire** group. Invoiced sales plus other operating revenue. All sales within the group should be eliminated.	
10. External revenue of the Swedish part of the group. External revenues in Sweden plus total invoiced exports. Total invoiced exports is defined as external exports plus sales to foreign affiliates. Exports should be valued FOB.	
11. (a) Total invoiced exports of the Swedish part of the group See definition in question 10.	
of which (b) sales to foreign affiliates.	
12. External revenues outside Sweden of the **entire** group. NB Item 12 = items 9 - 10 + 11a	

13. Additional information.

SECTION II. NB Questions 14-36 should only be answered by groups with production affiliates abroad.

14. Allocate the details given in 9 above among the group's products/product lines (maximum of ten). State in percentages.

In case of difficulty, first make a rough division of the group's products/product lines (maximum of 10) and then give reasonable estimates in the table. Do not give details of the names of divisions/business areas since this information is asked for in question 33. If you use ISIC codes to classify your products/product lines, please give these codes instead of the names of products/product lines.

Products/product lines (or ISIC codes)	IUI code (to be filled in by IUI)	Proportion of total group revenues (question 9) %
		Total 100 %

15. Allocate the information given in 12 (external revenues outside Sweden of the **entire** group) and 11a (total exports of the Swedish part of the group) among countries/country regions. The **figures for revenue** relate to the group's total external sales in each country and should include imports to the country and exclude exports from the country. Sales between companies in the group should be eliminated. The **figures for exports** relate to total exports from Sweden, i.e. both sales to group companies in the country and other exports to the country in question.

Countries/country regions	IUI code (to be filled in by IUI)	External revenues abroad (as in 12) MSEK 1994	Exports from Sweden (as in 11a) MSEK 1994
Belgium			
France			
Italy			
The Netherlands			
Germany (incl. the former East Germany)			
The UK			
Ireland			
Spain			
Portugal			
Greece			
Denmark			
Norway			
Finland			
Switzerland			
Austria			
Rest of Western Europe			
Russia and former Soviet Union Republics (excl. the Baltic states)			
The Baltic states (Estonia, Latvia, Lithuania)			
Poland			
Hungary			
Rest of Eastern Europe (excl. the former East Germany)			
USA			
Canada			
Latin America			
of which Argentina			
Brazil			
Mexico			
Africa			
of which South Africa			
Asia			
of which Japan			
China			
ASEAN countries (see instructions VIII:6)			
Total Should equal the replies to questions 12 and 11a.		(= 12)	(= 11a)

	MSEK 1994
16. (a) Total revenues of the **Group** from licenses, patents, royalties, know-how and management fees Including contributions to cover the costs of R&D and central administration. Excluding payments between Swedish companies in the group. Make reasonable estimates.	
(b) Total revenues of the **Swedish** part of the group from licenses, patents, royalties, know-how and management fees	
of which (c) income from foreign affiliates.	
(d) income from other foreign companies.	
17. (a) Expenditure of the **entire** group on licenses, patents, royalties and know-how. Excluding payments between companies in the group. Make reasonable estimates.	
of which (b) payments to countries other than Sweden.	

Answer questions 18-22 for **the group as a whole** and in relation to how much of this total amount concerns **Sweden** and **EU countries**.	MSEK 1994		
	The group as a whole	**of which** in Sweden	**of which** in EU countries
18. (a) Capital expenditure by the Group Relates to gross investments in machinery, equipment and buildings and should include the initial values of machinery, equipment and buildings for companies acquired in 1994. Acquired companies refer to companies in which the group has acquired at least 50 % of the share capital.			
of which (b) initial values of **machinery, equipment and buildings** for companies acquired in 1994.			
19. (a) Group expenditure on marketing. Relates to group total expenditure on marketing department, purchasing of marketing services from external supplier and expenses for advertising. Make reasonable estimates		XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX	XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX
of Which (b) Advertising		XXXXXXXX XXXXXXXX	XXXXXXXX XXXXXXXX

20. Group expenditure on research and development (R&D). Excluding payments between companies in the group. R&D expenditure refers to both current expenses and depreciation on capital equipment for R&D. Both R&D carried out in-house and R&D commissioned by the affiliate from a third party should be included. In the Sweden and EU columns, state the proportion of total R&D carried out in Sweden and in EU countries. (As defined by Statistics Sweden, see instructions VIII:3.)			

A:8

21. (a) Did the Company Group participate in any R&D co-operation(s) with companies outside the Group in 1994? Includes formal projects such as Joint Ventures as well as informal projects	Yes	No
(b) If Yes, make a reasonable estimate of how large share of total Group R&D expenditures (question 20) that was due to this co-operation. Percent.	%	

22. Please give reasonable estimates of the share of total group R&D costs which is due to:	
Product related (question 20) R&D New products or improvements of existing products.	%
Process related R&D New or improvements of existing manufacturing processes.	%
	Sum 100 %

Answer questions 23, 27-29 and 31 for **the group as a whole** and in relation to how much of this total amount concerns the **Swedish** part of the group and **EU affiliates**. The other questions on this page should only be answered for the **group as a whole**.	MSEK 1994		
	Group as a whole	**of which** in the Swedish part of the group	**of which** in EU group affiliates
23. The value of fixed assets. Book value (planned residual value) Relates to machinery, equipment and buildings.			
24. Total liabilities (excl. untaxed reserves)		XXXXXXXXX	XXXXXXXXX
25. Total equity		XXXXXXXXX	XXXXXXXXX
26. Total assets (book value)		XXXXXXXXX	XXXXXXXXX

27. Operating income before depreciation			
28. Depreciation according to plan			
29. Total interest expense		XXXXXXXXX	XXXXXXXX

30. Income after financial income and expense		XXXXXXXXX	XXXXXXXX

31. Total expenditure on wages and salaries (incl. social costs). See instructions VIII:4.			

32. Please divide the total workforce and Swedish workforce (question 6) into the following 2 categories. Make reasonable estimates in percent.

	Total workforce	Swedish workforce
Blue collar workers	%	%
White collar workers	%	%
	Sum 100 %	Sum 100 %

33. Allocate the information in the table below among the group's five largest divisions/business areas in terms of revenue **and** a residual item for other divisions/business areas (where you have more than five divisions) and one item for operations common to the group (i.e. operations which fall otside the divisions, e.g. head office, group management, holding company, real estate management and financing). State the largest division at the first row (Div 1), the second largest on the next row (Div 2) etc. The figures to be divided refer to the total group.
Div 1 + 2 + 3 + 4 + 5 +residual item = 100 %. In case you have less than 5 divisions, leave the squares empty.
Make reasonable estimates, in percent.

	The name of the division/business areas?	Share of Group total employee (question 6)	Share of Group total turnover (question 9)
Div 1		%	%
Div 2		%	%
Div 3		%	%
Div 4		%	%
Div 5		%	%
Residual item for other divisions	XXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXX	%	%
Total	XXXXXXXXXXXXXXXXXXXXXXX	100 %	100 %

Continuation of question 33. NB Same divisions as above.

	Share of group expenditures on R&D (question 20)	Share of group book value of fixed assets (question 23)	Share of group operating income before depreciation (question 27)	Share of group Total expenditure on wages and salaries (question 31)
Div 1				
Div 2				
Div 3				
Div 4				
Div 5				
Residual item for other divisions				
Total	100 %	100 %	100 %	100 %

A:10

34. Make reasonable estimates of the total worldmarket share of the **four** largest manufacturers in the markets where your **two** largest divisions/business areas operates. (the two largest divisions in terms of turnover in question 33). NB! If you yourself are one of the four largest manufacturers, your market share must be included in their sum. Also write down the market share of the largest two divisions of your own group (irrespective of the size compared to the four largest).

Please make reasonable estimates based on the main sector classification/products of the division(s).

	World market share 1994		Is your division(s) one of the four largest manufacturers?	
	The sum of the four largest manufacturers in the world	Your division(s) share	Yes	No
Market 1: (in which Div 1 is operating)	%	%		
Market 2: (in which Div 2 is operating)	%	%		

35. How important is **price** relative to **product performance** as a competitive tool for the products which are manufactured by your two largest divisions (according to question 33)?

By product performance we consider technical performance,quality, design, etc.

Make reasonable estimates and mark a cross in the adequate square.

	Price definitely most important	Price most important but product performance also matters	Price and product performance are equally important	Product performance most important but price also matters	product performance definitely most important
Division 1:s products					
Division 2:s products					

36. How important is **physical proximity of production to foreign customer** relative **to economies of scale in the production** for the products manufactured by your two largest divisions (question 33)?

Make reasonable estimates and mark a cross in the adequate square.

	Physical proximity definitely most important	Physical proximity most important but economies of scale also matters	Physical proximity and economies of scales are equally important	economies of scale most important but proximity also matters	economies of scale definitely most important
Division 1:s products					
Division 2:s products					

FORM B
CONFIDENTIAL

ACTIVITIES OF SWEDISH MULTINATIONAL ENTERPRISES ABROAD 1994

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The forms should be returned before 28 April 1995 to the Industrial Institute for Economic and Social Research.

Form B: Details of the production affiliate abroad.

Please read the instructions before filling in the questionnaire.

	IUI code (to be filled in by IUI)
1. Name of the affiliate:	
Country:	
The affiliate mainly belongs to the following division/business area: .... Use the same names as in question 33 of form A.	
Parent company of the group:	
2. (a) Since what year has the affiliate been a production company of the group?	
(b) Was the affiliate a sales company of the group before the year mentioned above? yes .... no	
(c) Did the affiliate operate as a production company of another group before the year mentioned? yes .... no	
	MSEK 1994
3. (a) Total invoiced sales Sales should be stated net, i.e. after deductions for revenue tax, discounts and returns.	
of which (b) goods made or assembled by the affiliate. Make a reasonable assessment. The difference between 3a and 3b is made up of goods which are resold only, without being processed by the affiliate.	

	MSEK 1994
4. (a) Total invoiced exports of 3 (a) Including exports to other companies in the group. Make reasonable estimates.	
of which (b) exports to Sweden.	
(c) exports to Swedish companies in the group.	

	MSEK 1994
5. (a) Imports of goods from the Swedish companies in the group Make reasonable estimates.	
of which (b) goods for resale with no processing by the affiliate.	
(c) goods for processing by the affiliate.	

6. Make-up of the affiliate's production as in 3 (b) above. State the principal products/product lines made by the affiliate, together with the proportion of production held by each.

See question 14 of form A. If possible, use the same names of products/product lines as in question A:14. Give ISIC/SNI-92 codes if you used these codes in question A:14 instead of the names of products/product lines.

Products/product lines (or ISIC/SNI-92 codes)	IUI code (to be filled in by IUI)	Share of total production (as in 3b) %
		Total 100 %

	MSEK 1994
7. Capital expenditure. Relates to gross investments in machinery, equipment and buildings.	
8. Expenditure on research and development (R & D). Excluding payments between group companies. R & D expenditure refers to both current expenses and depreciation on capital equipment for R & D. Both R & D carried out in-house and R & D commissioned by the affiliate from a third party should be included (as defined by Statistics Sweden, see instructions VIII:3).	

	MSEK 1994
9. Book value of fixed assets (planned residual value or net carrying value) Relates to machinery, equipments and real estate.	
10. (a) Total liabilities (incl. deferred tax liability in untaxed reserves)	
of which (b) long-term debt to the Swedish companies in the group.	
11. Total equity (incl. equity portion of untaxed reserves).	
12. Total assets (book value).	

	MSEK 1994
13. Proportion of the share capital owned See instructions VIII:5.	
(a) directly and indirectly by the parent company of the group.	%
(b) directly by the Swedish companies in the group.	%

	MSEK 1994
14. Operating income before depreciation	
15. Depreciation according to plan	
16. Total interest expense	
17. Income after financial interest and expense	
18. (a) Net income.	
(b) Total dividend proposed/declared.	

19. Total expenditure on wages and salaries (incl. fringe benefits). See instructions VIII:4

	Number 1994
20. (a) Number of employees. Average number of employees during the year.	
of which (b) recruited from the Swedish companies in the group. Make a reasonable assessment.	

22. Additional information.