

# **INTRA NORDIC TRADE**

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## 1 INTRODUCTION

Over the last decades trade between industrial countries in general has been marked by the increase of trade in products with rather similar characteristics. The divergency of patterns of production and trade suggested by pure trade theory has thus not been confirmed by actual trade flows. The patterns of trade that emerged after the creation of the EEC and EFTA pointed much less to inter-industry specialization and to a higher degree of intra-industry commodity exchanges than expected.

This paper investigates whether this general description also holds for the trading relations between the Nordic countries Denmark, Finland, Norway and Sweden. In particular, we look for the specific characteristics of Nordic trade as compared to overall exports from the Nordic countries and for the degree of specialization in intra-Nordic trade measured by the intra-industry trade coefficients.

In the paper we focus on three broad categories of goods, raw materials and intermediate goods, investment goods and consumer goods.

We start with the assumption that intra-Nordic trade in raw materials and intermediate goods is relatively limited given the geographical closeness of the countries, suggesting similarities in natural resource endowments. Trade in these commodities can be expected to be more important with countries that have a different economic structure.

As for investment goods the case is not clearcut. There is no reason a priori to expect the share of these products in intra-Nordic trade to be more or less important than in the total trade of the countries.

Consumer goods are expected to be relatively important in intra-Nordic trade. We then assume that countries specialize in the production of goods demanded by a majority of the population on the basis of preferences and income levels and that demands for more differentiated products are met by imports.<sup>1</sup> Consumer goods can then be expected to be more important in Nordic trade than in total trade given the closeness of the countries in many respects such as geographic position, income levels and tastes.

On the basis of recent approaches to the explanation of international trade flows we can expect intra-industry trade between the Nordic countries to be intense. It has been found that countries tend to import and export commodities with rather similar characteristics if they have reached a similar stage of development, if the size of the markets are fairly equal, if the geographic distance between the trade partners is small. These propositions have been confirmed by cross-country data which suggest that the intra-industry trade is an empirical reality and not a purely statistical effect depending on the level of aggregation of goods in international trade.<sup>2</sup>

With these propositions in mind the paper has been organized along the following lines.

We start by describing trade among the Nordic countries as compared to their total exports. We look, in particular, at the commodity distribution of exports from the Nordic countries as compared to the commodity pattern of exports to other industrial countries.

We will also look at the net trade balances between the Nordic countries and the rather substantial changes found in this respect will be analyzed in some detail to isolate the trade flows underlying this change.

The section on net trade flows also serves as an introduction to the last part of the paper, i.e., the description and measurement of intra-industry trade. We there discuss to what extent Nordic trade is made up of imports and exports of closely related products or whether Nordic trade reflects some degree of specialization in production between the Nordic countries.

The paper will be split up in four parts

- Market shares in Nordic trade
- Commodity composition of Nordic trade
- Net trade between the Nordic countries
- Intra-industry trade between the Nordic countries

The period of analysis is 1965 to 1982. The data sources used are The Yearbook of Nordic Statistics, IMF International Financial Statistics and OECD Trade by Commodities, Series B. Data for 1981 and 1982 have been obtained from the UN Trade Statistics. Figures for the Netherlands 1982 were not available at the time of the writing of this paper. We have collected figures on imports from the Nordic countries to 14 selected OECD countries covering about 40 commodities. Data for 1978 and onwards are based on SITC Rev. 2.

## **2 MARKET SHARES IN NORDIC TRADE**

Seen in a wide perspective the share of the Nordic countries in world trade is small and declining. The Nordic area exported about 4 percent of total world exports in 1980. Their share in exports from industrial countries is naturally somewhat higher, 6.5 per cent in 1980. During the 70s, however, diverging trends appeared in export performance of the Nordic countries.<sup>3</sup>The Swedish market share in world trade declined substantially and given the weight of Swedish exports this strongly influenced the Nordic total. On the other hand, the Norwegian share in world exports has been increasing strongly due to the recent growth in exports of oil and gas.

Five per cent of imports to industrial countries listed in Table 1 come from the Nordic countries. Import market shares to individual countries from each Nordic country are, however, below one percent for most of the markets listed in the table.

The table clearly illustrates that Nordic trade as such only plays a significant role in the trade of the Nordic countries. Within the area imports from the other Nordic countries account for a high share in total imports. But also in this respect each Nordic country shows different characteristics. The table reveals that dependency on the Nordic market varies much between the Nordic countries.

At one extreme, there is the Swedish case. Swedish exports to Denmark, Finland and Norway account for 12.8, 12.1 and 16.5 per cent, respectively, of imports to these countries. Sweden's imports from Denmark, Finland and Norway account for 6.1, 6.8 and 5.2 per cent of total Swedish imports. Trade shares between the other Nordic countries are much lower, although in most cases substantially higher than their import market share in the European markets.

The Nordic countries increased trade with each other faster than overall trade during the first half of the 70s, but after 1975 the trend has been stagnant and we even notice a tendency to falling market shares in the Nordic markets. This result is to be expected if we look at shares in total imports since the figures will be heavily influenced by the increased value of oil imports after 1974. We correct for this by looking at the share of their total exports that goes to the Nordic markets. Figure 1 shows exports to Nordic markets as a percentage of total exports to the countries listed in Table 1. And also in this diagram we find a break in 1974–75 when 30 to 40 per cent of exports to the traditional main markets went to the other Nordic countries. But the trend has been reversed and the Nordic market as such is not any more a dynamic factor in Nordic trade. Imports to the European trading partners have increased much faster than imports to the Nordic area.

**Table 1 Nordic market shares in total 1980 imports to selected OECD countries**  
Per cent

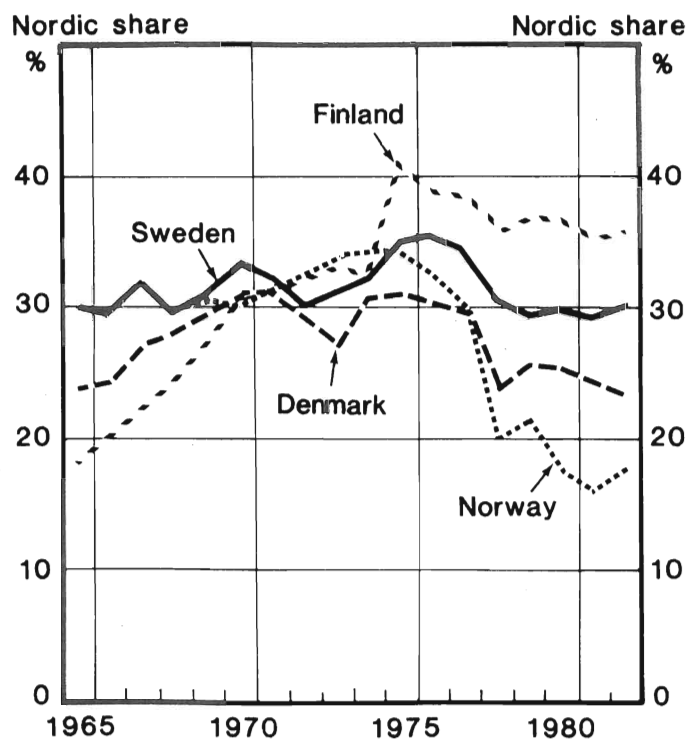
Importing country	Exporting country			
	Denmark	Finland	Norway	Sweden
Denmark	—	3.8	4.1	12.8
Finland	2.4	—	2.1	12.1
Norway	6.1	3.8	—	16.5
Sweden	6.1	6.8	5.2	—
Germany	1.7	0.9	2.2	2.1
United Kingdom	2.1	1.6	2.7	2.8
France	0.6	0.5	0.9	1.5
Italy	0.9	0.4	0.3	1.2
Belgium	0.5	0.3	0.8	1.5
Netherlands	0.9	0.9	1.4	1.9
Austria	0.7	0.5	0.3	1.8
Switzerland	0.8	0.6	0.4	2.0
United States	0.3	0.2	1.1	0.7
Canada	0.2	0.1	0.1	0.6
Japan	0.2	0.1	0.1	0.3
Total above	1.0	0.8	1.3	1.9

There is, however, one very dynamic element in Nordic trade and that is the increasing share of Finnish exports to the other three countries. This is in sharp contrast to the general decline in the relative importance of Nordic trade.

The reason why Figure 1 shows a downward tendency also for Finland during the latter half of the 70s is that Finnish exports to other industrial countries have increased even faster than exports to the Nordic countries. The relative increase in Finnish exports is

**Figure 1. Nordic share in total exports to OECD countries from the Nordic countries 1965–1982<sup>a</sup>**

Per cent



<sup>a</sup> Total exports only covers exports to the countries listed in Table 1.

underlined by the fact that 1980 is the first year in which the Finnish market share in Swedish imports was higher than the share for Denmark and Norway.

Table 2 shows the shares of total exports to the Nordic market for the three broad categories of goods on which we focus. We have broken the 1982 data in Figure 1 down into the shares of exports of raw materials and intermediate goods, of investment goods and of consumer goods that goes to the neighboring Nordic countries. For completeness exports of food and chemicals have been added.

The share for raw materials corresponds to what we expected. The Nordic market is relatively less important, as can be seen from the shares for Finnish and Swedish exports of these products that go to the Nordic market. About 20 per cent of exports stays within the Nordic area. The categories of goods chosen are ill suited for any conclusions regarding Danish exports of intermediate goods. We have, therefore, included a line giving the market share of exports from the food and fishing industries. It is evident that also in the Danish case exports from sectors depending on natural resources are less important in Nordic trade.

A general conclusion is harder to draw for investment goods. The relative importance of exports to the Nordic market is very high for Finland and Norway. The share of investment goods to the Nordic market is somewhat above the average in Danish exports, but relatively low in the case of Sweden.

Table 2 shows the strong dependency on the Nordic market for exports of consumer goods. The share of the Nordic market in exports of clothing, shoes, furniture, etc. is quite substantial, more than twice the share of the Nordic market in total exports.

**Table 2 Nordic share in 1982 exports**  
Per cent

	Exporting countries			
	Denmark	Finland	Norway	Sweden
Food	7.1	37.9	32.5	48.0
Raw materials and intermediate goods	25.7	21.1	18.1	21.2
Chemicals	30.7	38.4	46.9	40.4
Investment goods	32.9	64.8	43.6	31.0
Consumer goods	51.1	70.9	54.3	51.1
Total	24.8	38.1	18.9	32.1

Note: Definitions used in this table are

Food                   SITC (Rev. 2) 0 and 1  
Raw materials and intermediate goods   SITC (Rev. 2) 21 to 29, 64, 67 and 68  
Chemicals             SITC (Rev. 2) 51 to 54, 56 to 59  
Investment goods    SITC (Rev. 2) 69 and 7  
Consumer goods     SITC (Rev. 2) 55, 82 to 85 and 88

See Appendix I Product classification SITC Rev. 2.

The data used have, however, not permitted a breakdown that distinguishes correctly between investment goods and consumer goods. For all those familiar with the SITC trade classification it is obvious that using the definitions in Table 2 household appliances and passenger cars have been classified as investment goods.

### 3 COMMODITY COMPOSITION OF NORDIC TRADE

Table 2 illustrates the relative importance of the Nordic market for trade in different products. Table 3 completes the picture by showing the relative importance of different commodities in trade with the Nordic countries as well as with other industrial countries.

Looking at the values of trade, investment goods is the most important category covering about 20–30 per cent of total trade. The Nordic market for engineering products is significantly more important for the other three Nordic countries than for Sweden.

Consumer goods that were singled out as being important in the Nordic trade of Denmark and Finland are actually of minor importance covering about 15 per cent of the total export value of these countries even within the Nordic area.

The overall dependency of the Swedish economy on the production of capital goods is underlined by the fact that exports of investment goods (SITC (Rev. 2) 69 and 7) cover about 40 per cent of total exports to the Nordic as well as other OECD markets.<sup>4</sup>

**Table 3 Commodity composition of Nordic countries' exports 1982 to the Nordic market and to other industrialized countries**  
Per cent

	Denmark		Finland		Norway		Sweden	
	Nordic exports	Other OECD exports	Nordic exports	Other OECD exports	Nordic exports	Other OECD exports	Nordic exports	Other OECD exports
Food	9.8	42.1	2.1	2.1	9.2	4.4	3.9	2.1
Raw materials and intermediate goods	11.5	10.9	28.2	64.8	14.7	15.5	21.4	37.8
Chemicals	8.9	6.6	4.4	4.3	12.6	3.3	7.5	5.2
Investment goods	28.6	19.2	30.3	10.1	18.5	5.6	37.9	40.1
Consumer goods	16.0	5.1	13.7	3.4	2.4	0.5	5.0	2.3

Note: For definitions see Table 2.

#### 4 NET TRADE BETWEEN THE NORDIC COUNTRIES

One of the most striking changes in the development of the intra-trade between the Nordic countries is the change in Finnish Nordic trade from a negative trade balance with the other three countries to a position as a net exporter. Table 4 shows the trade balances within the Nordic area measured as the difference between imports to Sweden from Denmark, Finland and Norway and the sum of their imports from Sweden as reported by the latter countries.

In the beginning of the period, Sweden was the only country to have a positive net balance with the three other countries. This relation was basically maintained until 1976. During the latter part of the 70s, exports from Finland to the three countries quickly outgrew imports to Finland from the same countries.

When a breakdown of the total figures into commodity groups is made we can identify the factors behind this reversal. Changed conditions in the trading of oil products influence the net trade flows between the countries. From 1977 and onwards Finland shows a substantial positive net in the Nordic trade and Denmark's net positive position turns negative. But besides this radical change for oil exports there is no dramatic change in the underlying figures.

The change that we see in the aggregate for Finland is the result of improved trade balances for a wide range of products. The breakdown into diverse commodity groups in Table 5 shows that positive net exports of Finnish industry are found in the raw material sector, for oil products and for consumer goods. Trade in investment goods shows a negative net figure with the other Nordic countries.

**Table 4 Net exports within the Nordic area, 1965–82**  
Values in million US dollars

	Denmark	Finland	Norway	Sweden
1965	- 82	-102	- 213	398
1966	-122	- 72	- 201	395
1967	-128	- 63	- 273	465
1968	-104	- 11	- 273	388
1969	-142	8	- 235	369
1970	-151	10	- 407	549
1971	-156	- 18	- 418	592
1972	-147	7	- 380	521
1973	-458	- 17	- 431	906
1974	-252	-169	- 487	908
1975	-177	- 79	- 746	1 002
1976	-524	96	- 875	1 304
1977	-468	540	-1 433	1 361
1978	-637	682	-1 359	1 314
1979	-795	1 035	-1 303	1 063
1980	-544	1 061	-1 601	1 084
1981	-468	971	-1 316	813
1982	-435	721	-1 411	1 125



Looking at the other countries we find, as expected, that the Danish negative net figure is heavily due to trade in raw materials and intermediate goods (wood, pulp, paper, iron and steel products, and chemicals). Denmark, as well as Finland, shows a substantial positive trade surplus with Norway and Sweden in consumer goods. It can be noted that the surplus on this account in 1980 trade with the other Nordic countries was even bigger than the surplus on "traditional" exports from the agricultural sector.

The Norwegian net trade position with the other Nordic countries is due to negative figures for trade in all categories, raw materials and intermediate goods, investment goods and consumer goods. The exports of chemical goods (SITC 5) is an area where Norway has always had a positive net position with the other Nordic countries. The surplus on petroleum products classified in SITC 3 has also always been positive, but has naturally increased substantially during the latter part of the 70s.

Finally, the trade position of Sweden vis-à-vis the other Nordic countries has always been one of a substantial excess of exports over imports during the period studied. The reason is a large net on the exports of products from the capital goods industries. It is worth noting that the very last years in Table 4 point to a decline in the surplus. This is due to a combination of a lower surplus on investment goods and a substantial increase in the net imports of consumer goods.

**Table 5 Net trade between the Nordic countries 1980**  
US million dollars

	Denmark	Finland	Norway	Sweden
Food	234	- 56	53	-232
Raw materials	-780	535	-404	647
Oil and fuels	-313	371	177	-235
Chemical products	-119	- 93	170	41
Investment goods	158	-362	-819	1 023
Consumer goods <sup>a</sup>	285	477	-460	-301
<b>Total</b>	<b>-544</b>	<b>1 060</b>	<b>-1 601</b>	<b>1 084</b>

<sup>a</sup> Not including goods from the engineering sector.

## 5 INTRA-INDUSTRY TRADE BETWEEN THE NORDIC COUNTRIES

After this broad picture of the structure of the trade between the Nordic countries on an aggregate Nordic basis we will now use the techniques of intra-industry trade measures to compare the specialization of trade between the individual Nordic countries. We then measure the extent to which trade, for example, between Finland and Sweden is made up of exports and imports of the same type of products, here broadly defined as 2 digit level SITC commodities.<sup>5</sup>

The measures of intra-industry trade are supposed to illustrate the degree of specialization in a country's foreign trade pattern. For this purpose we distinguish between **inter-industry trade** (INTER), i.e., trade between different industries.

This is measured as the percentage of total trade, exports plus imports, covered by net trade.

**Intra-industry trade** (INTRA) measures the degree of trade within the same industry and is defined as the percentage of total trade covered by the difference between total trade and net trade.

Following the notation and methods in Grubel and Lloyd (1975) inter- and intra-industry trade measures for a particular good (i) are respectively

$$\text{INTER}_i = A_i = 100 \cdot [|X_i - M_i| / (X_i + M_i)] \quad (1)$$

$$\text{INTRA}_i = B_i = 100 \cdot [(X_i + M_i) - |X_i - M_i|] / (X_i + M_i) \quad (2)$$

Both measures take values between 0 and 100 and by definition they add to 100. When exports of a good exactly equals imports, intra-industry trade is 100. When exports are one half of the import, value the intra-industry trade measure will be 66.6.

Intra-industry trade measures are calculated for individual industries, i.e., for 49 commodities listed in Appendix 1. An aggregate measure of intra-industry trade is usually obtained using the share of each industry in total trade, i.e., exports plus imports as weights.

$$\text{INTRA}_{\text{sum}} = \bar{B}_i = 100 \cdot \sum B_i \cdot (X_i + M_i) / \sum (X_i + M_i) \quad (3)$$

If total trade between the areas is not balanced the intra-industry measure will be biased downwards because exports cannot match imports in each industry. When considering intra-industry trade measures for all commodity trade one can adjust for the aggregate trade imbalance by expressing intra-industry trade as the proportion of total commodity export plus import covered by total trade less the trade imbalance.<sup>6</sup>

Intra-industry trade coefficients for the trade between the four countries are presented in Table 6. The yearly figures are the weighted sum of intra-industry trade ( $\bar{B}_i$ ) with no correction for trade imbalances.

Two common propositions regarding intra-industry trade could be checked at this stage. Intra-industry trade is assumed to be more important when countries are close to each other geographically and, secondly, intra-industry trade increases over time.<sup>7</sup>

The first proposition is roughly confirmed. Intra-industry trade is important between Sweden and the neighboring countries whereas intra-industry trade between Denmark and Finland, the most distant trading partners, is indeed very small.

As for the development over time the table shows some diverging trends between different countries. For some countries there is even a decline in the intra-industry trade measure after adjustment for the imbalance in overall trade. This holds, in particular, for the trade between Finland and Sweden. The decline in the measure for trade between Norway and Denmark can be attributed to the much larger share in total trade made up

**Table 6 Intra-industry trade between the Nordic countries 1965–82**

	Sweden Denmark	Sweden Finland	Sweden Norway	Denmark Finland	Denmark Norway	Norway Finland
1965	60.6	45.6	41.6	17.4	46.5	36.8
1966	58.8	59.3	44.1	19.5	49.4	48.3
1967	58.3	51.2	46.9	22.5	57.3	48.1
1968	59.0	59.5	50.4	26.2	53.2	49.4
1969	57.7	67.0	54.9	32.9	49.5	57.1
1970	57.3	61.7	52.2	32.0	55.0	53.3
1971	56.6	63.7	51.4	34.0	51.6	54.2
1972	58.4	63.8	58.9	34.5	54.6	52.3
1973	53.7	63.0	60.8	33.0	63.6	50.4
1974	57.8	66.6	56.2	30.5	56.6	54.3
1975	63.7	68.1	52.0	31.0	54.1	55.2
1976	64.1	70.0	53.2	35.0	52.5	57.5
1977	66.7	66.7	53.8	35.1	53.2	63.8
1978	65.7	64.2	57.7	28.7	50.5	44.5
1979	67.5	62.1	61.4	28.3	49.1	41.2
1980	66.0	61.9	61.9	27.2	48.3	46.7
1981	65.7	67.0	57.2	27.3	44.1	43.0
1982	63.1	67.0	49.0	26.3	43.0	34.9
<b>Average</b>						
66–70	58.2	59.7	49.7	26.6	52.9	51.3
71–75	58.0	65.0	55.9	32.6	56.1	53.2
76–80	66.0	65.0	57.6	30.9	50.7	54.7
<b>Adjusted average</b>						
65–70	68.0	71.8	67.7	35.6	60.0	57.1
71–75	66.2	72.4	70.6	47.0	61.8	62.8
76–80	75.9	70.4	78.9	49.5	55.9	71.8

of petroleum products in recent years. The decline in the intra-industry trade measure between Norway and Finland, on the other side, seems to reflect increased imbalances in total trade.

Table 6 shows that on the average two-way trade, i.e., exports and imports of the same kind of commodities, is not very important in the trade between the Nordic countries. Most of the countries involved showed intra-industry trade figures below the 66.6 indicating that exports were half the value of imports or vice versa.<sup>8</sup>

A closer examination of the data presented in Table 7 confirms the differences to be expected regarding intra-industry trade in raw materials and intermediate goods, investment goods and consumer goods.

Contrary to expectations, intra-industry trade is rather significant in raw materials taken together. Substantial differences can be noted between different kinds of raw materials and intermediate goods. Forest products are, in general, traded both ways over the borders. The intra-industry trade measures fluctuate much between years. Iron and steel products, SITC 67, account for the relatively high measure for intra-trade in these products.

The highest figures for two-way trade is found in investment goods where trade flows show intra-industry trade above the average for all products. Trade between Sweden and Finland and Sweden and Denmark seems to be of particular importance.

The most surprising results among the intra-industry trade indices found in Table 7 are the figures for consumer goods. In this category we find that industries in the Nordic countries are specialized in the sense that inter-industry trade clearly dominates over intra-industry trade. As a starting point for the analysis of trade in consumer goods between the Nordic countries we had chosen the Linder (1961) views that trade in manufactures could be seen as an extension of the domestic demand-oriented market. We had assumed intra-industry trade in these products to be important. This is clearly not an explanation of the trade in consumer goods within the Nordic area.

**Table 7 Intra-industry trade 1982**

	Raw materials	Investment goods	Consumer goods	Total exports
Sweden–Denmark	40.6	77.2	49.6	63.1
Sweden–Finland	68.5	74.0	33.3	67.0
Sweden–Norway	53.3	48.9	37.2	49.0
Denmark–Finland	12.5	40.2	64.0	26.3
Denmark–Norway	50.2	52.1	16.3	43.0
Norway–Finland	34.5	38.8	5.9	34.9

## 6 SUMMARY

Intra-Nordic trade increased rapidly up to the middle of the 70s. But, after that, it has ceased to be a dynamic factor for economic growth in the Nordic countries, growing at a slower rate than their overall trade. Finland forms an exception to this observation, having gained market shares rapidly in the other Nordic countries, especially in Sweden.

To a large extent, intra-Nordic trade revolves around Sweden. Swedish goods account for a large share of the other countries' imports and the Swedish market represents a major export market for Finland, Denmark and Norway. The exchange of goods and services between the other Nordic countries is much smaller.

The pattern of specialization in intra-Nordic trade deviates significantly from the overall trade pattern of Finland, Denmark and Norway, but to a lesser extent in the case of Sweden. At the outset of this paper we hypothesized that similar income levels and tastes should promote intra-Nordic trade in consumer goods. Our results support this hypothesis since those goods play a considerably more important role in intra-Nordic trade than in the trade of the Nordic countries with the other OECD countries. The relative importance of investment goods, on the other hand, varies among the countries. The Nordic market is relatively more important to the Danish, Norwegian and Finnish engineering industries than to the Swedish, which is heavily dependent on exports to the other OECD markets. Finally, we also formulated a hypothesis that the Nordic market should be less important in the case of raw materials, and, for Denmark, of food-stuffs. This is also clearly supported by statistical evidence.

A special aspect of intra-Nordic trade, that was studied in the paper, was the extent to which it can be characterized as intra-industry trade. We found that it was most important in the trade between neighboring countries and less important for countries like, for instance, Denmark and Finland with no common border. Intra-industry trade is relatively most important for investment goods and least important in the case of consumer goods.

The trade balances of the individual Nordic countries vis-à-vis the rest of the Nordic area have traditionally shown a surplus for Sweden and deficits for the other countries. Over the last decade, however, this picture has changed radically in the case of Finland, who has emerged as a net exporter in intra-Nordic trade of almost the same magnitude as Sweden.

**APPENDIX 1: PRODUCT CLASSIFICATION (SITC 2)****0 Food and live animals chiefly for food****1 Beverages and tobacco****(2) Crude materials, inedible except fuels**

- 21 Hides, skins and fur skins, raw
- 22 Oil seeds and oleaginous fruit
- 23 Crude rubber (including synthetic and reclaimed)
- 24 Cork and wood
- 25 Pulp and waste paper
- 26 Textiles fibres (other than wool tops) and their wastes (not manufactured into yarn of fabric)
- 27 Crude fertilizers and crude minerals (excluding coal, petroleum and precious stones)
- 28 Metalliferous ores and metal scrap
- 29 Crude animal and vegetable materials, NES

**3 Mineral fuels, lubricants and related materials****4 Animal and vegetable oils, fats and waxes****(5) Chemicals and related products, NES**

- 51 Organic chemicals
- 52 Inorganic chemicals
- 53 Dyeing, tanning and colouring materials
- 54 Medicinal and pharmaceutical products
- 55 Essential oils and perfume materials; toilet, polishing and cleansing preparations
- 56 Fertilizers, manufactured
- 57 Explosives and pyrotechnic products
- 58 Artificial resins and plastic materials, and cellulose esters and ethers
- 59 Chemical materials and products, NES

**(6) Manufactured goods classified chiefly by material**

- 61 Leather, lthr. manufs., NES & dressed fur skins
- 62 Rubber manufactures, NES
- 63 Wood and cork manufactures (excluding furniture)
- 64 Paper, paper board, and articles of paper pulp, of paper or of paper board
- 65 Textile yarn, fabrics, made-up articles, NES, and related products
- 66 Non-metallic mineral manufactures, NES
- 67 Iron and steel
- 68 Non-ferrous metals
- 69 Manufactures of metal, NES

**(7) Machinery and transport equipment**

- 71 Power generating machinery and equipment
- 72 Machinery specialized for particular industries
- 73 Metal working machinery
- 74 General industrial machinery and equipment, NES, and machine parts, NES
- 75 Office machines and automatic data processing equipment
- 76 Telecommunications and sound recording and reproducing apparatus and equipment
- 77 Electrical machinery, apparatus and appliances, NES, and electrical parts thereof

- 78 Road vehicles (including air-cushion vehicles)  
79 Other transport equipment

**(8) Miscellaneous manufactured articles**

- 81 Sanitary, plumbing, heating and lighting fixtures and fittings, NES  
82 Furniture and parts thereof  
83 Travel goods, handbags and similar containers  
84 Articles of apparel and clothing accessories  
85 Footwear  
87 Professional, scientific and controlling instruments and apparatus, NES  
88 Photographic apparatus, equipment and supplies and optical goods, NES;  
watches and clocks  
89 Miscellaneous manufactured articles, NES

**9 Commodities and transactions not classified elsewhere in the SITC**

**NOTES**

- 1 Burenstam-Linder (1961).  
2 Loertscher and Wolter (1980).  
3 Eva Christina Horwitz, Export Performance of the Nordic countries 1965–80, IUI Working Paper No. 92, 1983.  
4 For an IUI-study on the specialization pattern of Swedish Engineering Industry, see Lennart Å. Ohlsson, "Engineering Trade Specialization of Sweden and Other Industrial Countries".  
5 See Appendix 1 for the list of commodities.

- 6 For calculation purposes  $\bar{B}_i$  can be expressed as

$$\bar{B}_i = \frac{100 \cdot \Sigma[(X_i + M_i) - |X_i - M_i|]}{\Sigma X_i + M_i}$$

and the weighted measure of intra-industry trade corrected for imbalances in overall trade.

$$\bar{C}_i = \frac{100 \cdot \Sigma[(X_i + M_i) - |X_i - M_i|]}{\Sigma(X_i + M_i) - |\Sigma X_i - \Sigma M_i|}$$

- 7 For a thorough treatment of Intra Industry trade and the case of Sweden see Lundberg (1981).  
8 The measure of intra-industry trade changes with the level of aggregation of commodities. At three level SITC, extending the list of products to close to 200 the measure declines by 5 points on average for trade between the four countries in 1981 and somewhat more in 1982.

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