

ECONOMIC GROWTH IN A NORDIC PERSPECTIVE



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FOREWORD

A comprehensive Nordic economic analysis beyond the short-term business cycle has long been needed. Preparatory work for this publication began a couple of years ago between Thorkil Kristensen and Juul Jørgensen at IFF in Copenhagen, Tauno Ranta and Pentti Vartia at ETLA in Helsinki, Arne Selvik at IØI, Bergen and Gunnar Eliasson, IUI, Stockholm. The idea was to pull results from ongoing research at the various institutes together for an analysis of the long-term growth prospects on the Nordic scene. At a later stage Arne Mikkelsen at Det Økonomiske Råd in Copenhagen joined the group.

We have decided to organize work in a decentralized manner. The summary chapter has been drafted by Gunnar Eliasson and Enrico Deiacò, but has been redrafted several times after a series of seminars so that the undersigned regard it as a joint product. The same goes for Chapter II, that was originally drafted by Jukka Leskelä.

Chapter III on Denmark has been written by Arne Mikkelsen in cooperation with colleagues at Det Økonomiske Råd and the annex by Anders Bjerre at IFF, Copenhagen. Since the Secretariat of Det Økonomiske Råd entered the project at a later stage, the chapter on Denmark is of a more summary nature and deals with fewer topics than the other chapters. Chapter IV on Finland has been written by Pekka Ylä-Anttila and Jukka Lassila at ETLA, chapter V on Norway by Ole Berrefjord and Per Heum at IØI and chapter VI on Sweden by Johan Örtengren at IUI. Enrico Deiacò at IUI has been responsible for the technical editing of the entire publication, with the assistance of Inkeri Happonen at ETLA. Per Heum has edited the Statistical Appendix of data, which were provided by the cooperating institutions. The figures have been drawn by Arja Selvinen and Arja Virtanen at ETLA.

All Special Studies have been authored as signed and been subjected to a joint editorial review as is the practice with all institutes.

January, 1984

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A ECONOMIC ANALYSIS AND FORECASTS

CHAPTER I

ECONOMIC GROWTH IN A NORDIC PERSPECTIVE

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1 WHY DO WE DO THIS?

Each of the four Nordic countries has faced a similar set of environmental disturbances during the 70s. They have, however, been affected differently – especially Norway being an oil producer. They have opted more or less deliberately for different policy solutions, and as a consequence, they exhibit different political and social evaluations of the situation. For instance, the Swedes and the Norwegians have placed short-term priority on employment. The Danes and the Finns have accepted structural adjustments in manufacturing industry to a higher degree and have also experienced fast manufacturing growth, but a not negligible increase in unemployment. It is difficult to judge whether the latter should be considered a deliberate policy choice rather than a political problem. One could also argue that misunderstanding the economics of the middle 70s, which was common among both politicians and economists, may have led to carrying out policies according to the mistaken view that, however deep, the economic problem was purely cyclical, and a return to normal would be automatic.

Understanding why post 1975 economic development has meant stagnation involves a difficult task. It can, however, be facilitated by studying the different growth performances of the four economies. This explanation is, furthermore, a basic requisite for the forecasts that we attempt. We don't believe that growth of the Nordic economies is only a matter of resumed demand growth in the rest of the world. An important task will be to understand why manufacturing growth has faded in the Swedish and Norwegian economies, while it has continued at rates close to the average of the OECD countries in Denmark and above that rate in Finland.

This book addresses an overriding "policy problem": How to get each of the Nordic economies back onto a stable economic growth path with reasonable inflation and low unemployment rates? Can this be achieved even if the slow growth situation persists in the rest of the OECD world? Is there any common policy solution for the group of Nordic countries as a whole? What, then, is the time horizon for getting back to a path of steady economic expansion?

According to our view, the dynamics of resource allocation is a key notion in solving structural difficulties. The economic policy maker engaged in short-term demand management can take production structure and installed capacity to produce as given or roughly as known, observe the rate of utilization of machine capacity – and the labor force – and figure out how to vary and mix total demand through a repertoire of fiscal and monetary parameters. In this world of macro demand management, the government appears as the prime mover.

Beyond the short term, which is hardly longer than one year, supply comes into play in an important way. In the longer term, the prime movers are the large number of individuals who offer their labor and skill services, and the firms that form production and notably long-term investment decisions. This decision process is far more difficult to

understand and to predict than macro demand formation, and the role of the government becomes more unclear. One of its most important, positive economic tasks now appears to be that of a guardian of the rules that guide market processes (the market environment) in which firms and individuals act in order to achieve efficient resource allocation. In the long run there may even be a conflict between efficient stabilization policies and long-term rapid and sustainable growth.¹

In Chapter I we first look at the production system (structure) in comparison with the international market situation (competitiveness). The analysis gives the options for domestic demand management. Our view is that the options for traditional demand policies are very restricted if the production system is badly adjusted to the world competitive situation. Expansive demand policies, especially when directed towards increased public or private consumption, in a situation of structural disequilibrium, may spin off a chain reaction of macro disequilibria such as public and foreign deficits, inflation, unstable relative prices, etc. For this reason, total demand and macro disequilibrium problems will be addressed in the context of policy making at the end of the chapter.

2 SOME STATISTICAL HIGHLIGHTS ON THE NORDIC SUPPLY SITUATION

2.1 Differences in Output Growth

Sweden was industrially the most advanced of the four countries just after the war. Finland was at the other end of the Nordic economic spectrum, if we measure by the per capita output of the manufacturing sector. Over the 30 post-war years manufacturing output in Finland increased almost twice as much as in the other three countries (Figure 1B). Part of the faster growth in Finland can be explained by the technological gap, which existed between Finland and many other countries for many years after the war. However, other factors were also at work, since the technology gap to some extent was common to all European countries vis-à-vis the U.S., up to the middle 60s.

After the first oil crisis, industrial performance compared to the OECD average, has diverged substantially among the Nordic countries (Figure 2A). Overall manufacturing growth in the industrial world slowed down. Finland, however, except for an intermediary break, managed to surge ahead of the OECD average. Denmark, though suffering from severe balance of payments problems, came fairly close to the OECD average. Manufacturing output in Sweden and Norway, on the other hand, entered a period of complete stagnation. The picture, of course, changes positively for Norway if industry is defined to include oil and gas production as well.

2.2 Supply Composition

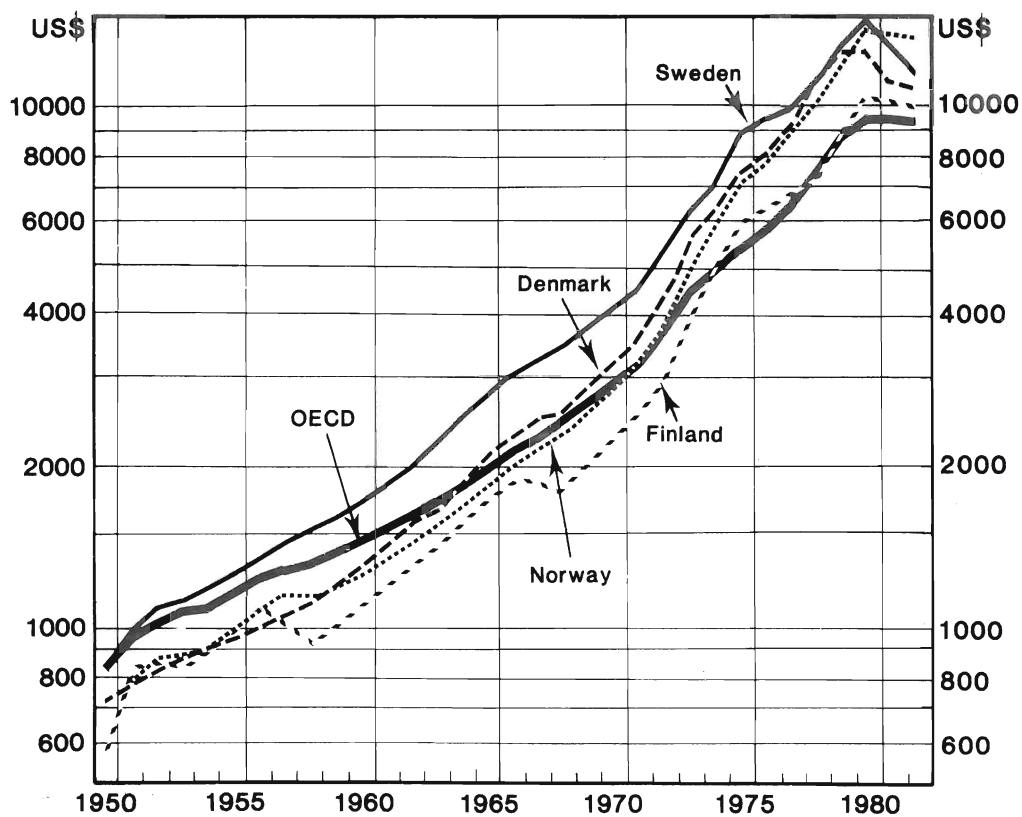
Despite an adverse economic development during the 70s, the Nordic countries belonged to the wealthiest of the world at the beginning of the 80s (Figure 1A). GDP per capita averaged almost \$13,100 in 1980. Together 22 million people shared almost \$300 billion in total GDP in 1980 or 8.5 per cent of GDP in OECD Europe (see Table 1).

Finland still has more of its export earnings coming from basic industries (forest industries accounted for more than 38 per cent of commodity exports in 1982) than Sweden and Denmark. But engineering industries are becoming increasingly more important. Denmark has one heavy base in agricultural production and food industries (25 per cent of total exports) and another base in specialized engineering. Norway has its manufacturing base in production, exploiting hydroelectric power, and Sweden in a diversified engineering industry (40 per cent). Sweden, however, still carries a substantial activity in crude steel and forest industries.

With the exception of Norway which is becoming increasingly dependent on its new raw material resource (16–17 per cent of GDP, and almost 50 per cent of commodity exports now originate in oil and gas production), Denmark, Finland and Sweden have been shifting out of their raw materials and basic industry dependence. The wealth of these three countries is becoming more and more based on an internationally competitive manufacturing sector.

Figure I:1A Gross domestic product per capita in thousands of U.S. dollars at current prices and exchange rates, 1950–82

log scale

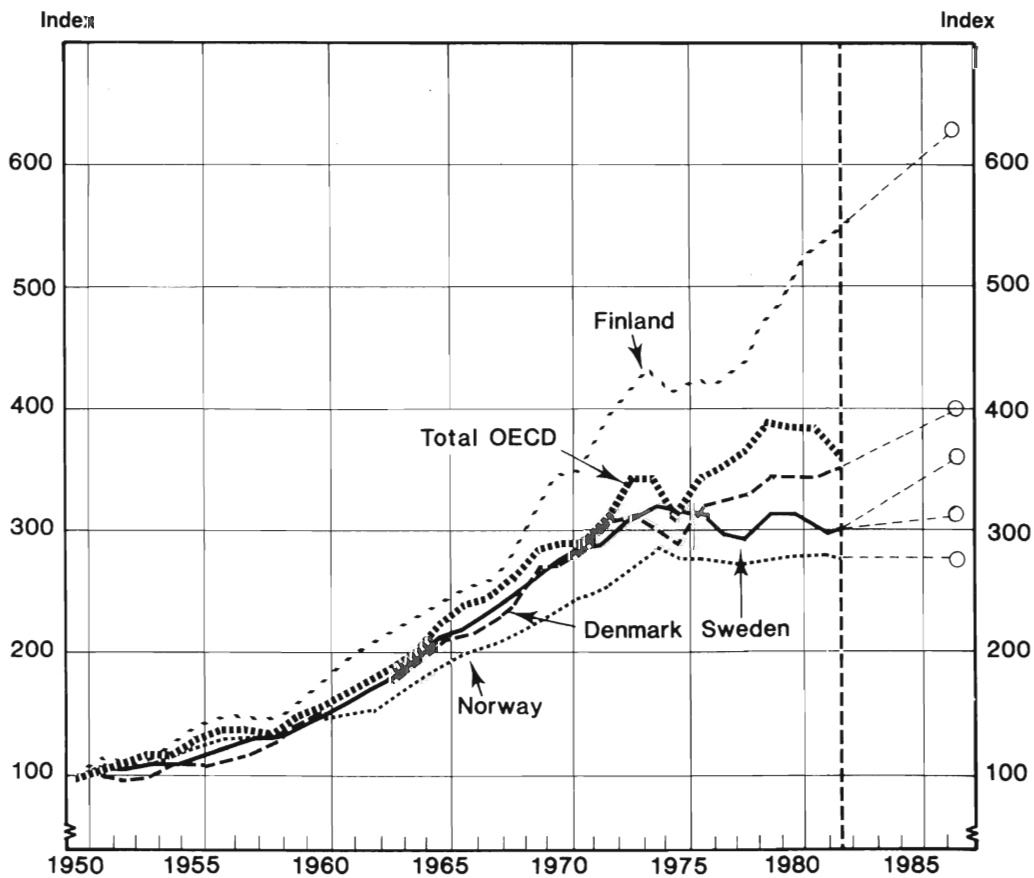


Source: OECD, National Accounts

Another characteristic of the Nordic supply composition is the fact that the Nordic countries have built public service producing sectors that are somewhat larger (as a share of GDP) than the OECD average. The bulk of public sector service production, however, consists of infrastructure activities (health, education, transport). The distinguishing feature of the Nordic countries in this respect is the internationally high transfer payments from the public sector that has become prominent during the 70s. The levels and growth rates of public sector activities between the Nordic countries, however, vary considerably (see Figures 6B and 6C).

Figure I:1B Manufacturing output growth in the Nordic countries, 1950–87 and in OECD, 1950–82

Index 1950 = 100



Sources: Statistical Supplement, country chapters, OECD, Industrial Statistics 1900–62, Industrial Production, Historical Statistics 1960–75 and Indicator of Industrial Activity, various issues

Table I:1 Nordic production structures in 1980

	Denmark	Finland	Norway	Sweden	Nordic economy	OECD Europe	U.S.
1) GDP, billion \$	66.2	50.1	57.4	123.4	297.1	3 507.8	2 598.9
2) Inhabitants, million	5.1	4.8	4.1	8.3	22.3	394.2	227.7
3) GDP, Nordic share, per cent	22	17	19	42	100		
4) GDP, per capita, \$	12 929	10 479	14 045	14 851	13 076	8 899	11 416
5) GDP, per capita average = 100	99	80	111	114	100	68	87
6) Contribution to GDP per cent							
a) Agriculture, forestry, fishing, mining and quarrying	5	10	20**	4			5
b) Manufacturing	19	29	16	24			24
c) Electricity, construction	8	11	11	11			7
d) Trade, transport financing, etc.	46	37	38	35			45
e) Health, education, transport and other public infrastructure activities *	13	12	8	11			—
f) Public service production, incl. (e)	22	15	14	25			13

* The figure for Denmark is included in d)

** of which 15 percentage points are in oil and gas

Source: OECD, National Accounts

2.3 Capacity Growth and Resource Allocation

The 70s have witnessed a substantial shift in capital spending patterns in the four countries.

Norway has increased the share of resources invested in oil related activities considerably. Investment in the petroleum sector exceeds investments in the traditional manufacturing sector. Its main long-run problem, however, is to transform its oil wealth into a more diversified "industrial wealth". The "crowding out effect" that the oil and gas sector exercises on the manufacturing industries, however, makes this transformation difficult.

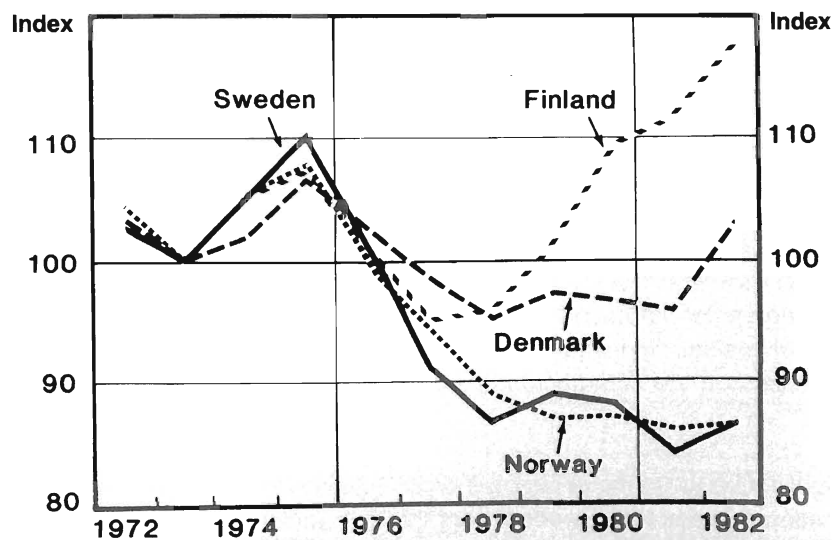
Finland has continued to move out of its basic industry dependence, into engineering, a transformation process that Sweden went through earlier. However, over the foreseeable future basic industries will remain an important part of Finnish industry.

Sweden has led a schizophrenic structural life during the 70s. Firms in basic industries have been prevented by policy makers to close down economically obsolete plants (see Carlsson's Special study 3). But at the same time, other industries have flourished, or come to life, in more sophisticated areas. The technological and commercial base has been expanding strongly, and Swedish industry today has a broad-based and strong competitive edge that does not show in aggregate statistics, because of its heavy base of crisis industries (accounting still for some 10 per cent of manufacturing employment).

Danish industry exhibits a brighter picture. There is a broad base of sophisticated, but rather small firms in expanding markets, that is moving the Danish supply structure out of its original dependence of agriculturally related products.

The adjustment needs in Norwegian manufacturing industry are as large as, or larger than in Sweden on the average, and more widespread. The bulk of traditional export industries appears to be located in stagnating markets, even if the share is diminishing. Characteristic for the Norwegian manufacturing sector is the large role played by regional development policies and government operated companies. The disbursement of huge industry subsidies in Norway and Sweden, but not in Denmark and Finland,

Figure 1:2A Production in manufacturing industry, 1973–82;
The Nordic countries compared with the OECD
 Index OECD = 100



Sources: Statistical Supplement and OECD, National Accounts

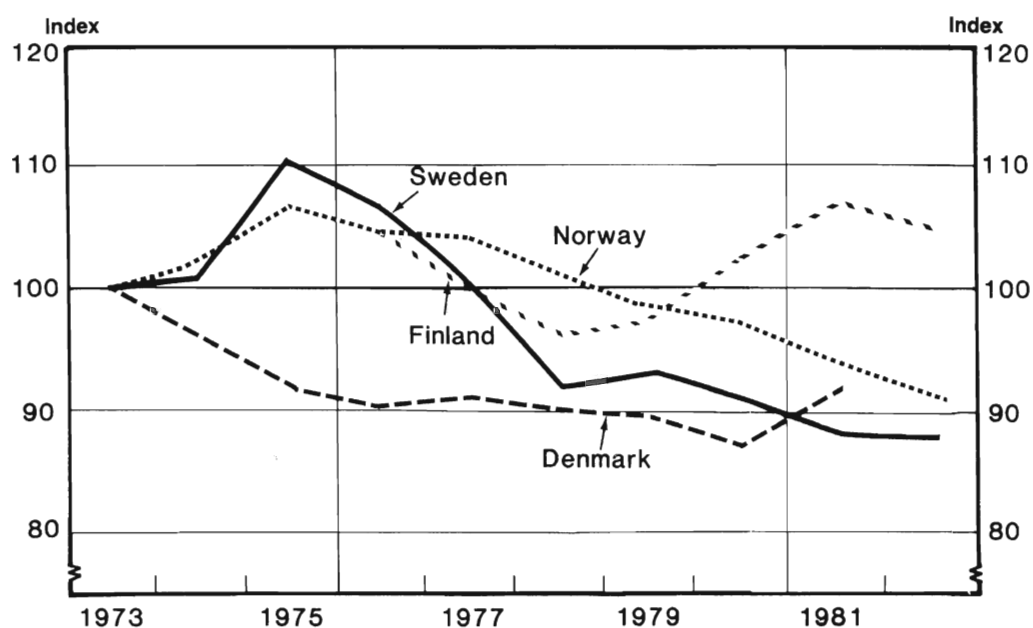
indicates, however, that there exists a considerable amount of economically obsolete capital equipment in these countries.

Much of the unused manufacturing capacity in Sweden also appears to be explained by the existence of obsolete and/or subsidized installations. Danish industry and, to some extent, Finnish industry, seem to have managed their post-oil crisis structural adjustment quite successfully. This, as mentioned above, is also true for the bulk of Swedish industry. While structural adjustment in the healthy part of Swedish industry and in Denmark appears to have included a significant reorientation of technologies and markets of existing firms, Finnish adjustment to a larger extent consists of adjustments within existing industries. However, we should also mention that both Denmark and Sweden have been accumulating foreign debt to finance a consumption standard, that is higher than the capacity to export allows. At the moment, foreign debt accumulation in Denmark, however, corresponds in magnitude "only" to interest payments on the debt.

All four countries, except Finland, have reduced their investment ratios in manufacturing (in per cent of value added) relative to the OECD average after the first oil crisis (see Figure 2C). This corresponds to a substantial decline in the level of investment spending in the stagnating Swedish economy. Also in Denmark investment in volume terms has fallen. Both manufacturing output and investment have been growing in Finland.

**Figure 1:2B Employment in manufacturing industry, 1973–82;
The Nordic countries compared with the OECD**

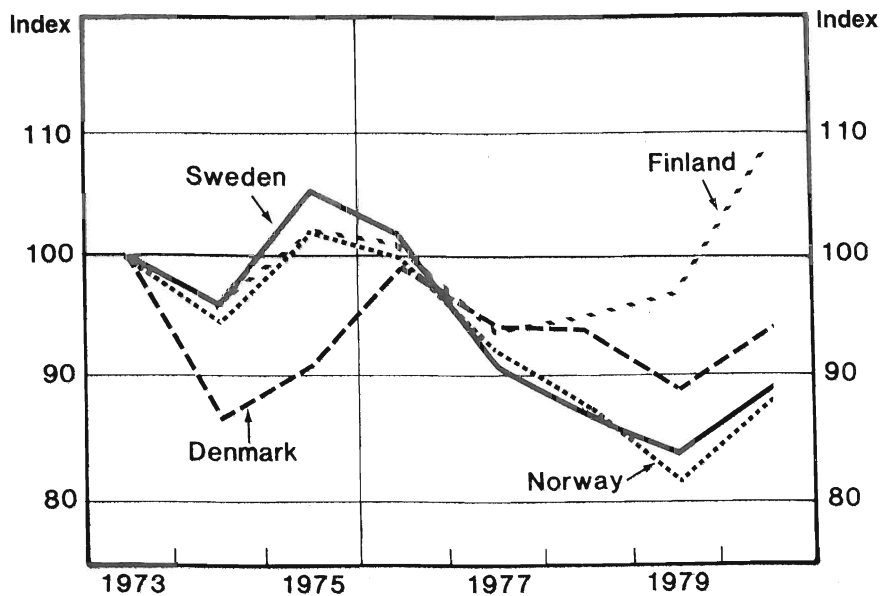
Index OECD = 100



Sources: Statistical Supplement and OECD, National Accounts

Reduction in manufacturing investment spending has caused considerable concern in Denmark and in Sweden. Swedish policy authorities have, in fact, urged, or even exhorted, firms to "help to invest the industry out of its crisis". Considering the rate of return (Figure 3A) and output growth situation, however, investment spending has been more or less normal in both countries. The fast shift of industrial structure in Denmark, and outside the basic industry in Sweden into more sophisticated and less hardware-intensive industries furthermore suggests that a continued downward trend in investment ratios is to be expected, and should be regarded as a sign of health. In Sweden, this development has been coupled by a strong upward surge in R&D spending, being in the neighborhood of 41 per cent of machinery and construction investment during the last five years, practically all being commercially financed by industry itself (cf. the Swedish country chapter VI and the Special study 4 by Wyatt). Denmark, on the other hand, has experienced a small decline in the level of R&D activity in manufacturing. This may, however, be a misleading indicator because such a large share of competitive industrial activities takes place in medium-sized and small firms, where many activities of both owners and employees are essentially of an R&D-character, without being registered as such. In Finland, the level of R&D spending has slowly increased during the 70s, but it is still low compared to the other Nordic countries.

Figure I:2C Investment in manufacturing industry, 1973–80;
The Nordic countries compared with the OECD
 Index OECD = 100



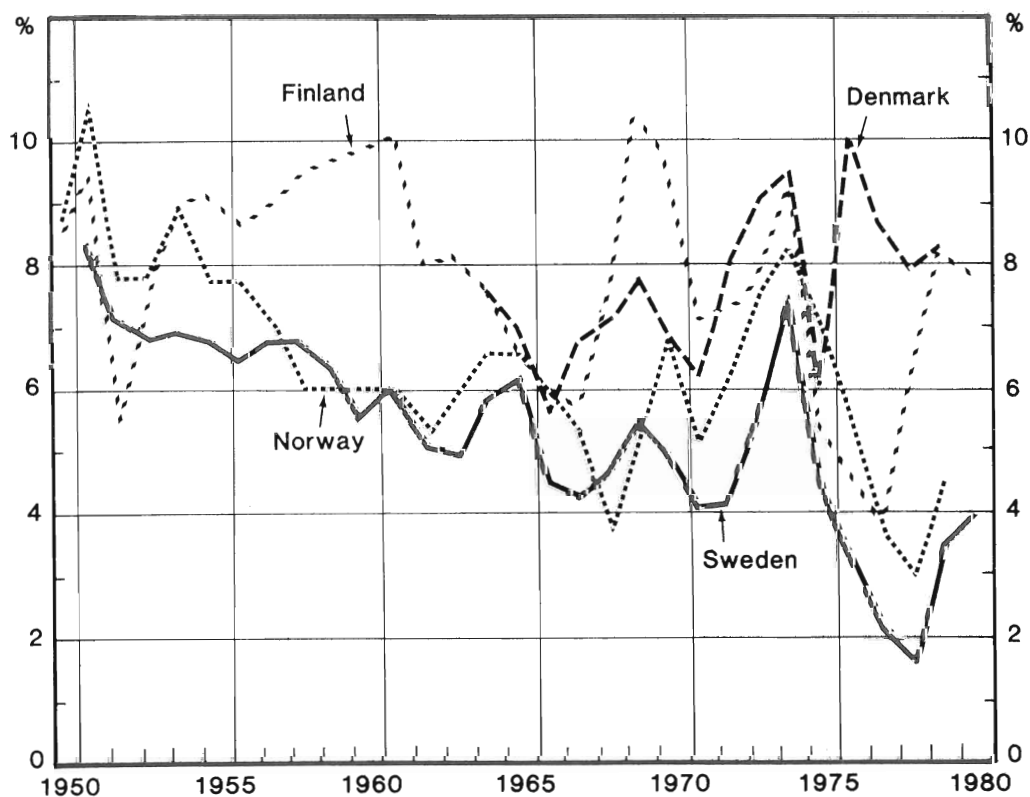
Sources: Statistical Supplement and OECD, National Accounts

3 THE COMPETITIVE SITUATION

3.1 Rates of Return

The competitive situation of a country, or an industry, is not a well defined concept. The most natural thing would be to measure international competitiveness in terms of achieved results, i.e., with the ability of an economy to sustain at least at the same growth rate in total output as competing nations, without a deteriorating balance of payments.² External balance can, of course, always be achieved by drastic policy correction, if economic growth is no goal variable. If external disequilibrium is a problem in an international environment of economic growth, its roots are, however, always to be found in the factors that regulate the investment decisions and long-term capacity growth in an economy.

Figure I:3A Real rates of return on total assets and before tax in Nordic manufacturing industries, 1950–80
Per cent



Sources: The method is presented in Eliasson G., "Profit Performance in Swedish Industry", *Industrikonjunkturer*, hösten 1976 and Statistical Supplement

Economic growth is normally something socially desired, and our definition of competitiveness directs our inquiry to the factors creating growth in an economy. It is also very obvious that most indexes of competitiveness used, for instance terms of trade, wage costs, productivity or unit labor costs, more or less form elements in a rate of return measure.³ The rate of return over the domestic interest rate also figures importantly in the investment decision in companies, but it is a difficult concept to capture in comparable statistical terms.⁴

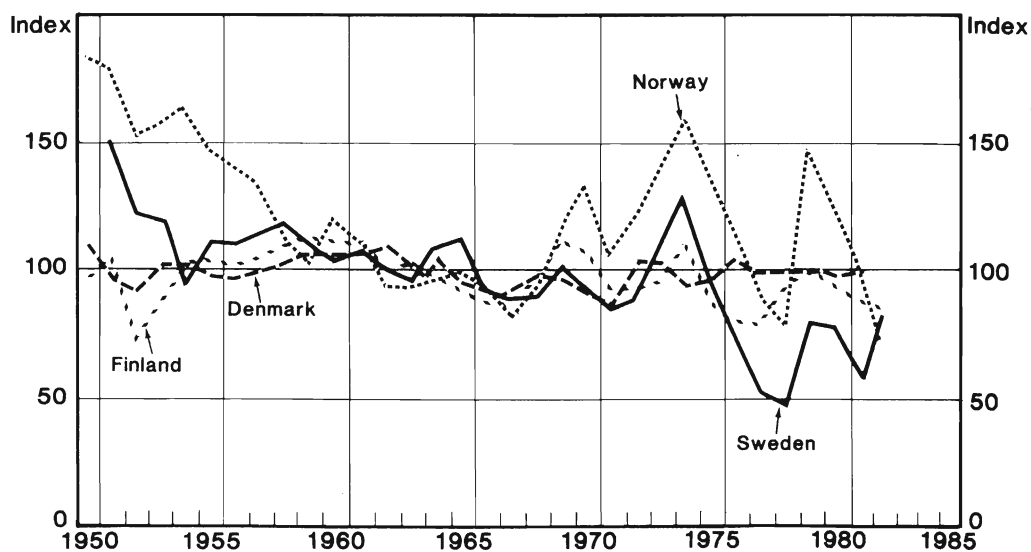
Figures 3A–3B exhibit a set of crude profitability measures for the Nordic countries. Even though profitability data are unreliable, especially for the earlier part of the period, one could still say that they indicate a remarkably good profit performance of the Nordic countries up to the 1974 oil situation. Finnish manufacturing appears to be ahead of the other countries' at least to 1975, an observation that is also consistent with other data, for instance the correspondingly faster output growth (see Figure 1B).

For Norwegian and Swedish industries the post 1975 period exhibits a worsened profitability record, which is also matched by a stagnation in manufacturing output. Unfortunately, there are no data available for the period after the two Swedish devaluations. They very likely improved profitability figures considerably.

The main argument for using a rate of return comparison in analyzing the competitive situation is that it takes capital productivity into account and also allows comparison with

Figure 1:3B Profit margins in the Nordic manufacturing industries, 1950–82

Index: average 1960–69 = 100



Source: Statistical Supplement

the domestic interest rate. The aggregate profit margin (Figure 3B) is normally a good indicator of the time development – not the level – of the rate of return. It does not take the efficiency in the use of capital into account. Profit margins are, however, much easier to measure than the rate of return. One does not have to use measures on capital of doubtful statistical and conceptual qualities. Profit margins in Finnish and Danish manufacturing exhibit a more stable development during the post-war period than the Norwegian and Swedish margins compared with the average development of the 60s.

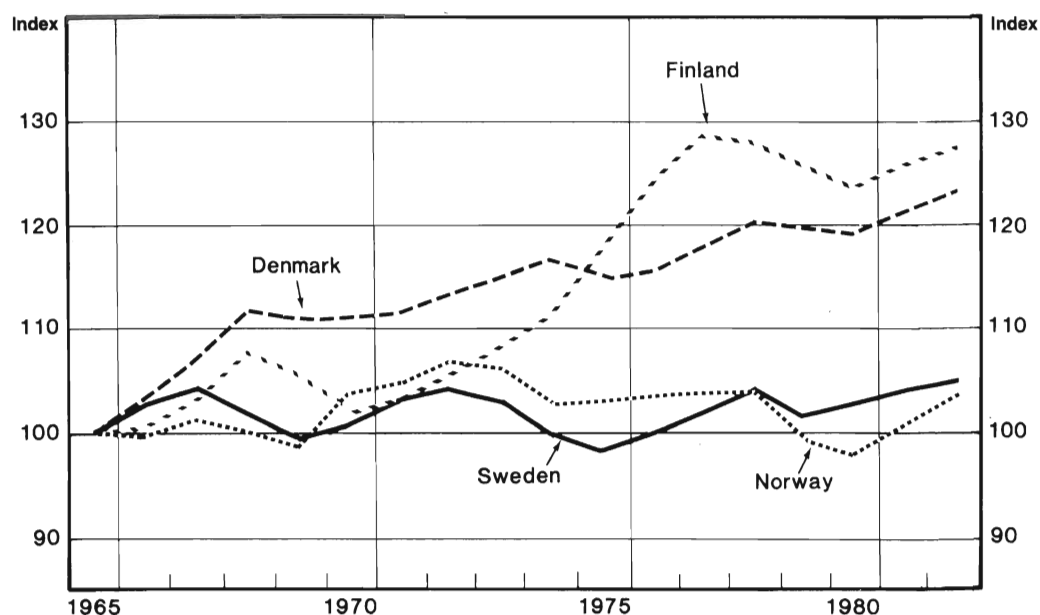
3.2 Exchange Rates and Inflation

Exchange rates are scales that transform all prices in one currency into prices in another currency. Exchange rates, hence, importantly affect relative returns to capital in different countries. The above conclusions on profitability are supported by an analysis of effective exchange rates among the Nordic countries (see the Special study 5 by Suni).

Effective real exchange rates reflect the time movement of unit labor costs. Both Sweden and Finland experienced a strong increase in real effective exchange rates in 1974 through 1976, that were brought down effectively, but temporarily, in 1977/78 by

Figure I:3C Consumer price inflation in the Nordic countries compared to that in the OECD, 1965–82

Index OECD = 100



Sources: Statistical Supplement and OECD, Economic Outlook, December 1983

way of currency devaluations, only to begin climbing again in 1979 through most of 1982 as the cyclical upswing, and its inflationary consequences made themselves felt. The late 1982 devaluations, especially the very strong Swedish one, brought effective real rates down to a very low value. From a traditional point of view, the competitive situation of Swedish industry for the moment appears favorable compared to that of the other Nordic countries. The important question is, however, how fast domestic inflation, generated by the devaluation, will cause a new round of cost overshooting.

Danish real exchange rates exhibit a similar but much smoother cycle. Norwegian effective exchange rates have been "high" throughout the 70s, mostly because of growing oil revenues. This situation may be considered one of the main reasons for the gradual "deindustrialization" of Norway that many believe they are observing (see the recent volume of Bergen conference papers that discusses exactly these problems).⁵

Keeping real exchange rates down – or rates of return in export industries up – by successive devaluation policies is an inflationary solution to economic growth. It works if income earners accept reductions in real income associated with the devaluations. The Finns have the experience that in the longer run it is not possible to improve the competitive position permanently through devaluations. The Swedes are beginning to learn by trial and error since the mid-70s and the final test will come in the wake of the large 1982 devaluation.

In the 70s, inflation has been higher in Finland and Denmark than the OECD average (see Figure 3C). In the beginning of the 80s, all four countries also devalued their currencies. Denmark carried out successive devaluations within EMS, except in connection with the last realignment vis-à-vis the ECU in the spring of 1983, when the Danish krone was slightly revalued. In Norway, the devaluations of August and September 1982 amounted to a total depreciation of the Norwegian krone of some 5-6 per cent. Sweden devalued 10 per cent in the fall of 1981 and again 16 per cent in October 1982. Finland devalued 4 per cent in October 1982, a few days before Sweden, but when the Swedish devaluation turned out to be as large as 16 per cent, Finland added another 6 per cent. It appears as if Finland and Sweden have entered a vicious devaluation-inflation circle, which may be difficult to break. It is extremely important that excess demand and inflation are not allowed during the current business upswing. Because of the present undervaluation of the Swedish krona and because of its importance to the other Nordic countries, a revaluation might help to prevent the acceleration of inflation in Sweden and also help to alleviate the inflationary tendencies in the other Nordic countries.

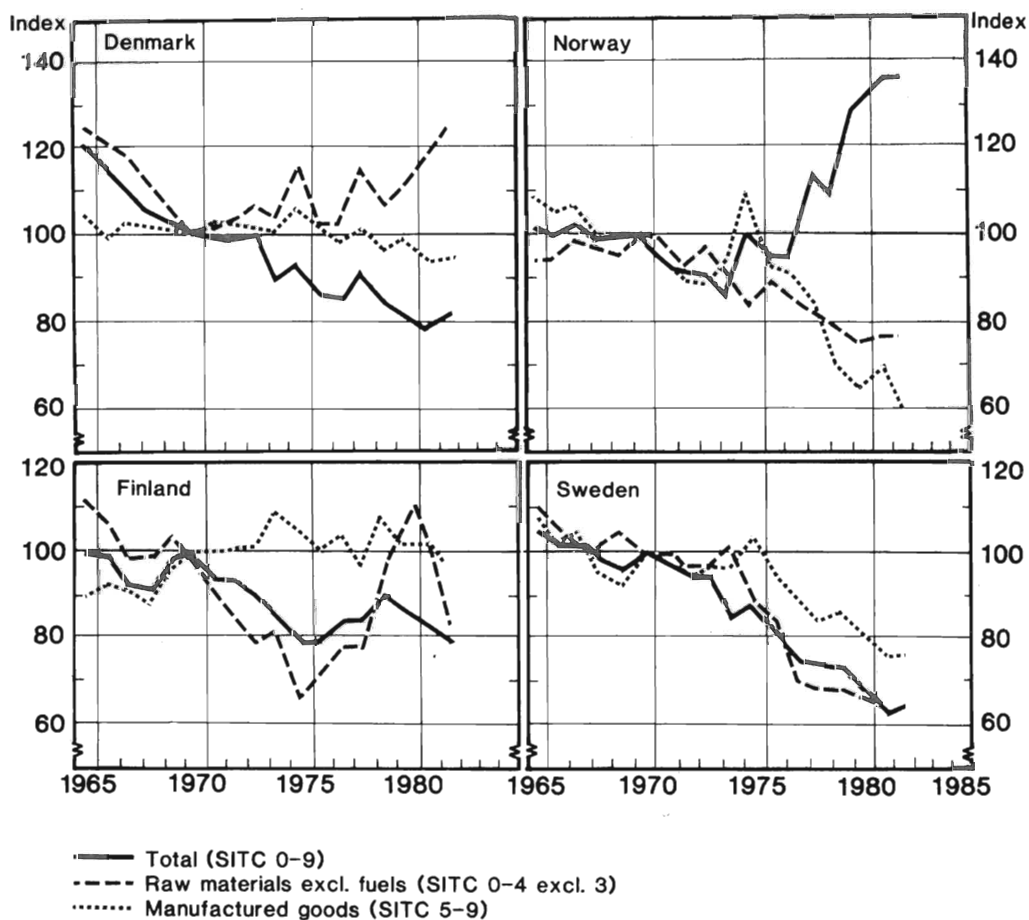
The development of real effective exchange rates exhibits large fluctuations in the competitive position, which is an important variable for small open economies. Since many industries are price takers in international markets, changes in the competitive position are reflected, not only in exports, but also directly in the profitability of the exposed sector. The Swedish experience of extreme cost overshooting after 1974 is perhaps the best illustration of this. The market shares lost **then were not** regained by 1982 (Special study 6 by Horwitz).

The medium-term strategy of the new Danish liberal government in solving the problems of a deteriorated competitive position has been exactly opposite to that of the new Swedish social democratic government; the Danes have tried to establish the necessary changes in the real income by tight incomes policies, not by devaluations. This difference should be recalled when we compare the forecasts in Section 5.

3.3 Market Shares

A dominant market share of a company is normally associated with some degree of monopoly power and the possibility to exploit economies of scale, and hence a relatively superior profit performance. This analogy does not automatically carry over to aggregate market share analysis, even though the ability to support a stable or increasing

Figure I:4 Nordic countries' shares of imports to the OECD market, 1965–82
Index 1970 = 100



Source: Horwitz, Special study 6 in this volume

aggregate market share in the international markets is conventionally taken as an indicator of competitive strength of the industry. In fact, however, this measure only picks up the ability of an industry to ship goods profitably abroad at the same rate as transactions grow in foreign markets. The analysis in the Special study 6 (by Horwitz), however, more or less supports the conclusions already drawn. This is illustrated in Figure 4.

Norway has gained considerable market shares in total exports. This is, however, all due to rapidly increasing oil and gas exports. On all other counts, Norwegian manufacturing firms have been losing pace fast in the 70s, compared to world trade.

Denmark did not increase market shares in total exports before 1980-82. The post 1980 development is due to a considerable improvement in international competitiveness. In addition to that, one could also point to the emergence of a diversified, highly competitive cluster of relatively small high technology firms. The "points of departure", i.e., the original geographical distribution and composition of Danish manufacturing exports, however, do not by themselves appear to have exerted a positive effect on export developments.

Finland has had a larger part of its industry in the slow-growing basic materials markets, but has, nevertheless, performed reasonably well there, gaining market shares in manufacturing up to 1980.

Sweden, on the other hand, has had its industries concentrated in the relatively fast-growing markets for engineering products and in stagnating natural resource-based industries, but manufacturing has, nevertheless, lost in terms of market shares.

Much of this diverse development can be explained in terms of the relative cost development. This takes the explanation back to profitability and the question why relative prices and productivity performance has produced the divergent profitability pattern. **Sweden**, for instance, experienced a tremendous (wage) cost overshooting in the wake of the 1974 inflationary boom in raw materials prices. This took rates of return down to an all time low in 1978 (cf. Figure 3A). Market shares continued to decline and have only recently begun to increase, after the large currency devaluation in October 1982.

Finland experienced as well a similar cost overshooting around the middle of the 70s. With very tight economic policies and a downward adjustment of the exchange rate, the Finns managed to restore their competitive position relatively fast (also cf. rates of return in Figure 3A). Market shares soon began to climb again, but control of domestic costs in foreign currencies was only achieved at the expense of a considerable increase in unemployment. Recent developments exhibit again a decline in competitiveness due to cost overshooting.

Table I:2 The 10 largest commodity groups in Nordic foreign trade 1980

Per cent of country exports

Within brackets share of high technology products in exports are shown, if share larger than .25 per cent

2-digit SITC	Denmark	Finland	Norway	Sweden
01 Meat	14.2			
02 Dairy products	5.5			
03 Fish	5.0		4.2	
21 Hides	2.8			
24 Wood		10.4		4.3
25 Pulp		6.6		4.6
33 Oil		4.1	34.1	4.0
34 Gas			14.2	
52 Inorganic chemicals			(0.6)	(0.5)
54 Medical and pharm. products	(1.9)	(0.4)		(1.0)
56 Artificial fertilizers			1.4	
58 Plastics				
63 Cork and wood manuf. (excl. furniture)		3.8	1.9	
64 Paper		22.6	3.5	9.7
67 Iron & steel		3.8	4.0	7.4
68 Nonferrous metals			8.6	
69 Manuf. of metals				3.9
71 Power generating machinery	(0.8)			(0.8)
72 Special machines	4.3	3.5		5.1
73 Metal working machinery	(0.4)			(0.8)
74 Indust. machines	6.8 (1.8)	3.7 (0.8)	1.9 (0.4)	7.6 (1.1)
75 Office machines and data processing equipment	(0.2)		(0.4)	(1.4)
76 Telecommunications equipment	(1.7)	(1.5)	(0.7)	(3.7)
77 Electrical machines	3.2 (1.9)	(1.8)	(0.7)	3.8 (1.9)
78 Road vehicles	(0.7)	(0.7)		11.8 (7.9)
79 Other vehicles	2.8 (0.5)	3.5	4.9	
82 Furniture	3.1			
84 Articles of apparel and clothes accessories		5.1		
87 Professional and scientific instruments	(2.0)	(0.8)	(0.7)	(1.4)
88 Photographic and optical equipment, etc.				(0.3)
89 Misc. manufact. articles	4.5			
Total exports	52.2	67.2	78.7	62.2
Billion \$ (1980)	15.9	13.7	17.7	29.9
Thereof high technology exports	1.9	0.9	0.7	6.4

Note: High technology products (sectors) are defined as in Competitiveness of European Community Industries, OECD, Paris 1982

Sources: Leskelä, Statistical Supplement in this volume and National Accounts Statistics

A similar situation characterizes **Denmark**, where a deteriorating external balance and growing public deficits have forced a tight policy regime on the nation. The Danish krone still seems to be overvalued despite a downward adjustment in 1979–81. Cost overshooting in the middle 70s still appears to be the main cause. Industry, as a consequence, has been under (cost) pressure to improve performance and to reduce redundant labor.

Oil and gas resources place **Norway** in a special position. Oil income exercises an upward pressure on the currency, which is obviously overvalued if related to performance in the manufacturing sector. At the same time it is difficult for the government, receiving the bulk of oil income, to exercise both the appropriate tight policies needed to contain consumption growth and to transform oil proceeds into a well allocated capital accumulation path in manufacturing.

On the whole, the Nordic experience emphasizes the conclusion that policy control of the domestic price system, notably the labor market, was the prime vehicle for regaining control of the economy in the period following the first oil price shock.

3.4 Summing Up on the Competitive Situation

The Nordic industrial scene exhibits areas of supreme industrial performance but also significant pockets of problems. If we measure industrial competence by the tests of international markets, we find sizeable parts of **Danish** and **Swedish** foreign trade allocated in very sophisticated manufacturing activities. Denmark still retains a large fraction of its foreign trade in agricultural-related products. Swedish industry still has a strong foothold in forest and iron ore-related products, even though the relative share of such exports has declined sharply in the last decade. Table 2 reveals (see Leskelä in the Statistical Supplement) that new, high technology product ranges are being developed in advanced instruments, electronics, telecommunications and in fine chemicals and pharmaceuticals. These two countries also exhibit sizeable gross flows of high technology goods, which should be normal for advanced industrial nations. Only Sweden, however, has a surplus in such trade, and a sizeable one, just above 7 per cent of total exports (see Table 4).

Looking at the institutional structure in the manufacturing sector (see the Special study 1 by Oxelheim). Danish industrial competence seems largely vested in fairly small firms. A few large firms belong to the fast-growing high-technology firms, but most of the ten largest Danish firms form a declining group.

Sweden has quite a collection of industrial giants even by a world standard. The ten largest Swedish firms, measured by value added (Volvo, Electrolux, Ericsson, ASEA, Saab-Scania and five more), contribute to 33 per cent of manufacturing value added, and 26 per cent of manufacturing employment in Sweden and as much abroad and indirectly pull along about 5 per cent of the entire industrial labor force (cf. chapter VI on Sweden). The large Swedish firms mostly dominate major parts of their world markets

and enjoy considerable economies of scale in product development, production and in marketing. They have grown substantially faster than the manufacturing average in terms of production.

On the whole, the Nordic industries are endowed with a broad range of international industrial competence. The relative stagnation of the Swedish industrial sector has to be explained by other factors. The most important factor appears to be the industrial subsidy program of the 70s, that has conserved an obsolete industrial structure with a high proportion of industries in decline. Swedish studies indicate that such a policy has negative effects on industrial growth.⁶ However, when we remove the subsidized firms from statistics, a much more expansive industrial sector appears (see Swedish country chapter VI and the Special study 3 on Industrial Subsidies by Carlsson). The same stagnation of manufacturing output cannot be seen in the Danish and in the Finnish industries which have both allowed the structural adjustment process to continue through the 70s. Stagnation in manufacturing output is, however, apparent in Norway, which has spent a considerable portion of its oil income to protect declining industries.

The Nordic scene, thus, presents ample industrial opportunities if the economies can be organized to exploit them efficiently. The exploitation of that industrial competence has, so far, mostly been directed outwards in terms of joint ventures and expansion of production facilities outside the Nordic economy. However, taken as a whole, the Nordic economy represents a large, untapped resource of human and industrial competence if only the necessary reorganization of institutions and structures could be accommodated – which is a policy problem – and if the investment resources were made available at the right place.

3.5 Capital Market Allocative Efficiency

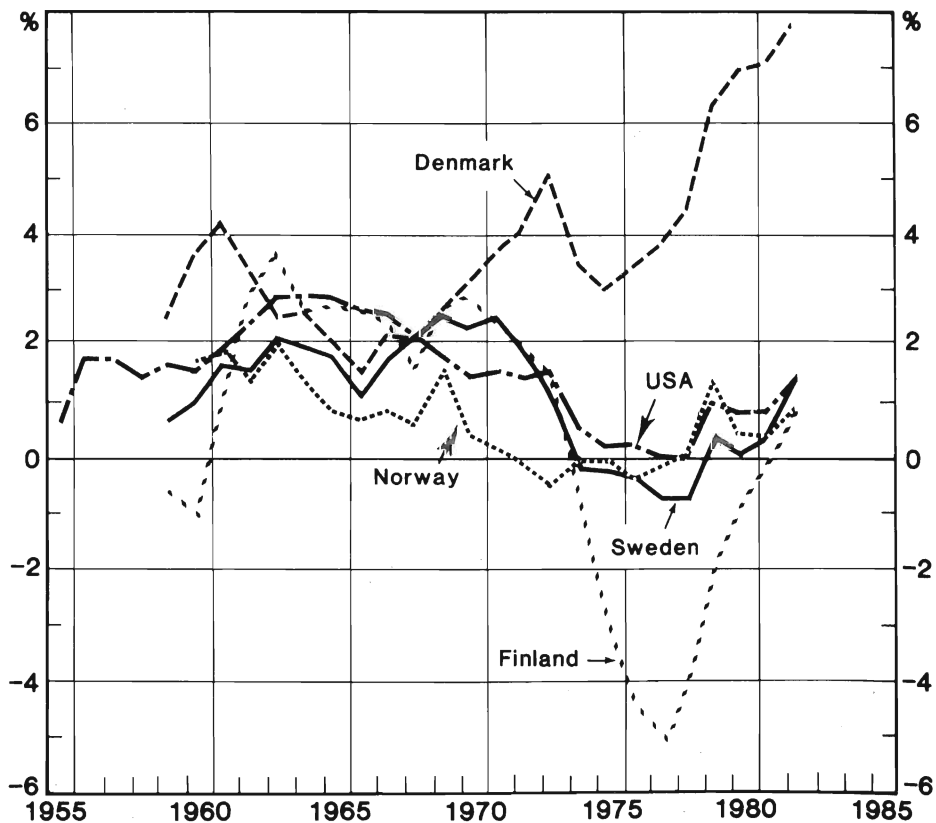
A growing financial interdependence with the rest of the world has placed the very regulated Nordic domestic credit markets in the midst of the international financial arbitrage process. Three things stand out prominently.

First, since the 50s, financial developments hastened during the 70s, have forced domestic Nordic interest rates towards – or in the case of Denmark above – the international interest rates. This situation is most pronounced in the case of Denmark, due mainly to a very tight monetary policy, its balance of payments problems, its less interventionist credit policies and in recent years perhaps to some extent to the rapidly growing public debt. But it is rapidly becoming true also in Sweden because of its increasing international indebtedness (see Figure 5A). This has meant an increase in the real rate of interest.

Second, while monetary authorities in Finland, Norway and Sweden have tried to hold back that development, the Danish authorities allowed the international interest rate to enter their financial system more freely.

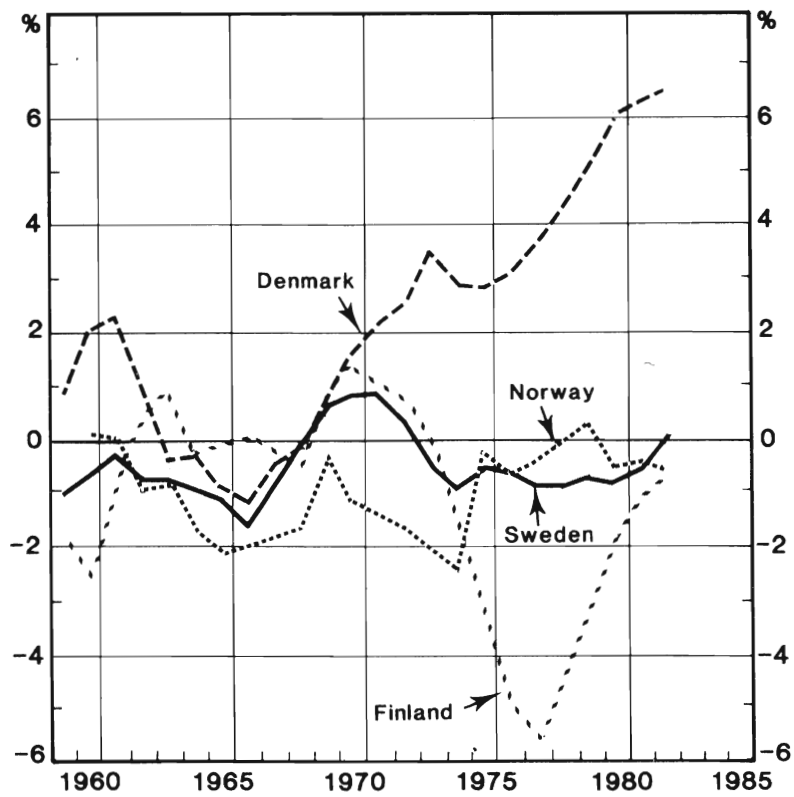
Third, the rate of return performance of Nordic industries was high enough on the margin, and on the average, for the bulk of industries to clear the higher interests with a good margin up to the end of the 70s. The relatively higher interest rates in Denmark for the last 20 years may have curbed investment spending in manufacturing somewhat, but it is doubtful whether they have also curbed growth in output. It may rather be so that cheap, below market rate credit in other countries "enhanced" by extensive inflationary expectations after the "oil crisis" contributed to a deteriorating allocative performance in manufacturing, and the later erosion of rates of return, at least in Sweden and Norway, that can be seen in Figure 3A.

Figure I:5A Real interest rates (before taxes) in the Nordic countries and in the U.S., 1955–82
5-year moving average. Per cent



Sources: OECD, Historical Statistics and Main Economic Indicators

Figure I:5B Differences between Nordic bond rates and the U.S. bond rate, 1959–82
5-year moving average. Per cent



Sources: OECD, Historical Statistics and Main Economic Indicators

4 PROBLEMS OF ECONOMIC BALANCE

4.1 Introduction

The **Danish** reputation abroad has long been that of an economy with severe economic problems including a large external debt and a high and growing unemployment rate. Close inspection of the manufacturing sector, however, exhibits a picture of considerable economic health and vitality. The manufacturing sector in Denmark is, nevertheless, too small to support the standard of living currently enjoyed by the Danes and at the same time to offer sufficient employment opportunities to the rapidly increasing labor force. Whichever way we look at the Danish economy, the explanation of the economic problems has to be looked for primarily outside manufacturing.

Among the four the **Finnish** economy has been the fastest growing in the 70s in terms of manufacturing output. Even though a larger part of its industries is positioned in slow growing, or stagnating, markets for basic products, Finnish manufacturing has expanded at satisfactory returns to capital.⁷ The unemployment rate is higher than in Sweden and in Norway. Net foreign debt in relation to GDP is still high but not growing.

The **Norwegian** economy appears to be a very prosperous machine at a first superficial inspection. Open unemployment is low. The main long-term Norwegian policy problem is to transform oil wealth into industrial competence and wealth. This, however, is a question of several decades rather than a few years.⁸ For the time being, a tendency towards a rapidly growing consumption, mostly through the public sector that receives the bulk of oil revenues, appears to be the most visible result. Instabilities are latent and can be best illustrated by the question: What will happen if real oil prices are reduced drastically, suddenly and permanently? Foreign debt in Norway is high by some measures, but declining. Foreign debt furthermore has, to a large extent, been used to finance the large, offshore investments, that are beginning to pay off handsomely. However, manufacturing performance is dismal, due to unsolved structural problems.

The **Swedish** economy appears to be afflicted with every possible ailment of a mature welfare economy, and the low unemployment rate only confirms this diagnosis. Closer inspection, however, adds the necessary nuances to this simple picture. In Sweden, about one third of unemployment is hidden through various kinds of labor market programs. Not all labor on such programs would, of course, become unemployed if the programs were terminated, but a reasonable adjustment for the net increase, that would occur, puts the Swedish unemployment rate almost at the Danish level and above the declining Finnish unemployment rate. Attempts to curb public recruitment to bring public spending in line with public income have been producing an upward drift in the open unemployment rate for some time.

In Norway and in Sweden, a substantial part of artificial job creation in industry has been through industrial subsidies (see the Special study 3 by Carlsson). There is every reason

to expect that the factor price effects of these subsidies at least do not contribute to expansion in the rest of industry. Inferior industrial or technical performance at least does not hold Swedish industrial growth back. As with the Danish economy, the problems of the Swedish economy appear to reside mainly outside the manufacturing sector.

The Finnish policy makers have followed a middle conservative road attempting to facilitate a post-oil crisis structural adjustment need. The traditional Finnish way of correcting a domestic cost imbalance through a devaluation was used in 1977/78 and again in 1982. As a consequence of tight economic policies in the middle 70s a larger share of the adjustment since then has been taken in the form of unemployment.

On the whole, with the exception of Norway, which currently experiences a fortunate position, the "disequilibrium" problems of the Nordic economies have to be explained by factors and decisions taken outside the manufacturing sector. These other problems are exhibited if we look at the various macro balance factors of each economy in turn.

4.2 Public Debt

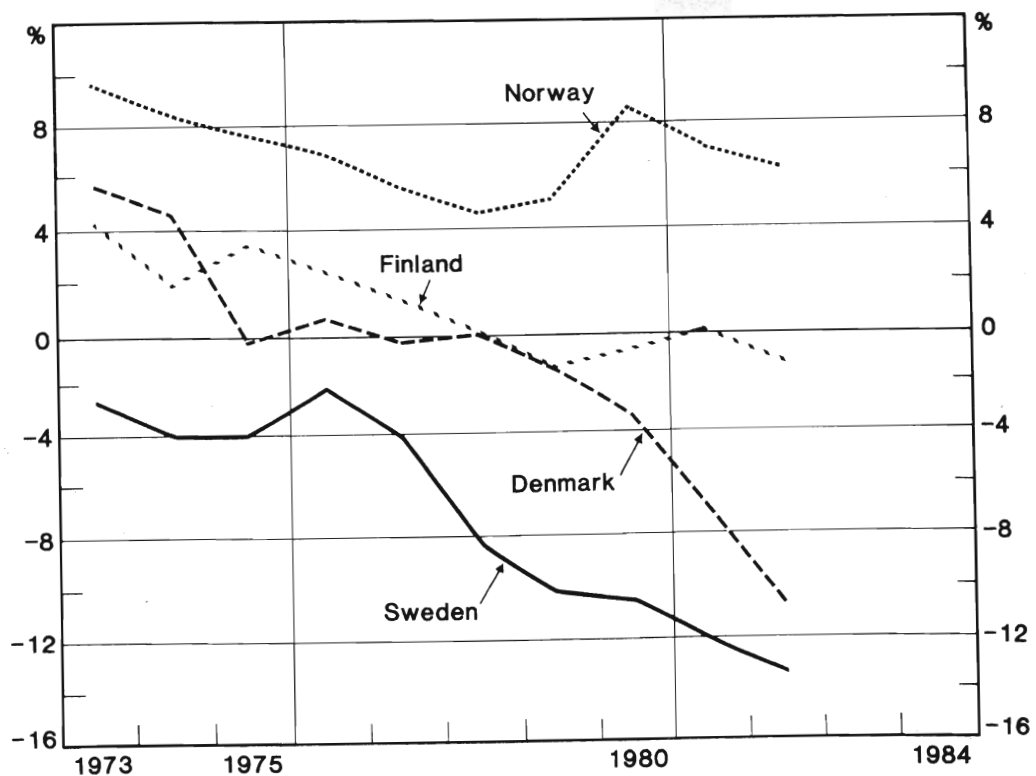
Traditionally, the public sectors of all four countries have been net positive contributors to total net savings. In Sweden, huge supplementary pension schemes contributed to a large increase in savings throughout the 60s. The seventies brought change also to this situation. After 1973, net public saving in per cent of GDP began to decrease. At the same time, the private sector swung into a savings' surplus, due mainly to a decrease in the investment ratio, mainly in construction and in manufacturing. In some cases the turnabout of sectoral financial balances was also matched by an increasing net contribution to savings from abroad.

Opinions between economists differ as regards the causal relationships between these changes in fiscal balances and the changes in the real economy which they reflect. (Cf. the country chapter III on Denmark.) It seems to remain a "fact of life", however, that irrespective of how economists tend to look at these matters, the fight against public fiscal deficits has become a "political issue" of the first order of magnitude. On the other hand, it also remains an economic fact of life that, bringing the national economies back to a faster growth path, represents by far the most efficient long-term way of reducing public deficits.

In **Sweden**, by 1980 huge and growing deficits on public (state and local government) account turned the decreasing net contribution from the public insurance system into the red (Figure 6A). Deficits have continued to grow ever since and reached almost 13 per cent of GDP by 1983. Rolling the public sector back into the black is the main, declared economic policy objective today. To accomplish that, excepting a renewed and sustained export-oriented expansion, major cut-backs in social programs, labor market programs and industrial subsidies are required.

The **Danish** economy has followed a similar trail into even larger public deficits from the beginning of the 80s. The investment ratio (GDP level) fell drastically after 1973. This was especially the case for construction and private investment because of the high real interest rate. The household financial savings ratio remained constant. The entire private sector swung into (financial) surplus. However, the public sector rapidly plunged into deficit after 1978 because of declining tax revenues, the high interest payments and the growing unemployment benefits.

Figure 1:6A Central government budget balance in the Nordic countries, 1973–82
Per cent of GDP

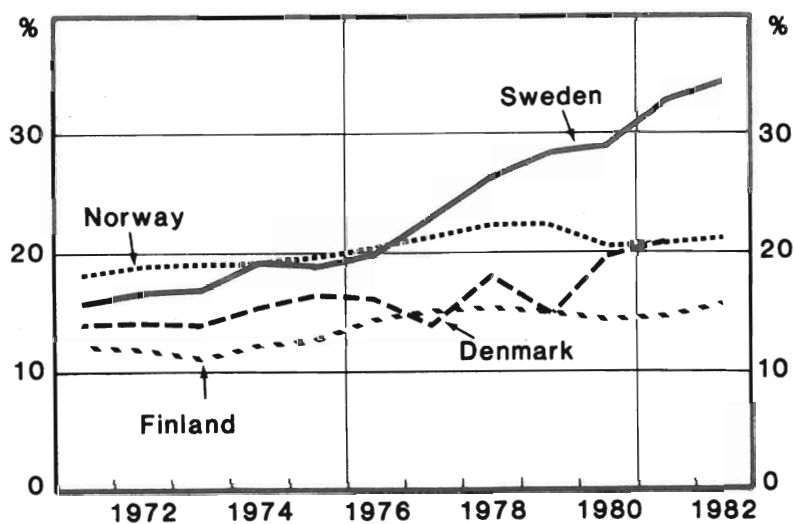


Source: Statistical Supplement

Finland has, so far, managed reasonably well to contain a public indebtedness and the reason appears to be the enactment of policies of the kind Swedish and Danish authorities are now trying to carry out.

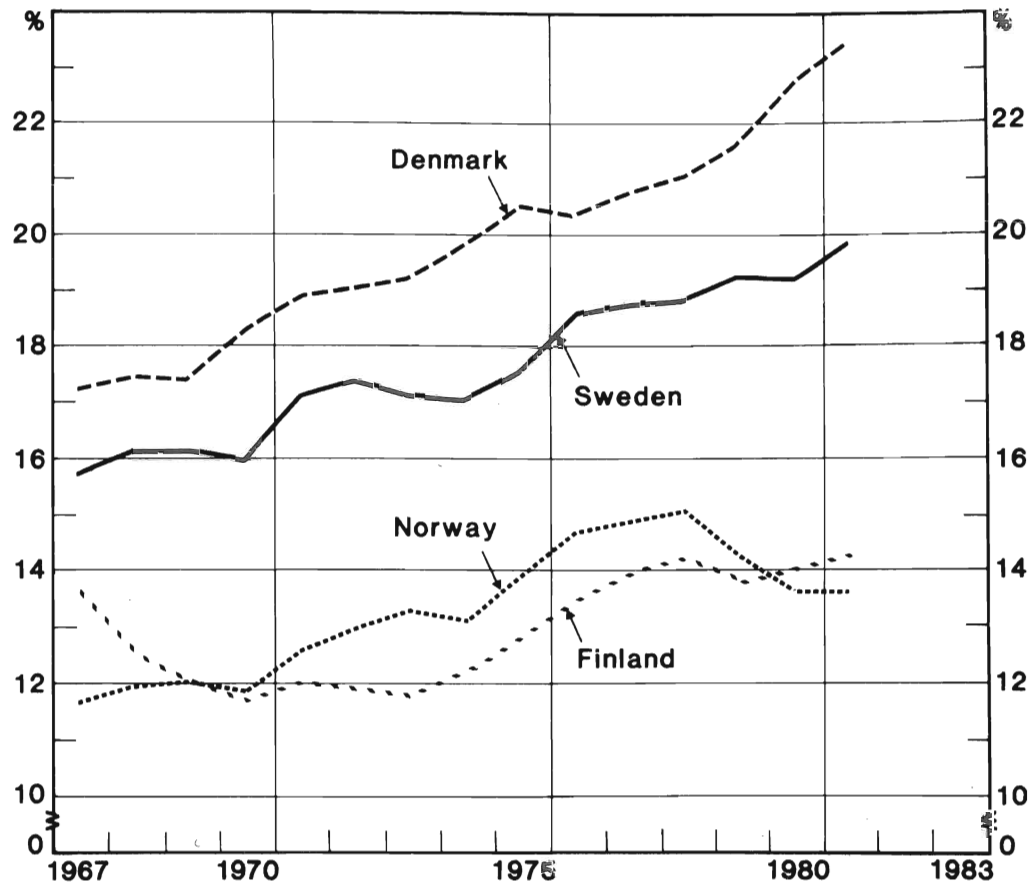
Norway plays a different role in this particular context. Some 20 per cent of government revenues originate in the North Sea. (This figure was almost zero 10 years ago.) While Swedish public sector growth has been more or less financed in the international credit market, Norway has had access to a huge raw material rent with an increasing cash flow. There has been no urgent deficit problem on public account.

Figure I:6B Transfers to household and private sector in the Nordic countries, 1971-82
Per cent of GDP



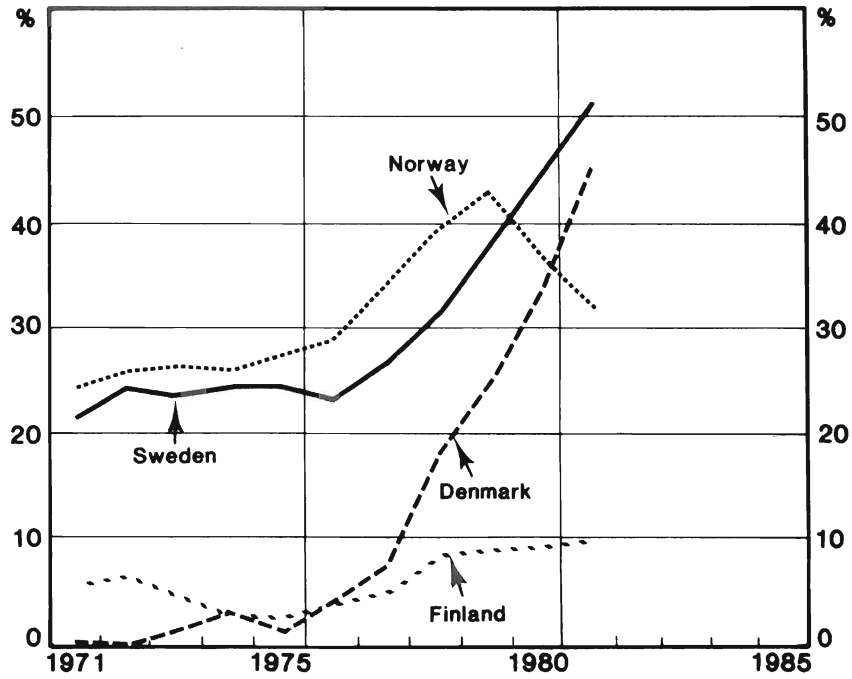
Source: Statistical Supplement

Figure I:6C GDP share of the public sector in the Nordic countries, 1967-81
Per cent of GDP



Source: Statistical Supplement

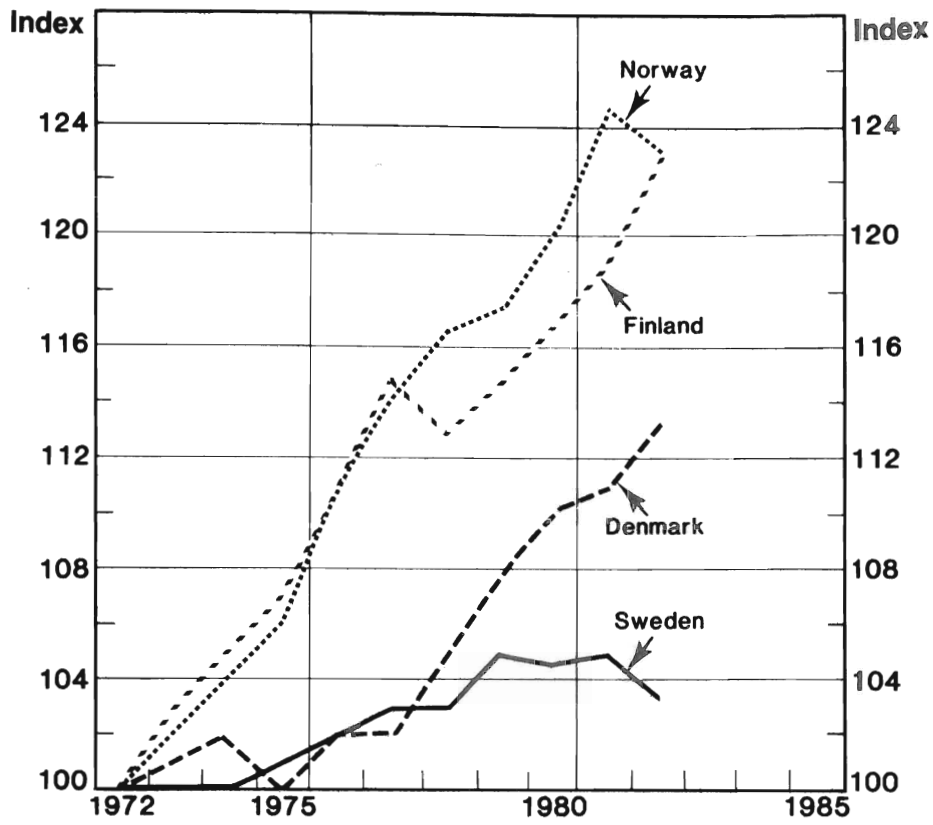
Figure I:6D Public debt in the Nordic countries, 1971–81
Per cent of GDP



Sources: Statistical Supplement and Yearbook of Nordic Statistics

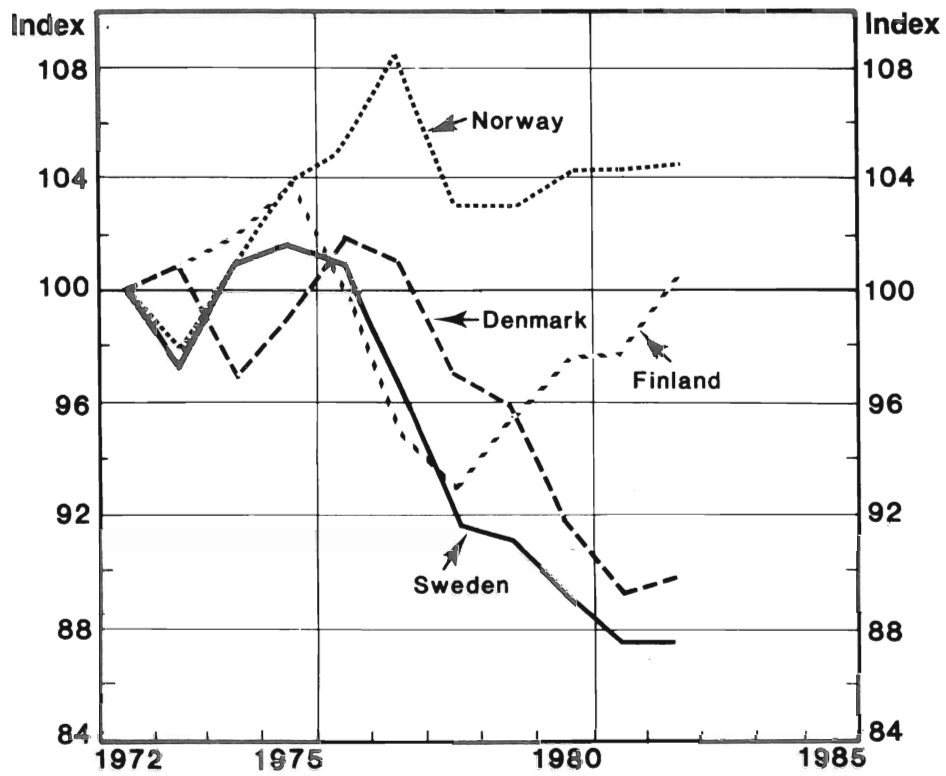
Figure I:7A Public consumption in the Nordic countries compared to OECD, 1972-81

Index OECD = 100



Sources: OECD, National Accounts

Figure I:7B Private consumption in the Nordic countries compared to OECD, 1972-81
Index OECD = 100



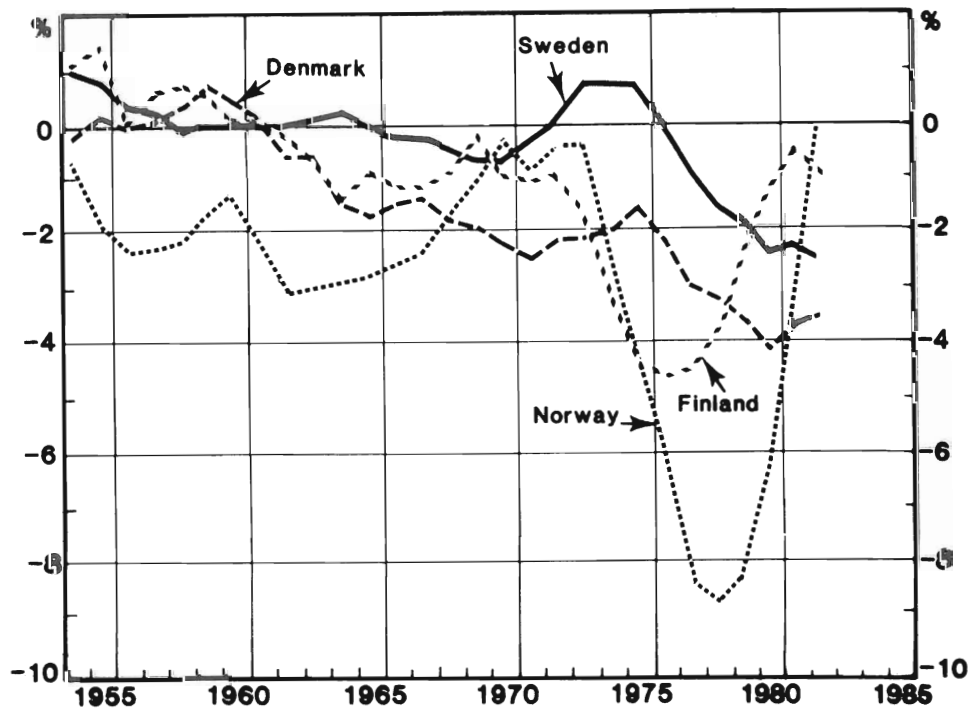
Sources: Statistical Supplement and OECD, Economic Outlook 1983

4.3 External Debt

Through the past 25 years or so, each Nordic economy has been characterized by an increasing international indebtedness, originating in persistent deficits on current account, but for different reasons.

Denmark has had a large current account deficit since the beginning of the 60s and, hence, entered the 70s with a foreign debt just above 10 per cent of GDP (Figure 8B). The oil shock of the 70s just about doubled the current deficit (as a percentage of GDP) and foreign debt accumulation continued at a somewhat faster rate, to reach almost 33 per cent in 1982. It now appears to have stabilized and is probably even declining as a percentage of GDP.

Figure I:8A Current balance in the Nordic countries, 1954–82
Per cent of GDP, 5-year moving average

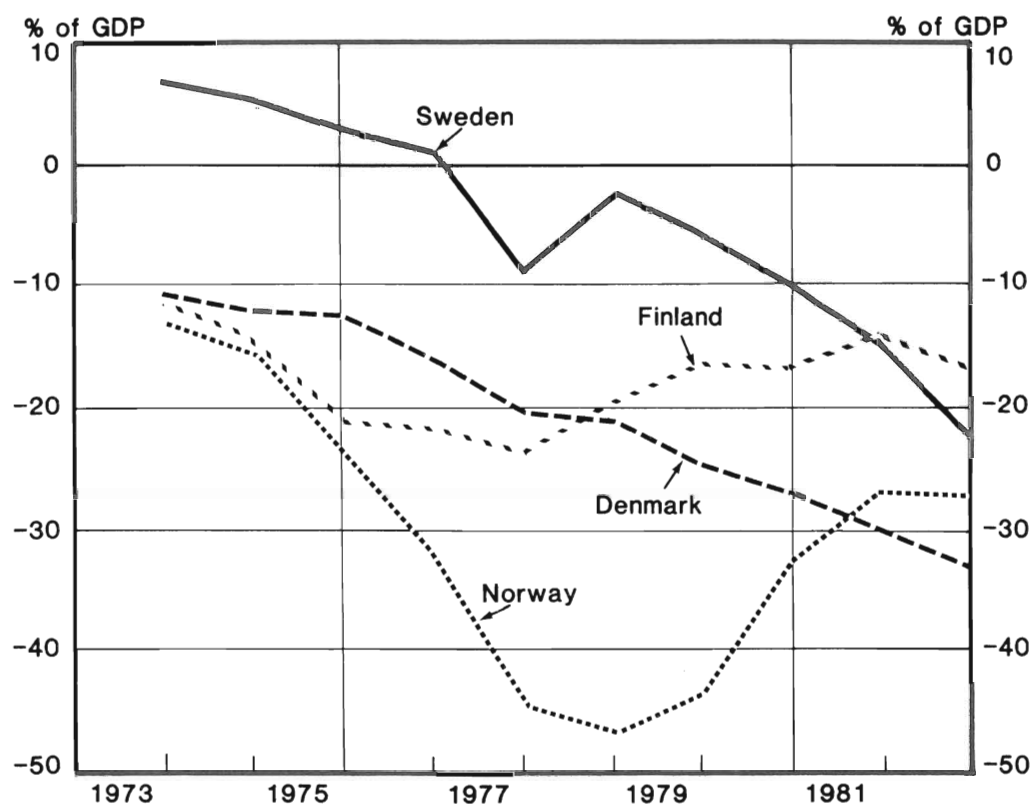


Source: Statistical Supplement

Rapid **Finnish** output growth has been paralleled by a current deficit and foreign debt creation. Also Finland entered the 70s with a foreign debt around 10 per cent of GDP, to reach above 22 per cent in 1977. Since then, a relatively good export performance and the curbing of domestic demand and imports through tight policies have allowed a reduction of the Finnish foreign debt to 17 per cent in 1982.

Also **Norway** has had a deficit on current account balance since the 50s and entered the 70s with a foreign debt above 10 per cent. Since the middle of the 60s, however, North Sea offshore investment and public borrowing accounted for the bulk of foreign debt creation that reached well above 46 per cent of GDP in 1978, then declined very fast as North Sea oil and gas fields began generating revenues. The debt was 26 per cent in 1982.

Figure I:8B Net foreign assets in the Nordic countries, 1973–82
Per cent of GDP



Source: Statistical Supplement

Sweden has had an exceptional development in this respect. Its foreign accounts had been roughly in balance since the end of the war. Sweden's large foreign manufacturing sector meant a net (positive) asset position of some 8 per cent of GDP by the late 60s. The years following 1973 witnessed a dramatic deterioration of that comfortable position. Huge deficits on current account began to develop as stagnating exports were not matched by a corresponding adjustment of consumption and imports. Foreign debt creation accelerated through the 70s and total debt is currently (1982/83) in the neighborhood of 22 per cent of GDP.

One obvious consequence of this development is an increasing dependence on the world markets for finance, and a rapidly narrowing scope for independent domestic policy action. We have already noted above that there has been an upward pressure on domestic interest rates. Financial integration of the Nordic countries with the rest of the world has also continued through rapid debt creation. In Denmark, and during recent years in Sweden, interest payments abroad are taking an increasing share of export revenues. An interesting question to ask is whether a growing external debt ratio to GDP eventually forces the country to keep the domestic loan rate above the corresponding world market rate.

5 OUTLOOK TO 1987 AND BEYOND

After a recession of almost three years, recovery has begun among industrial countries. Growth is not expected to be very rapid, however, and most observers expect severe unemployment to persist. We project GDP of the OECD countries to grow at an average annual rate of 2.5 per cent from 1982 to 1987. Since the European member countries have exhibited a slower post 1973 structural adjustment than has the U.S. and Japan, a slightly lower growth rate is projected for Europe. The projection rests on the assumption that oil prices will stabilize in real terms on the lower level reached in 1984 through 1987. There will be some, but no excessive, further developments towards protectionism and world trade of manufacturers will grow at 4 per cent per annum from 1983.

Inflation is expected not to resume again and average 6 per cent through 1987. The real world market interest on long-term borrowing is expected to come down to a 3 per cent average for the period, which, as far as can be judged, is somewhat above that of the 60s (see Chapter II). For practical forecasting purposes we are assuming that the market processes of the industrialized world will return in a disciplined way to normal by the end of the 80s. We are assuming no changes in real exchange rates, no external or internal shocks, no significant attempts to speed up economic growth through expansive demand policies, compared to what the ongoing endogenous machinery will accomplish. Hence, the unemployment situation in the industrialized world will remain distressed until the end of the decade and even worsen for an intermediate period.

Growth rates in the Nordic area is currently (spring 1984) running well ahead of the average for Western Europe. A boomlet in basic export industries and improved competitive positions in **Sweden** and **Denmark** are propelling the upswing that started already in the fourth quarter of 1982. Denmark is benefiting from its well adjusted supply structure, a result of a tough industry restructuring program during the late 70s and early 80s. Together with **Finland**, where economic policy was quite expansive in 1982 and 1983, Denmark is the only Nordic country, where domestic demand has been growth engine in 1983. Finland, on the other hand, is currently shifting emphasis in policy towards restricting domestic demand to free resources for exports to western countries. Stagnating oil prices mean that the bilateral trade agreement with the Soviet Union will not stimulate future exports to the same extent as earlier.

Norway is also attempting to restrain domestic demand to trim generous public spending to stagnating oil revenues – the major single source of public income.

All four Nordic countries have trouble in curbing public spending and, except Norway, are experiencing continued disturbing foreign debt accumulation.

Little concern so far has been voiced on what to do when the cycle swings back and about the recent profit boom in basic export industries. Will it – as in 1974/75 – create strong wage over-shooting in the economy and a premature collapse of the cycle? A

critical question, especially for Sweden, is whether OECD growth tendencies will be sufficiently strong to generate a significant investment cycle that helps engineering exports. Our forecast suggests that the OECD investment cycle will show up, but be fairly weak.

The stability of economic expansion on the Nordic scene depends largely on success in curbing inflationary tendencies. Inflation in all countries has been running at rates somewhat above the OECD average (see Figure 3C) and will continue to do so (Table 3B). Denmark expects to be more successful than the other Nordic countries in returning the economy to low inflation growth, however at the cost of persistently high unemployment.

Output growth in the Nordic countries will fall to 2 per cent. Between countries there are significant differences, explained mainly by industrial structure and different initial conditions, but also from a variation in the relative importance of different foreign markets and trade commodities. In Norway, the growth of GDP is expected to be around 1.5 per cent on average; in Sweden and Denmark the growth figures are approximately the same as the average for the European industrialized countries, 2 per cent per annum. The Danish forecast, however, predicts a slower growth in the beginning, from 1983 to 1984, mainly due to an increased fiscal tightness. In Finland, GDP is expected to grow by almost 3 per cent per year.

Exports are the main growth factor in the Nordic countries for the rest of the 80s. There are large differences in prospects: the Swedes expect a nearly 6 per cent average growth in exports volume on the presumption that a very tight fiscal policy regime can be maintained. If not, inflation will take over and export performance will drop considerably already in 1985. The Norwegians expect exports to increase by 2.5 per cent per annum during the forecast period. In Finland and Denmark exports are expected to increase by 4 and 4.5 per cent per annum, respectively.

The optimistic Swedish export projection is explained by the large increase in "competitiveness" in 1981 and especially in 1982, due to the strong devaluation of the SEK, although most of this advantage will disappear through inflation during an early part of the prediction period. In Denmark, industrial competitiveness is assumed to improve during the period and it will affect exports favorably. The Finnish forecast requires that the competitive position must not deteriorate any more after 1984, especially as exports to the Soviet Union are not likely to contribute significantly to total exports. Stagnating manufacturing markets and no increase in the production of oil explain the Norwegian forecast.

Nordic private consumption will grow slightly faster than public demand during the forecast period. This, however, is mostly due to the outlook for Denmark, where private consumption is forecast to grow 1.5 per cent annually, while public consumption will not grow at all.

Table I:3 Summary of forecasts in the Nordic countries, 1982–87**Table I:3A Balance of resources and expenditure, 1982–87**

Average annual change in volume, per cent

	Denmark	Finland	Norway	Sweden	Total Nordic economy
Gross Domestic Product at market prices	2.0	3.0	1.5	2.0	2.1
Imports	3.5	2.5	3.0	3.6	3.2
Total resources	2.4	2.5	1.9	2.4	2.3
Exports	4.5	4.0	2.5	5.6	4.3
Investment	2.8	1.5	0.5	0.9	1.3
Consumption	1.0	2.0	—	0.8	—
private	1.5	2.0	2.0	0.7	1.4
public	0.1	3.0	2.5	0.9	1.4
Total Demand	2.4	2.5	1.9	2.4	2.3

Table I:3B Key variables, 1982–87

	Denmark	Finland	Norway	Sweden
1) Balance on current account, end of period, per cent of GDP	1.2	1.0	—	2.5
2) Consumer prices, average annual change, per cent	5.7	7.5	7.5	8.2
3) Key interest rates, deflated, per cent	5.1	—	—	2.0
4) Public sector deficit consolidated, end of period, per cent of GDP	4.5	1.0	—	7.0
5) Open unemployment, end of period (1 000)	379	134	85	220

Table I:3C Production, 1982–87

Average annual change in volume, per cent

	Denmark	Finland	Norway	Sweden
1) Manufacturing output	2.7	3.5	0.0	2.2
2) Manufacturing labor productivity	2.3	3.0	—	3.5
3) Investment in machinery and construction	3.6	3.5	—	3.7

In the three other countries, public consumption is expected to be the fastest growing domestic demand item. Here again, there are differences between countries: In Finland, public consumption will grow at 3 per cent per annum, in Norway by 2.5 per cent and in Sweden by 1 per cent only. The low Danish and Swedish figures are, in fact, policy assumptions: the size of the public sector is considered too large. The realism of these "assumptions" can, of course, be discussed. Reduced public spending will force the Danish unemployment rate up to 13–14 per cent by 1987, and even in the positive "growth scenario" the Swedish open unemployment rate will temporarily reach above 5 per cent by the mid-80s, mainly because reduced public spending will take the form of reductions in labor market programs and industrial subsidies forcing concealed unemployment into the open.

There is an alternative inflationary scenario for Sweden with a faster growth in public spending in the immediate future. It is labelled more likely even though it entails "Danish consequences" and a higher open unemployment rate on the 1987 horizon. The reason is that the unemployment situation will first improve, due to public recruitment, then deteriorate rapidly when deficits on external and public account grow out of hand, forcing draconic policy measures towards the end of our forecast period.

In Norway, the virtual absence of financial constraints in the public sector, due to oil revenues, will allow public expenditure to grow faster than GDP, while in Finland the share of the public sector is smaller. However, also in Finland the rapid increase in public debt puts a limit on continued relative expansion of the public sector.

Investments are expected to grow between 0.5 and 2 per cent annually in all countries except Denmark, where the forecast is nearly 3 per cent, and still higher for fixed investments in manufacturing. These low figures based on surveys to firms may reflect a cautious attitude of firms in the face of many uncertainties, and, hence, in retrospect turn out unduly pessimistic. On the other hand, our previous analysis has underlined three very important facts in understanding the Nordic growth prospects. Manufacturing investment spending is what is important for long-term growth in the capacity to produce and to export. The volume of aggregate investment spending in manufacturing as statistically recorded is, however, a bad indicator of capacity growth. The comparison between the Nordic countries has demonstrated that the allocation of investment spending on industries and firms cannot be neglected. Less aggregate investment, if better allocated, often means a faster growth in output capacity. Furthermore, a large part in Swedish industry probably more than 50 per cent of spending on capital account is in R&D spending and in marketing, and is not at all recorded in the national accounts data upon which our forecasts have been made.

The average rate of change of consumer prices is forecast to 6 per cent per year during 1983–87 at the international level. In Sweden and in Norway, inflation is expected to be faster: 8.2 and 7.5 per cent, respectively. In Finland, inflation will exceed international figures in 1983–84, but it is assumed thereafter to stay at the international level. Only in Denmark is inflation expected to be on line with, or slightly below, the average in

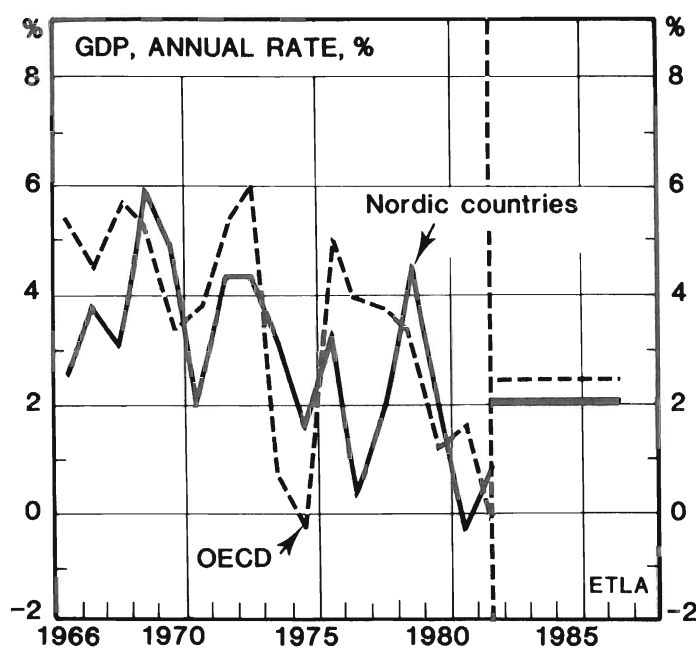
industrial countries, due to the tight policy program enacted to restore equilibrium in the economy.

The rate of open unemployment, nevertheless, is forecast to be 13–14 per cent in Denmark in 1987. The number of employed will increase, but the increase in the labor force will raise unemployment to almost 380,000 persons. The same is happening in Finland, although on a smaller scale, and the unemployment rate will be 5–5.5 per cent

Figures I:9A–9C Summary diagrams on forecast up to 1987 in the Nordic countries and in the OECD

Figure I:9A Average annual rates of GDP growth in the Nordic countries and in the OECD, 1966–87

Per cent

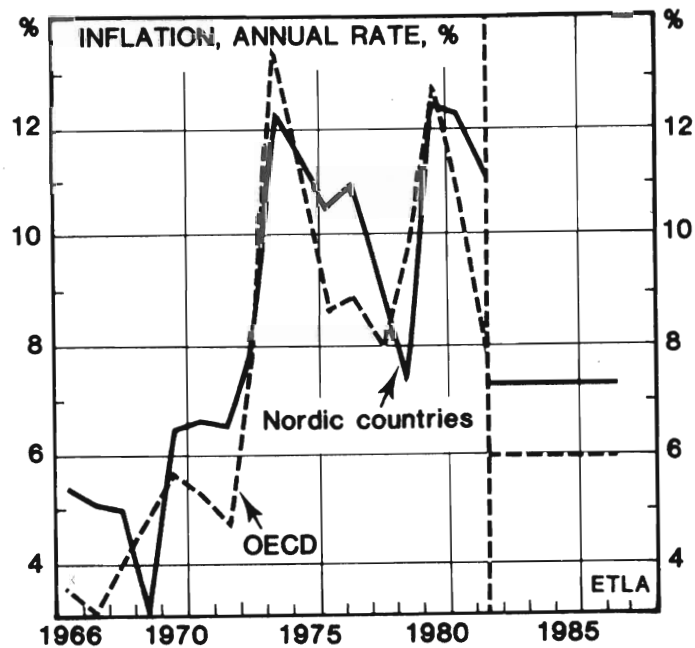


in 1987. In Norway, open unemployment will be 4 per cent on average in 1987. In Sweden, unemployment will be around 5 per cent in 1987 in the positive growth scenario that we apply. If the price system of the economy cannot be controlled, output growth will be reduced and open unemployment will be considerably higher by 1987.

In general, the Nordic economy as a whole will follow the economic development in OECD Europe on the average, and for the same reasons. The countries that control their internal price systems and restore price competitiveness in world trade will score best in terms of economic growth.

Figure I:9B Average annual rates of change in inflation in the Nordic countries and in the OECD, 1966–87

Per cent



The key question associated with steady state projections of the above type is whether they are realistic, or carry any meaning, in an economic world subjected to frequent disturbances. The answer is that there is no other way. We cannot forecast shocks of unknown nature. We can, however, discuss the preparedness of an economy if subjected to a shock, and its consequences. This is most pedagogically done when discussing the policy options of the Nordic countries. Can the Nordic countries do better relative to the world, or are they likely to do worse than projected?

Figure I:9C Rates of unemployment in the Nordic countries and in the OECD, 1966–87

Per cent of total labor force



6 POLICY OPTIONS

We begin by discussing the policy options associated with returning the Nordic economies to a more balanced situation in 1987 than the current state. These are positive scenarios requiring considerable discipline on the part of policy authorities. We conclude by some more gloomy reflections of what will happen if the world economic environment does not provide the steady-state inputs necessary for such a forecast and/or what will happen if the domestic Nordic adjustment process, especially prices, cannot be controlled.

Waiting for a world demand upswing

Our earlier discourse naturally arrives at two distinctions that have to be made in discussing policy objectives:

- that between the short and the long term,
- that between unemployment and economic growth.

The two distinctions overlap very much and the four Nordic countries illustrate the relative attention in recent policy making paid in these respects.

In Finland and in Denmark, relatively more emphasis than in Sweden and in Norway appears to have been placed on economic growth in the long term, however at the cost of a higher rate of open unemployment in the short term. This result also comes out clearly in the forecasts (see Section 5 above).

The implication of this observation is a couple of questions. Is it so that this policy choice has been explicitly made? Can we really formulate policies on the basis of such a simple distinction? Put more bluntly, would Swedish output growth in industry increase if Swedish policy authorities would choose an unemployment track?

The answer is, of course, no. There is no simple, causal relationship such that if you raise unemployment you obtain economic growth in the longer term. Neither can stagnation be all blamed on inflation. Among all, the factors that rule the allocation of labor and capital intervenes between the two macro variables. Neither employment nor capital investment spending can be understood without regard to their relative prices in the context of economic disequilibrium that characterizes the current situation. For this reason we have underlined the importance for long-run success of controlling the price system.

A very relevant question to ask, however, is whether one will really attain a higher growth rate in manufacturing in the medium and longer term, if one chooses growth promoting policies that lead to a higher rate of unemployment in the short term, and – even more

importantly – how long it will take for economic growth, when resumed, to generate enough employment to reduce unemployment again to an acceptable rate.

In the middle 70s Finland experienced a period of very tight policies and rapidly growing unemployment. These policies were implemented mainly because of a severe disequilibrium on current account. Since 1978 growth performance has been better than in other countries and unemployment has been reduced. It should be remembered, however, that a large part of the relatively good performance of the Finnish economy in recent years can be explained by the expansive policy stance and growth of exports to the Soviet Union under the bilateral trade agreement. The share of commodity exports to socialist countries increased from less than one fifth to about one fourth in a few years. Hence, it is difficult to evaluate how much of the development that can be explained by "successful adjustment". There is also the counter-argument that rapid growth in traditional sectors has postponed some of the structural problems that have already appeared in other countries.

In **Denmark**, on the other hand, a growing disequilibrium, first on external account then in the public budget, forced the authorities to curb both private and public spending early in the second half of the 70s though with a return to earlier trends, as far as public consumption is concerned, in the late 70s and early 80s. At the same time, a high growth rate in the labor force, due to rising participation rates has increased labour supply faster than demand for labor at the ruling prices. This situation is forecast to persist. Recently, fiscal policy has been even more sharply restrained.

The **Swedish** economy is about to enter the phase Danish policy authorities had to face towards the end of the 70s. That is, growth in public spending has to be trimmed down to avoid an escalating disequilibrium (external- and public deficits, inflation). This inevitably means higher open unemployment if a radical change in the level and distribution of real wages cannot be engineered.

The **Norwegian** situation is similar to the Swedish one, except in one important way. Access to the large oil revenues means that the external and public deficits technically appear to pose no immediate problem. The problem rather concerns the domestic inflation potential and the efficient use of resources. The situation could, however, shift dramatically for the worse, if a sudden drop in oil prices would occur.

For many observers the answer to the slow growth problem is that one only has to wait for a business upswing in the rest of the industrialized world. This may be a sufficient condition for Denmark and Finland. For Norway and Sweden, where supply structures are not well adjusted to the new world, competitive situation, a strong upward swing in the international business cycle will generate a much weaker business cycle response at the aggregate level, and relatively more inflation. Only the Danish and Finnish economies could expect strong positive effects from a strong international upswing. In the unlucky event of a fast and overheated international upswing, the Swedish economy may be in a very precarious situation, the authorities being unable to control the

domestic price system, due to the very large devaluation in late 1982 and very few efforts spent on making resources, notably skilled labor, available for growth industries.

This consideration makes it important to evaluate the Nordic policy options against the background of the efficiency and flexibility of its supply adjustment process, which also appears to be the policy problem.

Industrial policy and allocative efficiency

On the Nordic scene we can observe (at least) three policy movements, with implications for allocative efficiency:

- Wage and salary equalization
- Structure conserving industrial support programs
- Switching the consumption pattern towards less import-intensive consumption

The Nordic scene exhibits an even before-tax income distribution. Among the four, Sweden represents the extreme.⁹ In Sweden, at least, this appears to mean that unskilled labor has been overpaid with a consequent inability of the labor market to move labor by price (wage) signals. At the same time, two recent Swedish studies suggest (1) that among the four factors of production; labor, capital, energy and intermediate goods, labour is the most price elastic¹⁰ and (2) that the efficient allocation of labor is imperative for economic growth. The main negative effect of misallocation of investment is not the direct capital waste, but the fact that misallocated capital installations, if not allowed to go, continue to tie down skilled labor.¹¹

The most far-reaching misallocation scheme in that regard is the industrial subsidy program, most notably in Sweden. It in essence means providing finance at a negative price for commercially impossible activities. The extent of this is obvious from Carlsson's study in this volume (see Special study 3). Subsidies in Sweden amounted to almost twice value added in the shipyards for several years. Steel was being destroyed in the Swedish shipyards with the application of the highest paid labor in Swedish industry.

Norway exhibits a less extensive, but similar, and regionally more dispersed, picture.

Finnish and Danish industries, on the other hand, have received very little in the form of structure conserving subsidies. In Denmark, there is practically nothing of the firm specific subsidies, i.e., subsidies to specific firms in acute need, making up the lion's share of the Swedish kind of industrial programs.

Swedish studies indicate that such subsidies seriously hamper manufacturing growth. Thus an abandonment of those programs appears to be an important step in promoting growth in manufacturing. In Sweden this is a more pressing policy reversal than in Norway since there is no substitute source of wealth to industrial progress in the form of an abundant raw material source.

Recently, the Danes have tried a different approach towards resolving the external disequilibrium. Through taxation and public expenditure demand was for some years shifted relatively more towards public and less import-intensive demand. The opposite policy was, in fact, tried in Sweden during the post 1973 so-called bridging policy with strong cost over-shooting and disastrous consequences for Swedish exports (see the Special study 6 by Horwitz). In the short term, the Danish way gave rise to the desired effects, however, not in the longer term, and the Danes appear to have abandoned their demand switching policy on these grounds. It tends to distort the entire allocation system of an economy closely integrated into the world market. One of the effects is that when the "switch" period expires, and private demand is again relied upon as the prime mover, the new starting point will be one with a smaller capacity installed to produce commodities profitably for world markets than would otherwise have been installed.

A special case of policies with allocative effects if carried on over an extended period are incomes policies which aim at equalizing wages. All four countries carry out central negotiations in the labor market which is a form of incomes policies. Denmark, Finland and Norway have made use of incomes policies in the form of guidelines etc. In the short term, especially in Denmark and Finland incomes policies are reported to have produced the desired effects (see country chapters). In so far as these succeed in bringing more realism into wage negotiations and help in attaining a wage and salary structure better adjusted to the market, one would, of course, expect also long-run beneficial effects.

While wage guidelines are widely recognized as a useful element even of a long-term strategy, at any rate in Denmark and Norway, authorities and advisers in all three countries have strong reservations concerning permanent direct price and wage regulations because of the negative allocation effects. This has also been the reason for a generally sceptical view of such policies in Sweden, although incomes policies have recently been reconsidered in the current, distressed economic policy situation, to soften the trade-off believed to exist between unemployment and inflation, on the one hand, and inflation and economic growth, on the other.

What can Macro Demand Management Accomplish – The "Nordic Locomotive"

With a long-term perspective on the unemployment solution and no hope – except for the current economic upswing – for a return, soon, to fast international market growth, a natural question for policy authorities in the Nordic countries to ask is whether there is a local Nordic policy solution. Can coordinated Nordic macro demand management – the "Nordic locomotive" – create desired local effects among the Nordic countries?

In the earlier section we emphasized the need for an improved structural adjustment to world competitive market conditions for faster world demand growth, or (Nordic) demand management, to have desired local economic effects of any magnitude. An automatic return to broad-based economic growth in manufacturing is currently not to be expected in Sweden and Norway, if world demand happens to switch onto a faster growth path,

than we have assumed. This also suggests that Nordic macro demand management alone will not be efficient for these two countries.

What would happen if all four countries had adjusted their supply structures? The study on intra Nordic trade patterns supplemented (see the Special study 7 by Horwitz) indicates that a substantial volume of consumption goods produced within the four countries is also consumed within these countries. (Somewhat more than 50 per cent of exports of consumption goods in each country goes to another Nordic country.) A limited upturn in each country, hence, could be achieved from a coordinated stimulus of domestic demand.

If the stimulus is strong enough, it may even generate an additional indirect demand for investment goods that will benefit Swedish industry relatively most. However, a basic prerequisite for such a Nordic demand management to have more than minor immediate positive effects, is that it is organized in a non-inflationary way.

Second, an increase in the general level of demand will certainly lead to large leakages in the form of imports, and most probably a deteriorating external balance, everything else the same. Our numbers do not suggest coordinated Nordic demand management to be a viable policy option.

The Vicious Circle

It appears that the allocation of skilled labor is one of the most important growth factors. Misallocation of investment is normal in any business context, and no cause for concern if bad investments are abandoned fast. However, if bad plant investments are kept alive, then factor costs increase, labor is tied down in the wrong place and the rest of the economy is deprived of its services, especially that of skilled labor and new entrants in the labor market.

It is interesting to note in this context that Finland and Denmark have chosen to keep their unemployment open and – with the exception of some recent Danish job creation schemes, being heavily discussed in Denmark – abstained from creating artificial jobs within industry or within the public sector. Danish and Finnish industries have a relatively fast output growth on record despite large reductions in employment. Contrary to the case in Sweden and Norway, Danish unemployment benefits are quite generous, but still lower than what a job would give. They are not terminated, but to qualify for continued unemployment benefits, after 2.5 years of unemployment the receivers must find a job with a duration of at least 26 weeks. If he cannot find it himself, it will be the responsibility of the public to find it. For people below the age of 25, a job offer must be accepted after 12 months of unemployment.

There is a second factor that contributes to this development. Denmark now has a 10 year experience of high real loan rates in the domestic credit market, and as mentioned

practically no firm specific subsidies. This has efficiently prevented bad investment projects to be financed and continued and has also efficiently kept labor from being locked up in commercially impossible production.

It is very likely that the Swedes will be forced into a similar situation rather soon. If this is a realistic prediction, it is, of course, very much to the point to raise the question which policy is most efficient in forcing the desired structural change with a minimum of negative social consequences and to revise policies in that direction by deliberate choice in advance. This question can hardly be answered without an open-minded discussion about how to look at unemployment and at the distribution of wages and salaries.

There still remains an important question, that constitutes the vicious circle. Unemployment is definitely no desired thing and it cannot be considered desirable in any way for an industrial nation to reorganize itself and its people to live with a more or less permanent high unemployment situation. Again, part of the answer should be looked for in the factors that constitute the international competitiveness of industry.

Efficiency of Finance and Allocation Processes – A Great Nordic Potential

We have repeatedly pointed to inefficiencies in the allocation processes as a major reason for Nordic economic stagnation, and that viable policies should strive for, and be prepared to wait for longer term payoffs.

Allocation processes work through markets. International markets that Nordic producers have to face are today fiercely competitive and difficult to predict. Flexibility in adjustment, hence, is an important competitive factor. The Nordic labor market since the 50s essentially allows free movement between the four countries. Even though domestic labor markets, in Sweden and Norway in particular, have been criticized for rigidities in various respects the Nordic economy exhibits enough of diversity to stimulate immigration, particularly of unskilled labor, if bottlenecks occur.

However, there is one important exception. The Nordic capital markets – with the possible exception of Denmark – are more regulated than in practically all other industrialized countries. The traditional economic analytic framework used by forecasters makes it easy to overlook the importance of the capital market. Keynesian tradition views investment, capital accumulation and economic growth as a problem of access to sufficient finance; controlled or market allocated make little difference.

For the very specialized and internationalized Nordic industrial structures this may have lead to very undesired consequences. As matters now stand, the current state of capital market regulation among the Nordic countries makes it easier for a firm in any Nordic country to negotiate a business deal, a joint venture or a direct acquisition with a firm outside the Nordic group, than with another Nordic firm. In the first case, there is only one regulatory agency to contact and argue with; the one in the firm's host country.

A West German or a U.S. firm is more or less free to pursue its part of the deal without consultation with any regulatory body. If two Nordic firms see a mutually beneficial business combination that involves capital market transactions, most notably involving equity arrangements, there are two regulatory bodies to deal with, that may not be in agreement and that may not be inclined to move fast in their decisions. We argue first that this situation, of course, makes it relatively more easy for Nordic firms to look outwards for new business combinations, that such options are relatively more in abundance outside the Nordic countries than inside and that the effects of this situation can be observed in the form of lower intra Nordic industrial cooperation than the extent of industrial activity in the Nordic countries should suggest.

We argue, secondly, that this, for the purpose of Nordic economic cooperation, is a very unhappy situation, because it slows down, or prevents, the forming of efficient business combinations on a Nordic basis that potentially exist, and that at least two economies – the Swedish and the Norwegian – need to break its state of stagnation. The existing regulatory framework of Nordic capital markets constitutes a built-in bias in the allocation process that pushes direct industrial cooperation outwards to firms in other countries.

Thirdly, this situation is an inefficient organization of resource allocation for the Nordic countries as a group that contains both the technical and business potential for fast economic growth, and a vast inhouse resource or finance potential in the form of Norwegian oil.

As long as the policy alternative contemplated is simply one of removal of regulations there is no question of breaking with international agreements. The reverse situation holds, and the OECD would only welcome such liberalizations of capital movements.

NOTES

- 1 This argument is put forward in Eliasson-Sharefkin-Ysander (eds.), *Policy Making in a Disorderly World Economy*, IUI Conference Reports 1983:1, Stockholm. See the introductory chapter by the editors.
- 2 For a discussion of this way of defining the concept of international competitiveness, see Eliasson, G., *International Competitiveness – an empirical analysis of Swedish Manufacturing*, Research Report No 133, Federation of Swedish Industries, Stockholm 1972.
- 3 For a decomposition of the rate of return, see *Profits performance in Swedish industry*, *Industrikonjunkturen*, Autumn 1976.
- 4 More detailed international comparisons of rates of return and interest rates should also take differences in the tax-systems into account. See e.g. Eliasson, G.–Södersten, J., 1981, *Business Taxation, Finance and Firm Behavior*. IUI Conference Reports 1981:1 and Södersten, J.–Lindberg, T., 1983, *Skatt på bolagskapital (The Taxation of Income from Capital)*. IUI Research Report No 20 1983.
- 5 See Bergen Conference on Oil and Economics 1983. *Oil and Industry – are they compatible?* Bergen 11th May 1983.
- 6 See Carlsson, B., Bergholm, F., Lindberg, T., 1981. *Industristödspolitiken och dess inverkan på samhällsekonomin (Industry Subsidy Policy and its Macroeconomic Impact)*. IUI, Stockholm.
- 7 See Ylä-Anttila, P., 1979, *A Comparative Study of Forest Industry Profitability in Finland and Sweden*. ETLA. Discussion Paper No 47, 1979.
- 8 Eliasson, G., "Norway in a Scandinavian Perspective – What Would have Happened without Oil?", in *Oil and Industry – are they compatible?*, The Bergen Conference on Oil and Economics, Bergen 1983.
- 9 See Holmlund, B., *Arbetsmarknad och strukturomvandling i de nordiska länderna*, IUI Booklet No 133, 1982.
- 10 See Dargay, J., "The Demand for Energy in Swedish Manufacturing", in Ysander, B.C. (ed.) *Energy in Swedish Manufacturing*, IUI, Stockholm 1983.
- 11 Eliasson, G.-Lindberg, T., "Allocation and Growth Effects of Corporate Income Taxation," in Eliasson G.-Södersten J. (eds.) *Business Taxation, Finance and Firm Behavior*, IUI Conference Reports 1981:1, Stockholm.

CHAPTER II

INTERNATIONAL ECONOMY: SLOW GROWTH IN THE MEDIUM TERM

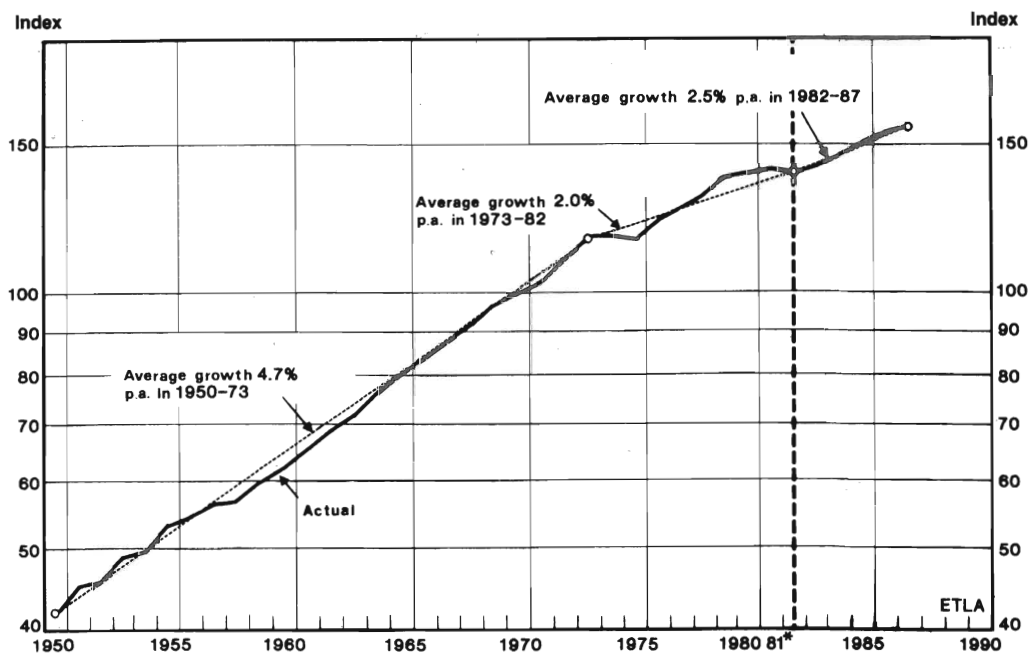
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1 INTRODUCTION

During the past ten years the international economy has undergone many important changes. Economic growth in OECD countries has decelerated considerably compared with developments before the first oil crisis (see Figures 1 and 7). In addition to the terms-of-trade losses due to the oil price increases other well-known reasons for this slowdown can be mentioned. The reconstruction of Europe after the war and the diffusion of technology from the United States supported a high economic growth rate in the 50s and the 60s. This fast economic growth was further facilitated by economic integration and the liberalization of world trade in general. Fast industrialization was made possible by an abundant supply of labor via the outflow of excess labor from agriculture and by immigration. On the other hand, these structural shifts in employment increased the demand for massconsumption of goods and thus stimulated an even faster industrialization. This course of development was to a great extent based on cheap energy. In a historical perspective it seems that economic growth was abnormally high during the 50s and 60s. Later developments can to a degree be regarded as a return to normal.

Figure II:1 Volume of gross domestic product in the OECD area, 1950–87
Index: 1970 = 100



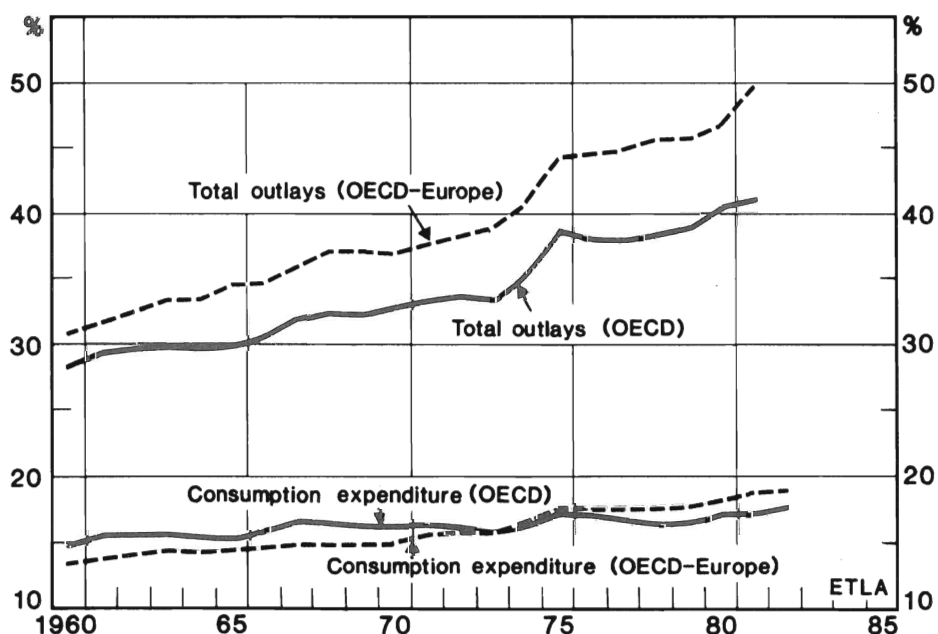
Sources: OECD, National Accounts and ETLA

At the end of the 1960s and in the early 1970s the growing Euromarkets increased the interdependence of national capital markets and thus forced a need for coordination of national monetary policies. However, such coordination could not be achieved. A breakdown of the Bretton-Woods system followed and a regime of more or less freely floating exchange rates has ruled since then. Both the short-run variability in nominal exchange rates and the long-run variability in real effective exchange rates have, however, been far greater than anticipated by the proponents of a flexible exchange rate regime.

The prosperity of the 60s and the early 70s brought about unrealistic expectations thus leading to increasing inflexibilities in the industrial economies. This was for example the case in the labor market. During the upturn after the first oil price shock labor costs increased very rapidly which appears to have induced some substitution of labor for capital. This has further aggravated the problem of unemployment. Because of rising unemployment pressures economic and industrial policies were increasingly defensive and the necessary structural adjustments were thus delayed.

Figure II:2 Government final consumption and total outlays, 1960–82

Per cent of GDP



Note: Government final consumption expenditure mainly consists of current purchases of goods and services for public administration, defence, health and education. It excludes all transfer payments.

Total outlays of government mainly consist of final consumption expenditures, interest on public debt, subsidies social security transfers to households and gross capital formation.

Source: OECD, National Accounts

The role of the public sector has increased dramatically in virtually all industrial countries since World War II. This is reflected both in the growing share of public demand in total final demand – at least if measured at current prices – and directly or indirectly in many other ways (see Figure 2). The production of public goods is labour-intensive and as transfer payments have increased even faster than public consumption and investment, the share of households' gross income received from government has grown considerably in some countries. Furthermore, the public sector has exercised an influence on the private sector via increased subsidies, regulation, etc. It has been widely argued that the role of the public sector has grown to such an extent that it hampers the efficient functioning of market forces.

The world economy of the 70s experienced two oil shocks, each equivalent to an income transfer of about 2 per cent of GDP of the OECD countries to the OPEC countries (see Figure 3). The first oil price hike occurred during the latter part of a prolonged boom. The industrial economies were thrown into a deep recession and a continued state of disequilibrium. Inflation accelerated and economic growth came to a standstill. Public sector and current account deficits widened.

Figure II:3 The terms-of-trade in industrial countries, 1950–83



Note: Figure for 1983 refers to the first two quarters only
Source: IMF, International Financial Statistics

The world economic situation has been a new experience both to policy makers and economists. The old means of policy making led to more rather than to less market disorder, when they were applied individually and with different objectives in the various countries. Market predictability decreased and the enhanced state of uncertainty – after a few years of bad market experiences – generally cooled down the industrial part of the world economy.

2 BASIC ASSUMPTIONS

When assessing the prospective course of the Nordic economy over a given future period some basic assumptions as to the external world economy have to be introduced.

In general we have abstained from presenting alternative forecasts. We rule out the likelihood of new shocks – whether originating in the energy, the financial or in other sectors – during the forecasting period by assumptions. This we do for practical reasons. Cyclical assumptions are only verbally stated (see below). In general the anti-inflationary policies in some big countries, notably Japan, the U.K., the U.S., and West Germany, make us believe that a return to world inflation rates close to those of the 60s will take place during our projection period 1983–87. Hence high real interest rates and high open unemployment will characterize most of the forecast period. It seems reasonable, too, to make a basic assumption that demand conditions in the oil market will not lead to a new oil price shock in the 80s. However, this does not rule out the possibility of a political crisis disrupting the supply of oil.

The old industrial world has been relatively slow in adjusting its industrial structures to the evolving world competitive situation. This means that coordinated demand policies in Europe may be inflationary and are not likely to succeed. It also means that the current world demand upswing will not affect Europe as strongly as before, but rather generate growth responses in other parts of the world.

2.1 Exchange Rates

The price of a currency is perhaps the most important single price in an economy. What determines exchange rate changes is, however, not so well understood. This is reflected in the relatively poor record of various kinds of exchange rate forecasts. That is the reason why we have adopted the standard assumption of unchanged real exchange rates.¹

The value of the U.S. dollar (USD) is of great importance to the world economy. One reason for this is that the U.S. share of world exports of goods and services is still

significant. Another is the fact that the USD is commonly used as a vehicle currency, i.e. used as a currency of denomination in trade and in financial obligations between "third" countries.

Much discussion has been going on as to whether the USD is "overvalued" or not. This kind of argumentation springs from the purchasing power parity-approach to the determination of exchange rates (see the Special Study 5 by Suni). More recent theoretical and empirical work in this area has, however, emphasized the so-called asset market view, which regards exchange rates as asset prices determined by the willingness to hold available stocks of financial assets denominated in different currencies. In this approach changes in risk and in expectations concerning future inflation, interest rates and real exchange rates become important in explaining changes in current nominal exchange rates.

From the point of view of this model, the continuing strength of the USD can be more easily understood. The real interest rates reflect changes in the demand and supply of funds and the prospects of large budget deficits in the U.S. are pushing interest rates higher. Abstracting risk away we can then say that the USD will strengthen until the anticipated rate of decline in its value offsets the higher dollar interest rate so that the expected yields of assets denominated in various currencies are equal.

Of course, the dollar may weaken if the administration and the congress can cut future deficits. Also the large changes in real exchange rates and the very large capital flows compared with the magnitude of current account surpluses or deficits can only be explained in terms of asset adjustments between countries.

2.2 Oil Prices

Figure 4 provides a rough idea of the situation in oil markets. During the winter 1983/84 the demand for oil has, however, strenghtened somewhat and destocking has ended. Longer-term adjustment efforts are still expected to predominate. In this respect there are grounds for cautious optimism. The 25 per cent average annual rise in the real price of imported crude oil from 1972 to 1980 has triggered off conservation measures which tend to reduce the demand for energy in the coming years. The ratio of total energy consumption to GDP illustrates both what has been achieved so far and the prospective developments.

Table II:1 Energy efficiency in OECD countries, 1980–90

Index 1973 = 100

	1980	1985	1990
Total primary energy requirements/GDP	87.9	80.4	77.4
Oil consumption/GDP	80.2	64.8	57.0

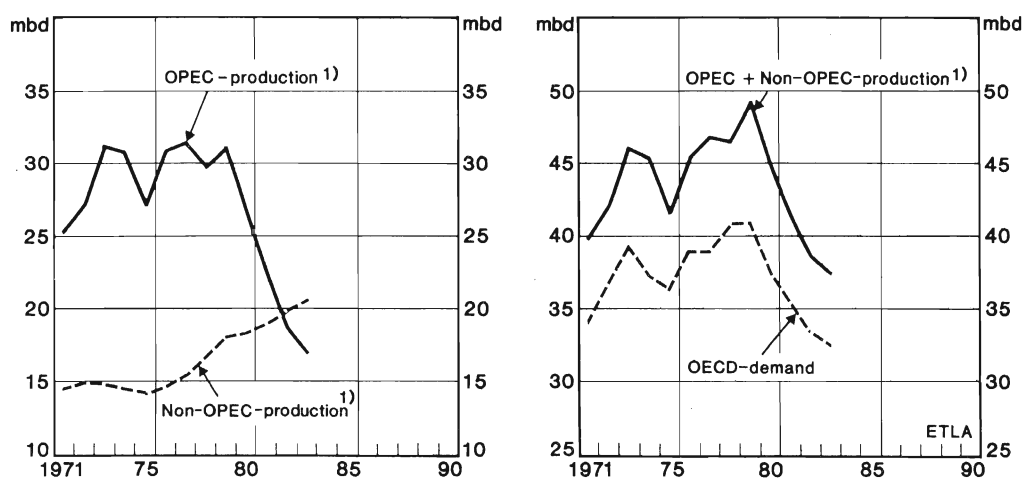
Source: IEA, World Energy Outlook, 1982; high demand scenario

Even if oil conservation were not continued along the lines suggested in the above mentioned IEA study and if economic recovery proved stronger than expected, it would take many years for a fundamental imbalance in the oil markets to develop. If consistent energy policies are pursued out in industrial countries, the possibility exists that the OPEC cartel will never again be able to tighten its grip on the OECD countries.

Very much will, of course, depend on Saudi-Arabian policy. As a swing producer, it can almost alone satisfy even a fast-growing world demand for oil for a considerable time. On many occasions, Saudi-Arabian authorities have announced their intention of keeping nominal prices unchanged for an extended period of time. On the other hand, from the producers' as well as from European consumers' point of view, the development of the value of the USD is also an important factor in determining oil prices.

Figure II:4 Supply and demand of crude oil, 1970–83: Key indicators

Million barrels per day

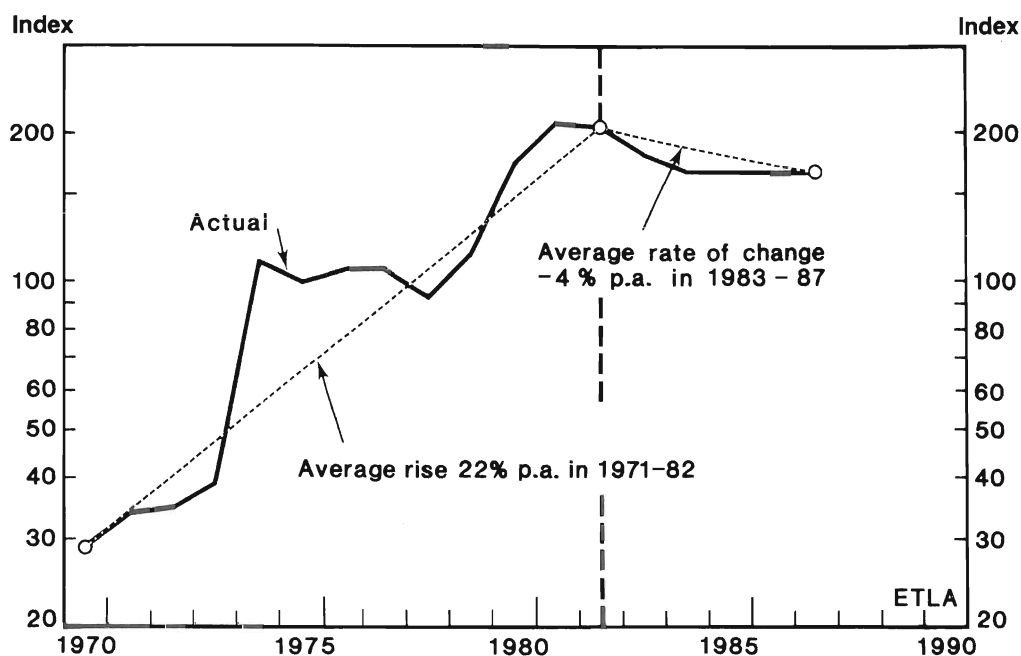


¹⁾ Million barrels per day, excluding production of Centrally Planned Economies. The figure for 1983 refers to the first three quarters only.

Source: OECD, Economic Outlook, December 1983

Figure II:5 Real price of crude oil, 1970–87

Index 1975 = 100



Note: The index for the price of crude oil has been deflated by the unit value index for manufactured goods exports.

Sources: HWWA, United Nations, ETLA

2.3 Economic Policies

Despite the high unemployment rates economic policy is in general expected to stay on a tight anti-inflationary track in the OECD countries. Economic policies are constrained by the need to limit the role of the public sector and the fear of accelerated inflationary expectations. Real interest rates are expected to fall somewhat from the levels recorded in the first half of 1983. For the years 1983–87 they are expected to average about 3 per cent per annum. In such an environment it is difficult for a small open economy to pursue expansive policies.

The current economic policy discussion reflects a growing concern in the thinking of economists, politicians, and perhaps even average citizens about the effectiveness of the public sector and price stability. Concern for employment has correspondingly diminished. It seems especially in the sense that somewhat more unemployment is being accepted today if it is believed to prevent stagnation and unemployment in the future. These shifts of emphasis will have a considerable effect on the short-run changes in the policy stance motivated by seeking to e.g. a "suitable" employment-inflation mix

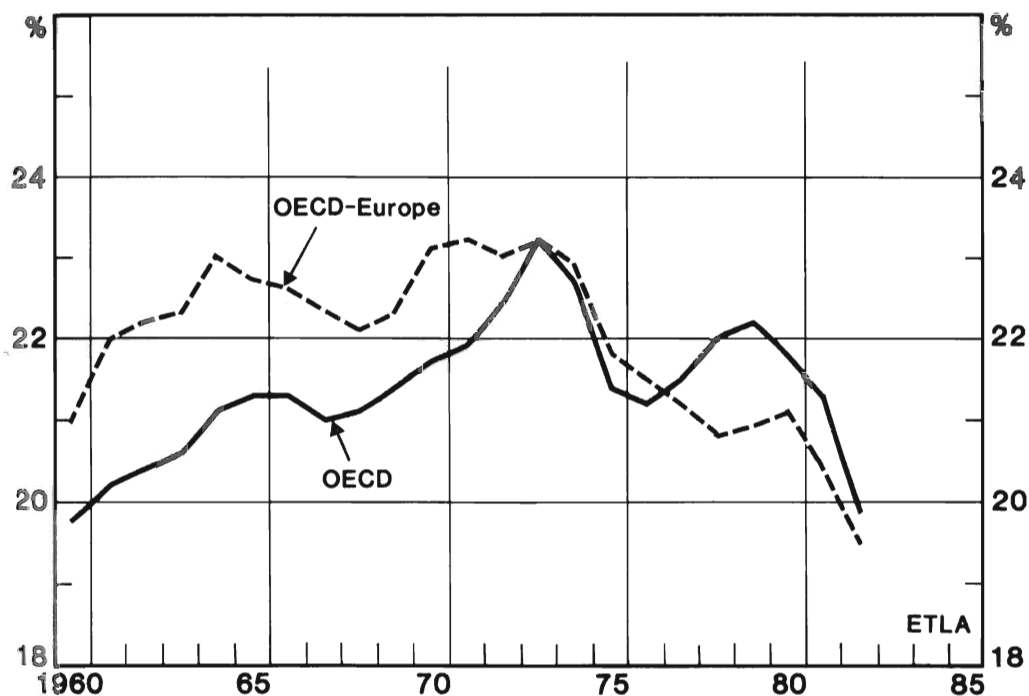
before elections. Similarly long-run growth and inflation cycles may be affected by long-run changes in the emphasis given to various economic targets and changes in the ideas concerning the applicability of various policy instruments.

3 SUPPLY FORECASTS

3.1 Demand Pull with Small Consequences for Investment

The upturn in economic activity is traditionally seen as a result of an increase in demand due mainly to private consumption, to residential construction and to the inventory cycle. The crucial question is, however, to what extent investment will also pick up. High interest rates, insufficient demand, a significant degree of idle capacity, low profitability, protectionist fears, various supply side considerations and uncertainties in general, can be pointed out as major reasons for a bleak outlook for the fixed investment cycle in the OECD countries. Some of these factors will lose part of their importance if the recovery in private consumption and inventory demand proves strong enough, but the pick-up in investment spending is expected to be modest by historical standards. The investment

Figure II:6 Investment ratio in OECD countries, 1960–81
Per cent of GDP

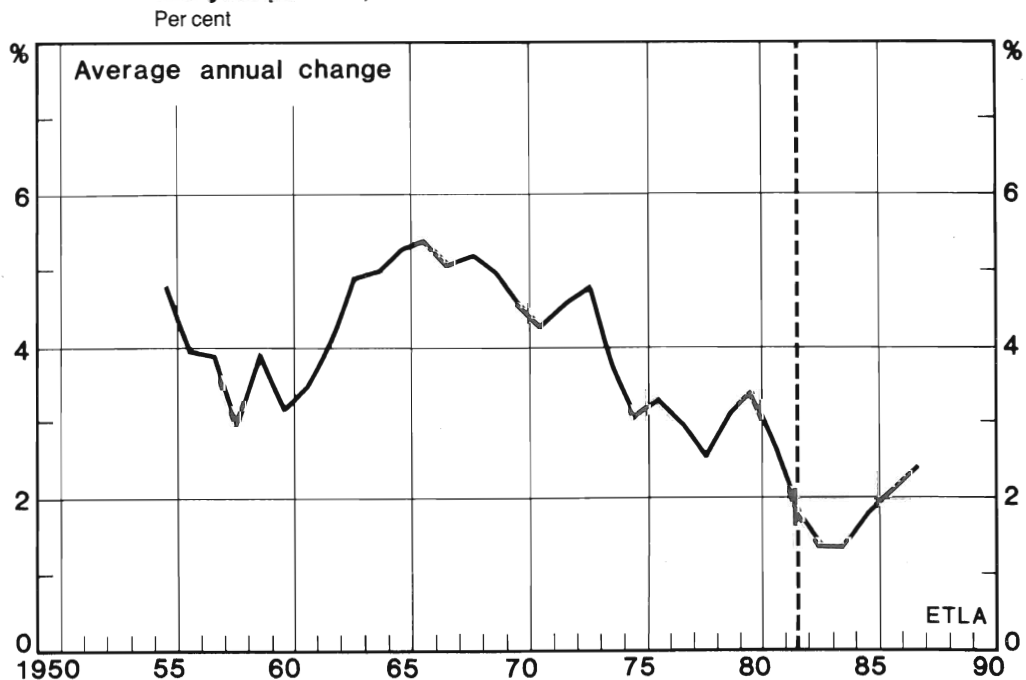


Source: OECD, National Accounts

ratio (see Figure 6) is thus forecast to remain low and the capital/employment ratio and labor productivity will rise only slowly.

Economic growth has been rather slow for some time and the recovery currently under way is not expected to be very strong. The volume of world trade has declined in the early 80s and unemployment has risen to record levels. Structural change in world production and trade has thus proved to be cumbersome and time consuming. All in all the average annual growth rate of GDP in the OECD countries is forecast to be 2 ½ per cent during the five-year period 1983–87. Even this forecast may prove too optimistic. Insufficient spending on fixed investment, accelerating inflation, further spread of protectionism, debt problems of some developing countries and the possibility of a financial crisis are potential factors on the negative side. Clearly, there is also the risk that disorganized fiscal and monetary policies will prolong the stop/go-nature of economic policies witnessed during the past couple of years among the OECD nations. In that case international economic developments may remain unstable even in the medium-term. Medium-term forecasts typically assume fluctuations to be less volatile than in the past or are content with a mere prediction of the average growth rates over the forecasting period. This does not imply that we expect the future to be smoother than the past.

Figure II:7 Average annual rates of GDP growth in the OECD area for different five-year periods, 1950–87



Note: The figure for the year 1980, e.g., corresponds to the average annual rate of change in the five years, 1976–80

Sources: OECD, National Accounts and ETLA

3.2 The Business Cycle – A Fast Peaking in 1984/85

Output in the U.S. is forecast to continue to grow fast in 1984, peak late this year or in early 1985 and then probably return to low growth rates in 1986 and 1987. Japan seems on the verge of reaching a 4 per cent growth rate – high by international standards, but low when seen against historical Japanese experience. For Europe only a very moderate growth of 2–3 per cent can be counted upon. On the other hand, in Europe unbalanced financial markets do not pose such a serious threat to a sustained recovery as in the U.S. For the developing countries the prospects will become better only gradually.

Continued high real interest rates, high and even growing unemployment rates and generally tight economic policies will cool the upswing. We expect the big industrial countries, especially the U.S., Japan, West Germany and U.K. to be successful in their attempts to contain inflation, bringing the world to a more normal, stabilized situation in the second half of the 80s.

4 WORLD TRADE RECOVERS SLOWLY

During the past twenty years world trade in goods has increased four-fold.² Trade in services has increased at roughly the same rate, even though trade in services grew somewhat faster than trade in goods in the 1970s. Over the period 1960–80 GDP doubled in the industrial countries; thus economic interdependence by way of trade has substantially increased. In 1980 exports accounted for more than 30 per cent of the GDP in every fourth industrial country (10 per cent in 1960) and in three countries of four, exports nowadays account for more than 20 per cent of GDP. For developing countries foreign trade has become very important as well, especially for the oil producing countries.

The oil price hikes of the 70s significantly redistributed purchasing power among the countries and thereby induced large changes in the structure of world trade. Still the annual average increase in the volume of world trade was 7 per cent during the years 1976–79; about twice as much as the growth of GDP in the industrial countries. Thereafter stagnation of world trade followed.

A generally tighter economic policy response in industrial countries to the second oil price hike created conditions of high and volatile interest rates, large fluctuations in exchange rates, and increased uncertainty in general and it finally led to a double-dip recession in 1982. With the recession, protectionist measures, in most cases bilateral and sectorwise, have increased.

For some non-oil developing countries the developments described above have entailed serious financial difficulties. The outstanding foreign debt of these countries is estimated

to have totalled about 600 billion USD at the end of 1982. In relation to exports of goods and services this was more than 140 per cent. Much of this debt is concentrated in a few large and relatively advanced economies. These countries have been forced to introduce tighter financial discipline, which has in some cases implied a significant slowing and scaling down of development projects.

From the above output forecasts and the assumptions made concerning crude-oil prices it follows, when account is taken of the financial difficulties experienced in many developing countries, that the recovery in world trade will be only gradual, starting in the industrial countries. Exports of primary commodities account for over one third of the export income of non-oil developing countries. Real prices of these commodities are expected to rise somewhat from their very depressed levels when demand strengthens. This will leave some room for import growth in these countries later in the forecasting period. Oil producing countries are estimated to have cut their imports by almost 10 per cent in 1983 because of the fall in their income from crude oil exports. Given the expected development of oil prices, prospects for a pick-up in demand for imports in those countries appears to be modest. All in all the volume of world trade is estimated to increase annually by 4–5 per cent on average during the forecasting period.

5 HIGH UNEMPLOYMENT

Unemployment has continued to grow rapidly in industrial countries. In many countries it has reached levels not seen since the Great Depression (see Table 2 and Figure 8). Significant differences can, however, be observed between various countries. Generally, unemployment in Europe has increased steadily since the first oil shock, whereas in the U.S. it has fluctuated more or less cyclically at a high level. Japan and some small European countries, e.g. Sweden, Norway, Switzerland and Austria, have been able to keep open unemployment at low levels.

Table II:2 Standardized unemployment rates in selected OECD countries, 1965–82

Per cent of total labor force

	1965–69	1970–74	1975–80	1981	1982
U.S.	3.7	5.2	6.9	7.5	9.5
Germany	0.8	1.0	3.5	4.4	6.1
France	2.0	2.6	5.1	7.3	8.0
U.K.	2.9	3.4	5.8	11.0	12.7
Japan	1.2	1.3	2.0	2.2	2.4
Italy	5.5	5.7	6.9	8.3	8.9
OECD	2.7	3.4	5.3	6.7	8.2

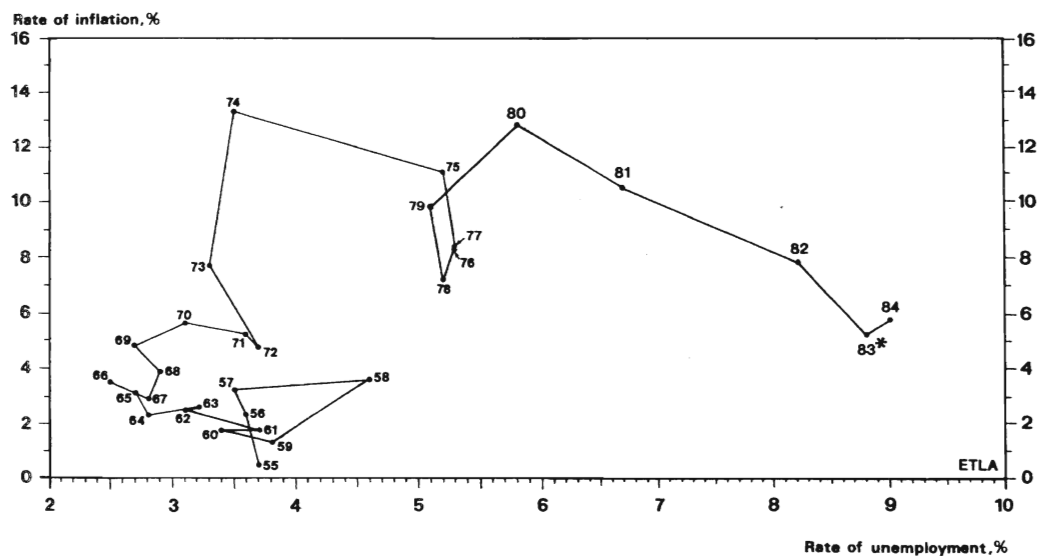
Sources: OECD, Economic Outlook, December 1983 and Main Economic Indicators

Despite slower growth during the 70s the average annual growth in employment in the OECD area was about the same (1 per cent p.a.) as during the 60s – the difference being explained by the labor productivity slowdown. Nor did the increase in the working age population in the 70s (1.1 per cent p.a.) differ much from that of the 60s. However, there has been a large change in the composition of the working age population so that the share of some groups with high participation rates has increased. This, together with rising participation rates of some groups (e.g. female workers) has raised the average participation rate. The rate for the OECD area was 69.4 in the year 1960, 68.2 in 1970 and 69.1 in 1980. Thus, the total labor force grew much more (1.3 per cent p.a.) than employment in the 70s. Only the U.S., where the total numbers of jobs rapidly increased, formed an exception in this respect. The increase in the average participation rate was particularly marked during the recovery of the late 70s, partly for cyclical reasons.

Not much relief can be expected in the unemployment situation over the forecasting period. As in the supply of labor continues to increase, particularly in Europe the expected low rates of growth cannot – judging from past trends in employment/output ratios – pull unemployment downwards from its present level. The rise in unemployment rates may level off but no marked improvement is likely to occur. Some deceleration in the growth of labor supply is expected in the latter half of the decade. This will gradually ease the unemployment situation.

With such gloomy unemployment prospects, interest in policy measures dealing directly with the labor market has increased. Attention has been paid to questions such as the role of employment subsidies, measures designed to affect working time (part time jobs, restrictions on overtime, shorter average hours) and measures meant to improve

Figure II:8 Inflation and unemployment in industrial countries, 1955–84
Per cent



Sources: OECD, Economic Outlook, December 1983 and ETLA

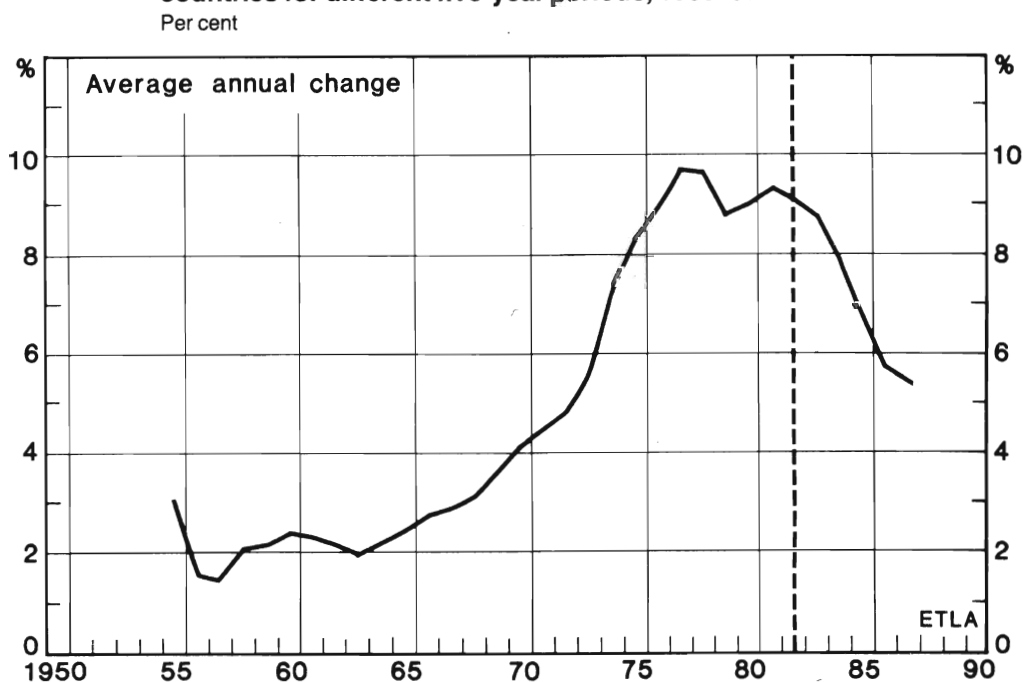
employment opportunities for groups of people particularly affected by unemployment (e.g. youth).

6 CONTROLLED INFLATION

The deceleration of inflation in industrial countries has continued more rapidly than generally expected. In many countries even falling prices have been common during the past year. The course of development has been characterized by historically low levels of non-oil commodity prices, falling rates of nominal wage increases and substantial cuts in the price of crude oil. Despite exceptionally high levels of unemployment, a reduction of inflationary expectations is seen as a major objective of the economic policy strategy in the medium term.

The rate of inflation (consumer prices) is expected to decelerate somewhat further this year. For the years 1985–87 the average annual inflation rate in industrial countries is projected to settle around 5 ½ – 6 per cent. Nevertheless, compared with the performance before the first oil shock, the results of the fight against inflation appear to be rather modest. In the 50s and 60s the average annual inflation rate for different five-year periods never exceeded 4 per cent and not until the five-year period 1969–73 did it exceed 5 per cent (see Figure 9).

Figure II:9 Average annual rates of change in consumer prices in industrial countries for different five-year periods, 1950–87



Note: The figure for the year 1980, e.g., corresponds to the average annual rate of change in the five years 1976–80. Because of different weighting pattern the figures differ somewhat from those presented in Table II:3

Source: IMF, International Financial Statistics

However, in assessing inflation prospects in the medium-term numerous risks and uncertainties must be kept in mind. First, the average growth of hourly earnings in manufacturing industry has slowed down relatively quickly compared with the adjustment period after the first oil shock. Unit labor costs, however, rose by 8–9 per cent in 1982, a rate of increase far above the average for the 60s. The unfavourable course of productivity, indicated by these figures, might be an impediment to decelerating inflation further. Second, many non-oil commodity prices are at such low levels with respect to production costs that even the modest recovery projected for the industrial countries may lead to considerable increases in the real prices of such commodities. Third, current signals from the oil markets might prove misleading, since, e.g. political disturbances may rapidly change the picture.

7 SUMMARY

The world economy is facing – by post-war standards – a period of slow economic growth characterized by anti-inflationary policies in leading industrial countries. Important elements of this policy approach include tight monetary policies, forced increases in labor mobility and wage flexibility, and a consolidation of public finances. Despite official statements, however, creeping protectionism and other kinds of government intervention in the functioning of market forces are to be expected as long as unemployment remains high. The negative consequences of this will, however, largely be felt beyond the forecast period.

Unemployment is not expected to ease until the end of our forecast period. On the other hand it may now have reached a threshold from which it will not increase further. In some industrial countries unemployment is at such a high level that social unrest and political instability in general may occur. On the whole, however, we believe that a growing

Table II:3 Summary of international forecasts

	Average annual change, per cent				
	1960→70	1970→80	1981	1982	1982→87
GDP volume in OECD countries	5.0	3.2	1.6	-0.2	2.5
World trade volume ^a	8.2	5.5	0.4	-2.8	4.0
Real price for crude oil ^b	-2.1	19.6	12.2	-2.4	-4.0
Inflation (consumer prices) in OECD countries	3.3	9.0	10.6	7.8	6.0

Note: ^a Average of world export and import volume indices as presented in IFS

^b Nominal price of crude oil deflated by UNs unit value index for manufactured goods exports

Sources: OECD, National Accounts, Main Economic Indicators, IMF, International Financial Statistics, UN, Monthly Bulletin

political acceptance of bringing the industrial world back to economic order will make for a generally higher acceptance of continued high unemployment, more wage dispersion and flexibility and also contain more pronounced protectionist activities.

Recovery in industrial countries and world trade will be too slow to avoid a deepening of the debt crisis in some developing countries. A third shock from the oil markets is always possible as long as a large share of crude oil imports to industrial countries comes from the politically unstable Persian Gulf area. We have chosen not to enter such possible contingencies into our projection but preferred to discuss them separately in Chapter I.

NOTES

1 Unchanged from the first half-year 1983 level.

2 Measured as an average of import and export volume indices presented in IMF's International Financial Statistics.

CHAPTER III

DENMARK: ECONOMIC TENSIONS AND CHANGING PRIORITIES

CONTENTS

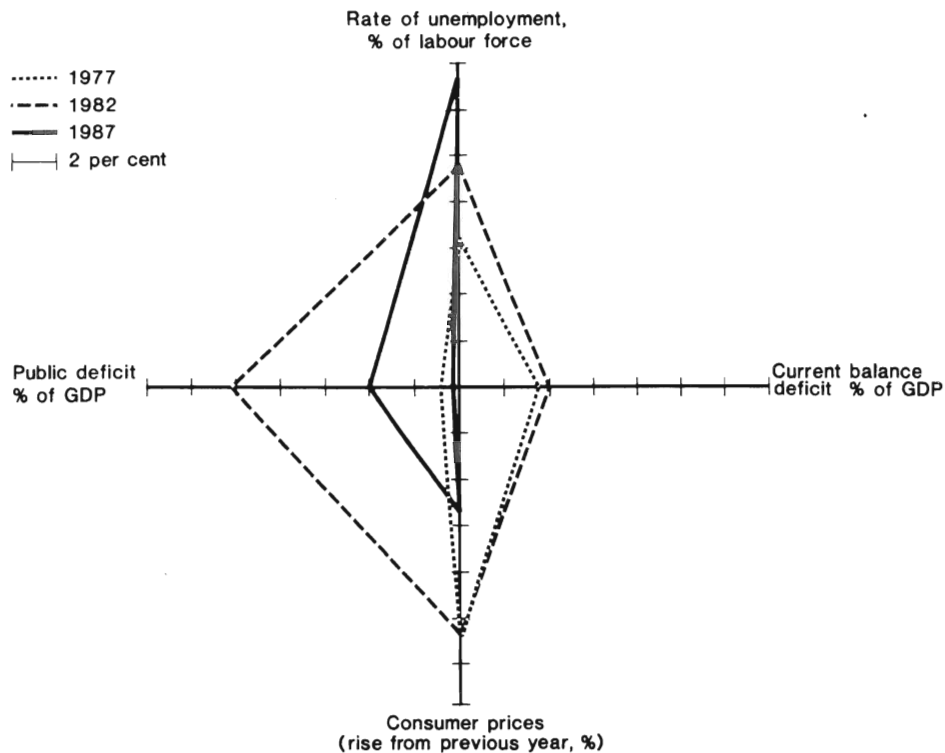
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1 THE PRESENT ECONOMIC SITUATION ¹

Denmark has an oldstanding and wellknown problem of macro-economic disequilibrium. Its balance of payments has been in deficit, often in the neighbourhood of 3 per cent of the GDP, since the early 60s. Unemployment began rising shortly after the first oil price revolution and has been rising especially rapidly in recent years, now tending to exceed 11 per cent of the labour force – a development which should be seen, however, partially in the light of strongly rising labour market participation rates. A new phenomenon in recent years has been the public sector deficit. Central government ran into deficit in 1975–76 and for the consolidated public sector, including local government and various public pension schemes, there has been a deficit since 1978–79. This rose steeply until 1982, but has now been brought down to around 7 per cent of GDP.

In public discussion the public sector deficit has often been pointed out as the major problem, whereas others have argued that, being predominantly an effect of the built-in automatic stabilizers, the deficit should be seen mainly as a symptom of the other problems. It is obvious, however, that the degree to which the public sector deficit should be considered a “problem in its own right” has been increasing over time since the major

Figure III:1 Size and composition of the Danish disequilibrium problems



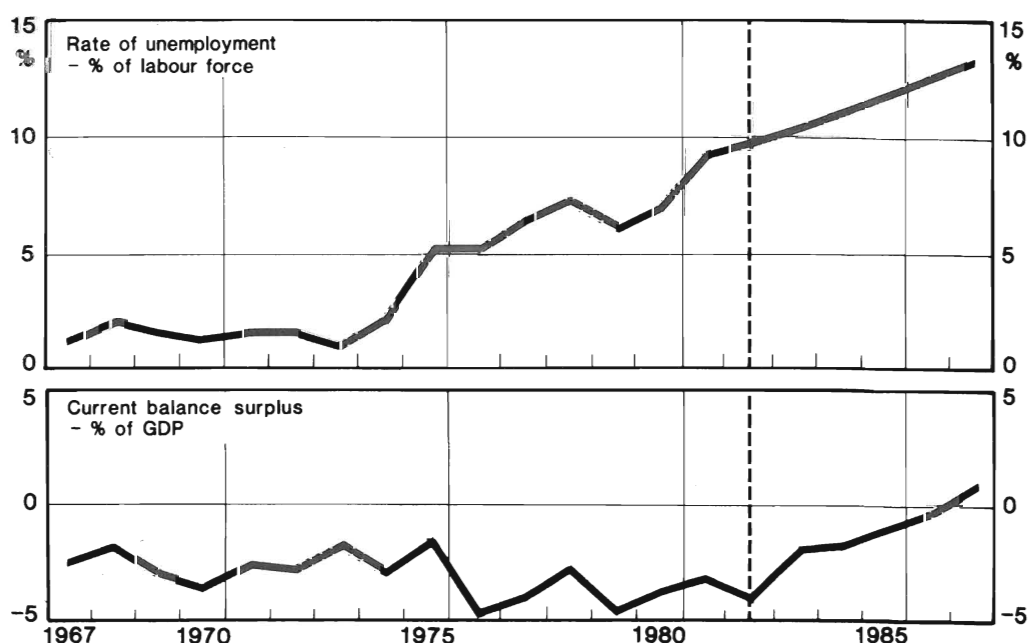
Source: Central Statistical Office of Denmark and own estimates

part of the deficit has had to be financed over the bond market (i.e. not through monetarisation) at interest rates, widely above the nominal rate of increase of the GDP. Evidently, such a process could only go on for a while, and, not surprisingly, the problems (present and future) of income distribution in connection with the process have gradually come into the forefront of discussion. Recent interest rate developments, however, together with budget cuts and increased taxation including a so-called real interest rate tax upon certain types of savings enjoying earlier substantial tax favours, have done much to remove possible instability problems in connection with the government debt and thus bring the deficit problem within manageable proportions. The question will be dealt with further below.

Perhaps somewhat contrary to what may be a widespread impression abroad, Denmark has not been an especially inflation-prone country. The inflation rate has been moving around the average of OECD-Europe and has thus also declined rapidly during the last one or two years.

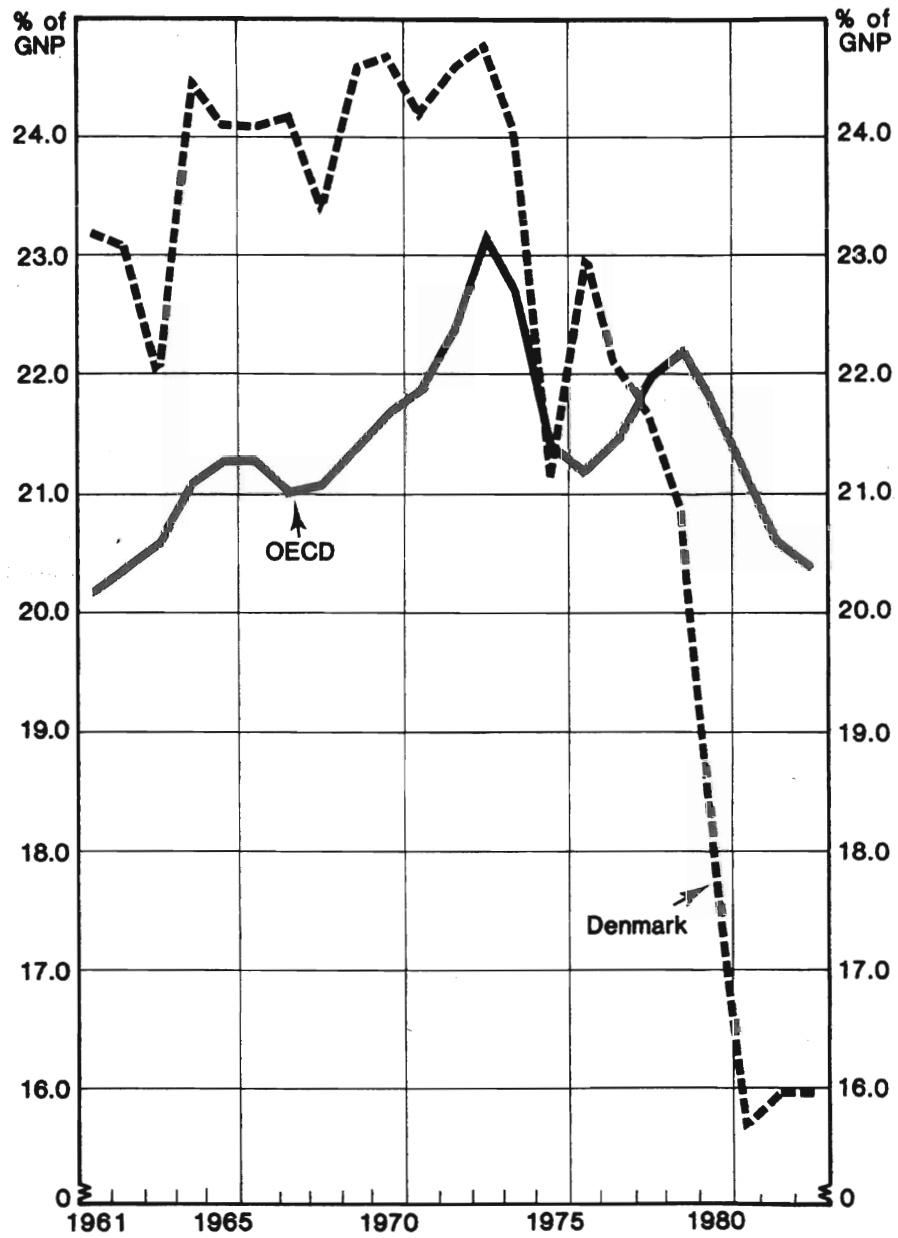
Whereas weights and priorities in economic policy have changed very much in recent years, the size of the total problem of economic disequilibrium has increased, not decreased, as can be seen from Figure 1. As mentioned below it seems fairly well established that the effects of the economic policy carried through should in themselves have tended to reduce the size of the total disequilibrium. The figure thereby also

Figure III:2 The development in unemployment and in current balance deficit, 1967-87



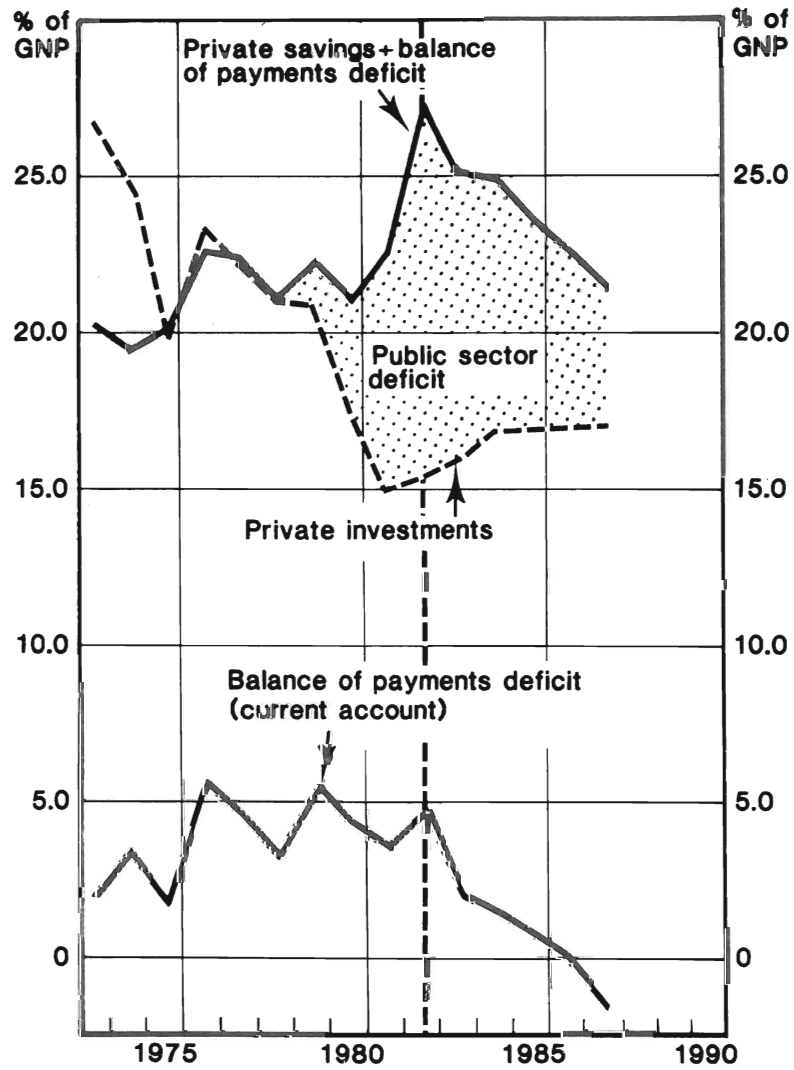
Source: Central Statistical Office of Denmark and own estimates

Figure III:3 Total fixed investments in Denmark and total OECD, 1961–83
Per cent of GNP



Source: Central Statistical Office of Denmark and OECD

Figure III:4 Savings, investments and the public sector deficit, 1973–87
Per cent of GNP



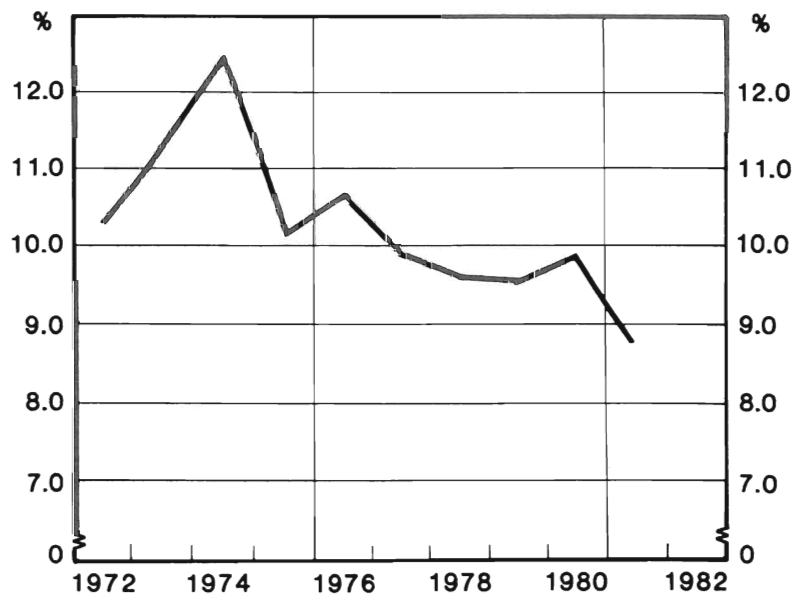
Source: Central Statistical Office of Denmark and own estimates

illustrates how the general international economic background has deteriorated during the period 1977–83.

Figure 2 gives a longer term historic description of the development of the unemployment rate and the current account deficit as a percentage of GDP. A central and most unfortunate part of the macro-economic development, illustrated in Figure 3, has been an even deeper and more dramatic investment crisis in Denmark than for the total OECD-area, due of course also to the extremely high interest rates predominant in Denmark for a number of years.

In Figure 4 the development of private investments is drawn up against the development of the public sector deficit. The figure thus illustrates how the two developments mirror each other. The normal interpretation would be that the causal relation goes from an investments crisis to a public budget crisis. But when fear of a possibly explosive development in government finance (and thus fear of the “forefront shadow” of future public deficits) gets predominant, one cannot of course rule out the possibility that causality runs both ways, a truly vicious circle thereby being created.

Figure III:5 Gross investments in manufacturing industries, 1972–81
Per cent of gross factor income in manufacturing



Source: Central Statistical Office of Denmark

The figure further indicates that the steep increase of the public deficit in recent years also partly mirrors an increase in the savings of the private sector, as a percentage of GNP. This pick up in savings, which seems to have run contrary to the most recent international developments, is no doubt partly due to the fast accumulation in various pension funds and to the legal curbs to the use of these funds. Due to these legal curbs, households probably do not take their wealth accumulation under these funds fully into account as current income. (Another way of putting this is that, partly a least, accumulation under these private pension schemes might as well have been considered part of the consolidated public sector fiscal balance thus reducing the public deficit).

Finally, in Figure 5 investments in manufacturing industry have been shown as a percentage of gross factor income in manufacturing.

Needless to say, there has been much discussion of "crowding out". It would be difficult to point out any automatic mechanisms or connections, resulting in "crowding out", whether directly through lacking availability of credits or indirectly by way of increasing interest rates. Accepting flatly the crowding out-theories, one would appear also to get into difficulties in explaining the sharp competition among banks and savings institutions to increase their lending.

2 SOME FURTHER VIEWS UPON THE PROBLEMS OF PUBLIC BUDGET DEFICITS

The arguments presented here concerning causes and effects of the rising public debt evidently run contrary to what appears to be the predominant international view of today, where it has again become fashionable (indeed "common wisdom") to compare public finance to the management of firms or to housekeeping, and thus to draw analogies from the experience of individuals or firms setting out to borrow on an ever increasing scale.² Without in any way trying to deal with the whole line of reasoning as to classical or neo-classical economic theory versus Keynesianism or of structural versus cyclical components of the deficit, it may therefore be appropriate to add some more points to the arguments above.

As for the causes of the deficit, Denmark probably represents an especially clear case with respect to the effect of built-in stabilizers upon the public fiscal balances and thus with respect to the cyclical elements of the deficit. In a recent report from the chairmanship of the Economic Council it was demonstrated that the burden of the loss of income as a result of increased unemployment in the private sector was shifted almost to a 100 per cent (and in some cases even more than a 100 per cent) to the public sector. The figures are presented in Table 1.

Since these figures were calculated (in 1981) unemployment benefits have been "trimmed", interest rates have come down and the extent to which income from interest

payments is taxed has been increased. Today the burden for fiscal balances of increased unemployment in the private sector therefore will tend to be slightly less than shown in the table, but developments since 1981 do not call for any substantial revision of the figures. (And besides, the degree to which interest payments from the public were taxed and thus "paying themselves back" at the time of the calculations was probably overrated in the calculations.)

The table illustrates how Denmark has probably gone somewhat further than most other economies in reducing the links between income and work through high marginal income tax rates, taxation of consumption and through unemployment benefits etc. In the 70s the implications of this for the incentives to work were widely discussed. However, this discussion has more or less come to an end after the sharp and truly not voluntary increase of unemployment in recent years. At the same time the problems of the public deficits have come much more in the forefront of public discussion.

It follows from the table that – barring reductions of unemployment benefits etc. of a scale which few would like to think of – some very substantial reductions in public spending on goods and services would be called for in order to obtain even moderate reductions in public borrowing through public saving. The burdens in the shape of increased unemployment and reduced public services would be very heavy, if substantial reductions of public borrowing were to be reached solely in this way. The impact on unemployment would not be the same in case of a relative reduction of public wages and the rates of social pensions and other social transfer payments. But the fact remains that by far the most appropriate and least painful ways to obtain a reduction of public sector borrowing are interest rate reductions and renewed growth in the private sector, which in the case of Denmark would have to be export-oriented and thus, especially in the present international environment, connected with improved international competitiveness.

Table III:1 The size of the automatic stabilizers

	Per cent of original wage income		
	Lower paid workers	Workers with average wage	Higher paid workers
Unemployment benefits	90.0	65.0	50.0
Government loss of tax revenue			
a) Direct taxes	4.4	18.5	27.9
b) Indirect taxes	1.4	4.0	5.4
Immediate effects upon public fiscal balance	95.8	87.5	83.3
To be added: Increased interest payments on public debt	7.7	7.1	6.7
In total	103.5	94.6	90.0

Source: Det Økonomiske Råd, Formandskabet: Dansk Økonomi, November 1981, København 1981

As for interest rates, the proposition that increasing public deficits should automatically lead to increases in interest rates and thus to the crowding out of private investments appears to have been effectively contradicted by recent economic events. In 1982–83 the international interest rate level has gone down in spite of continued high public deficits in most countries and of rising deficits in a number of countries. Denmark belongs to the category where the deficit (in absolute terms) rose from 1982 to 1983 but also to the category with the strongest decline in nominal interest rates. In fact the decline in long-term bond yields (from 22 per cent in the autumn of 1982 to below 14 per cent in the autumn of 1983) is without precedent within such a short span of time.³

One further aspect where the Danish discussion on public borrowing may be of interest to readers abroad concerns the point where real risk arises for runaway growth of the size of the public debt with the consequence, inter alia, that interest payments – like a cuckoo in the nest – will claim an ever increasing share of the tax revenue, thus leading either to a need for tax rate increases or to a crowding out of other public expenditure. This has been very much highlighted in the Danish discussion which around 1981–1982 became rather obsessed with the idea of the state eventually “going bankrupt”.

The answer to the question is fairly simple. Ultimately, the ability of the public sector to borrow must rest on its power of taxation.⁴ At the same time the power of taxation (taking into consideration the degree of public acceptance with which the tax legislation is met and thus the evasion problems, wage reactions etc. it may give rise to) may depend upon the distribution problems involved. A crucial factor with regard to such distribution problems would seem to be the degree to which it will be necessary to tax low income strata in order to pay interest payments to better-off people.

This leads to the conclusion that in the long run autonomous Government expenditure could not permanently grow substantially faster than the rise of the tax base, the latter depending of course on the rate of long-term economic growth in connection with the increases of tax rates that could be carried through without heavy adversary effects. Besides that, the risk of entering a danger zone where the credit of the Government would be damaged and where heavy problems of income distribution would arise depends crucially on the rates of interest to be paid on public debt. If these rates, after correction for the fiscal returns which the interest payments cause, exceed the rise of the tax base, then a potentially explosive development (with i.a. runaway growth in public debt) will have been entered into.

If, one or two years ago, there may have been signs of Denmark coming closer to such an abyss, developments since then have brought us in proper, though perhaps still not safe and certainly not comfortable distance of the brink. These developments have already been stressed upon above. The main factors have been the decline in interest rates, the introduction of a real interest rate tax for savings enjoying hitherto substantial tax benefits, the resumption of some growth in the private sector and the stoppage of the growth of the public sector in combination with the increase of tax rates, the “trimming” of unemployment benefits and a substantial tightening of some schemes of long-term

public income assistance (whereas other social transfer payments, such as old age pensions, have been increased).

As a consequence of these developments Denmark would appear to be qualified again for an "A.A.A."-certificate with respect to the international creditworthiness of the state. The slight downgrading (to "A.A.+", characterised also as "putting Denmark on the watching list") undertaken in 1982 by the American firm Standard & Poor's Corporation, which carries out evaluations of the creditworthiness of borrowers using organised markets various places in the world, would appear to have been motivated mainly by domestic fiscal developments in Denmark. There could hardly at any time have been serious doubts that foreign holders of Danish Government bonds etc. will not always get their money back.⁵

3 RECENT TRENDS OF ECONOMIC POLICY

For almost as long as the general disequilibrium in Danish economy has persisted, devaluation and/or incomes policies have been widely discussed alongside general fiscal and monetary policy. Apart from 1963/64 not much of any real incomes policy was carried through until the end of the 1970's and as for exchange rate policies, during the first half of the 1970's the policy was one of revaluation, rather contrary to the relative cost trends in Denmark at the time.

After 1979, however, these policies were reversed, and between 1979 and 1982, through a combination of exchange rate developments and incomes policy Denmark's international competitiveness was improved by close to 20 per cent, when measured by relative wage cost developments (wage costs per hour), in a common currency.

In our report "Dansk Økonomi", May 1982, some calculations of the macroeconomic effects of this policy were made, resulting in the figures shown in Table 2.

The fiscal policy carried through during this period could, through kind of an ex post rationalisation,⁶ be characterized as a demand twist policy where private demand – with a high import content – was held firmly back, whereas public demand with a lower import content showed continued strong growth, with the exception of public investments. A "slow motion" demand twist policy of this kind has been carried out in all Nordic

Table III:2 Isolated effects of changes in competitiveness

	1979	1980	1981	1982
1. Total employment (thousands)	-4	9	33	62
2. Reduction in current account deficit (billion DKK)	-0.6	0.5	5.2	11.1

Source: Det Økonomiske Råd, Formandskabet: Dansk Økonomi, November 1981, København 1981

countries for more than a generation; but strong twists of the type recently carried through in Denmark have generally been rejected both because of the allocation effects (increasing the public sector at the cost of the private sector) and the consequences for the tax burden.

The impact of demand twist policy on employment and the current account has been calculated as follows:

Table III:3 Isolated effects of changes in fiscal policy (demand twist), 1979–82

	1979	1980	1981	1982
1. Total employment (thousands)	8	6	2	13
2. Reduction in current account deficit (billion DKK)	1.3	4.6	8.7	12.4
3. Private employment (thousands)	-11	-36	-53	-62

Source: Det Økonomiske Råd, Formandskabet: Dansk Økonomi, November 1981, København 1981

According to the calculations, the positive employment effects of the rising public demand for labour exceeded the job destruction effect of the fiscal squeeze upon the private sector by around 13,000, this then being the net employment effect of the demand twist. At the same time fiscal policy improved the balance of payments. Demand twist and competition policy thus worked in the same direction, affecting both sides of the "balance-problem" positively.

It needs to be pointed out, however, that the calculations in question did not (and probably could not) take into account possible negative employment effects from the probable rise in interest rates that may have emanated from fears of continued devaluation, such fears increasing the margin of interest rates in Denmark over interest rates abroad warranted to secure some measure of private capital imports or at least preventing considerable Danish capital exports. Besides, it goes without saying that it is more than doubtful whether a demand twist policy of this scale could have been continued as a long-term strategy because of the consequences for the resource allocation, the tax burden and thus for private disposable incomes. As for resource allocation, the twist should of course be seen in the light of the risk of a substantial further amount of resources having otherwise been idle. But evidently there is a considerable risk that at "the end of the day", the capital stock of export trades etc. (and thus the basis of future expansion) will be smaller with twist policies than would otherwise have been the case.

Beginning already under the previous government but becoming especially manifest after the change of government in September 1982, weights and priorities in economic policies have been substantially changed over the last one or two years. A devaluation of the Danish krone is now out of question, at any rate as part of an active Danish exchange rate policy, as was clearly manifested in connection with the adjustments

within the EMS in the spring of 1983, where in fact the krone was revalued within the EMS. Obviously, there will be a need for continued adjustments from time to time within the EMS. Such adjustments could result in minor net movements, in both directions, of the Danish krone vis-a-vis the ECU, but initiatives for changes would hardly come from Denmark.

Not least as a result of the change in exchange rate policy, the decline in interest rates in Denmark since the end of 1982 has been stronger than in most other countries, the "warranted" margin over other countries being reduced *pari passu* with the increase of confidence in the stability of the foreign exchange value of the krone.

The change of exchange rate policy does not mean that earlier policy goals of improving Denmark's international competitiveness have been changed, but now the goal is to be obtained chiefly by way of incomes policies and through interest rate developments. New and tough incomes policies have been introduced and with impressive results with regard both to the "disinflation" reached and to the degree of public acceptance this policy has been met with. Price indexation of wages – earlier a "sacred cow" in the Danish labour market – has been abolished, the government's guidelines for the general wage negotiations have largely been respected and measures against wage drift have been adopted. In view of prolonged and in the past often heated discussions on compensation or guarantees to wage earners (through wage earners' funds, guarantees for investment and employment developments etc.) in return for restraint in wage claims, it is perhaps not least impressive that a brake on wage inflation trends has been achieved without any such strife. To some degree this changed reaction from the labour market is probably also due to the increased unemployment.

The snake in the paradise has been, however, that most other countries have also been experiencing strong progress in rolling back inflation (in some cases with even more impressive results than in Denmark) so that probably no further improvement of Denmark's international competitiveness has been brought about in 1983. Although some improvement may be obtained in coming years, and although – to use a transcription – "some coins may still be left in the telephone" from the insertions of increased competitiveness in earlier years, one may still doubt that this would sufficiently alleviate the seriousness of the Danish economic situation as pictured above.

In fiscal policy the change has been no less dramatic. The general contractionary stance of fiscal policy has been sharpened and will be even more pronounced next year (1984) according to the budget proposals of the government. The policy of demand twist in the direction mentioned above has clearly been stopped and followed by budget cuts, which have until now mainly had the form of brakes to rising expenditure trends, but will for 1984 mean direct cuts. In view of the fact that rises in private consumption are still held firmly down, it is as yet somewhat doubtful whether the earlier demand twist policy could be said to have been directly reversed, but clearly such reversal is now part of the long-term strategy. As shown below, the reversal shows up clearly in the medium-term outlook.

4 THE MEDIUM-TERM MACRO-ECONOMIC OUTLOOK

Detailed medium-term forecasts until 1987, based on simulations with the Danish macro-econometric model SMEC (Simulation Model of the Economic Council) and using exogenous variables partly agreed upon inter-Nordically and partly decided upon autonomously by the secretariat, are presented in Tables 4–8 below. Besides, some of the historical diagrams presented above have been prolonged through the forecast period.

Attention should once again be called to the fact that in the opinion of the secretariat the international inflation outlook now looks somewhat more optimistic (i.e. for somewhat smaller inflation) than the 6 per cent p.a. average rise in consumer prices agreed upon inter-Nordically as one of the basic exogenous variables to be used in the simulations of this report. As already touched upon, combining this basic assumption with Danish wage and productivity trends, as the secretariat would envisage them at the present moment, implies a built-in improvement of Denmark's international competitiveness during the forecast period.

During the forecast period internal demand will remain rather weak, due not least to first a direct cut and thereafter only very modest growth in public demand combined with an

Table III:4 Balance of resources and expenditure, 1967–87

Item	1982	Average annual change in volume, % ¹				1987
	Bill. DKK	1967→1972	1972→1977	1977→1982	1982→1987	Bill. DKK
Gross domestic product in market prices	474.4	4.3	2.4	1.5	2.0	692.9
Imports	164.9	4.9	5.2	0.2	3.5	241.1
– Goods	139.3	5.2	5.0	–0.3	3.5	202.1
– Services	25.6	3.2	6.1	3.3	3.4	39.0
Total resources	639.3	4.5	3.0	1.2	2.4	934.0
Exports	169.3	6.0	4.2	4.7	4.5	272.7
– Goods	132.9	5.7	4.7	5.4	4.5	213.6
– Services	36.4	6.7	2.4	2.2	4.6	59.1
Investments	76.3	5.4	1.0	–4.8	2.8	113.3
– Private	63.8	2.8	4.9	–1.3	3.7	99.2
– Public	12.5	6.3	–1.7	–1.6	–3.1	14.1
Consumption	394.0	3.5	3.6	1.4	1.0	545.5
– Private	262.4	2.7	3.7	0.1	1.5	374.4
– Public	131.6	5.7	3.3	4.6	0.1	171.1
Inventory changes ²	– 0.3	0.2	0.2	–0.2	0.1	2.5
Total demand	639.3	4.5	3.0	1.2	2.4	934.0

¹ In 1970-prices. The choice of pricebasis is of special importance to the aggregate import. The use of 1982-prices would have reduced the growth in imports from 3.5 to 2.5 from 1982–87 due to greater weight to energy imports

² Weighted contribution to GDP-growth

Source: Central Statistical Office of Denmark and own estimates

Table III:5 Balance of manpower resources, 1967–87
1000 persons

Item	1967	1978	1987	Changes			
				1967→72	1972→78	1978→82	1982→87
Population	4.839	5.105	5.103	153	113	13	-15
Population of working age (15–74 years)	3.485	3.717	3.848	127	105	90	41
Working age population not belonging to labour force	1.206	1.102	1.064	- 2	-102	48	-86
Labour force	2.279	2.615	2.784	129	207	42	127
Unemployment	28	191	379	11	152	72	116
Employment	2.251	2.424	2.405	118	55	-30	11
Unemployment rate, %	1.3	7.3	13.6	0.4	5.6	2.6	3.6
Labour force participation rate, %	65.4	70.4	72.3	1.3	3.7	-0.6	2.5

Note: 65,000 persons have withdrawn from the labour force due to early retirement scheme from 1978–82

Source: Central Statistical Office of Denmark and own estimates

Table III:6 Commodity exports, 1967–87

Branch	1982 Mill. DKK	Average annual change in volume, % ¹			
		1967→72	1972→77	1977→82	1982→87
Manufacturing	89 389	8.8	5.2	5.7	5.9
Agriculture etc.	43 533	1.1	3.8	4.9	1.3
Total commodity exports	132 922	5.7	4.7	5.4	4.5

¹ In 1970-prices.

Source: Central Statistical Office of Denmark and own estimates

Table III:7 Commodity imports, 1967–87

Commodity group	1982 Mill. DKK	Average annual change in volume, % ¹			
		1967→72	1972→77	1977→82	1982→87
Raw materials, etc.	49 547	6.8	2.7	1.7	3.1
Fuels and lubricants	30 188	6.1	-0.5	-7.6	-3.3
Investment goods	30 413	2.7	7.7	-2.9	} 4.6
Consumption goods	29 129	4.7	8.9	1.2	
Total commodity imports	139 277	5.2	5.0	-0.3	3.5

¹ In 1970-prices. The choice of pricebasis is of special importance to the aggregate import. The use of 1982-prices would have reduced the growth in imports from 3.5 to 2.5 from 1982–87 due to greater weight to energy imports

Source: Central Statistical Office of Denmark and own estimates

additional fiscal lid over private demand. Investments in new dwellings (which is an exogenous variable in the calculations) are supposed to rise by 4 per cent a year on average. This may be deemed low, considering the considerable and sustained decline in nominal interest rates (from their previous record heights), lying at the root of the simulations. What works in the opposite direction, however, is that in recent years the share of publicly financed housing in new construction has increased considerably and fiscal constraints will put heavy brakes on the continued expansion of these types of housing investments. As for private housing it should be taken into consideration that, partly as a result of the allocation effects of earlier, longlasting negative real interest rates combined with generous tax treatment of owner-occupiers, Denmark has already a very high housing supply and standard. Besides, the development of real disposable income seems to be a major determinant for the demand for new private dwellings, and in this field expectations could hardly be bright.

The investment function used in SMEC suggests only a moderate expansion of private fixed investments in industry, agriculture, trade etc. in the medium-term. This may run contrary to a widely held opinion that once inflation had been brought down, profit margins increased and public expenditure brought under control, a sharp turnaround of the previous lacklustre development of private investments would occur, the more so since much of the machinery standing idle will probably gradually have lost its economic value. However, in the investment function used in SMEC, estimated over the period 1956–1979, developments in final sales (as well as in real user costs) carry a heavy weight, and these factors do not give much hope for a strong revival of private investments in the medium term.

Under these circumstances industrial exports will, as shown in the tables, play the role as the most prominent expansive force with yearly rises of around 6 per cent in volume – a figure, however, where the upward bias of the simulations, mentioned several times, will be of special importance. Service exports can also be relied upon to expand rather rapidly. Shipping, of course, plays a dominant role in Danish service exports. Apparently shipping has not until now witnessed much of an upturn in the world economy. With the assumed international economic growth, a solid rise in world trade should, however, be

Table III:8 Taxes and income transfers, 1960–87
Per cent of GDP

Income transfer item	1960	1970	1980	1982	1987
1. Direct taxes	14.0	21.1	23.7	23.6	24.4
2. Social security contributions	1.4	1.6	0.8	1.3	1.9
3. Indirect taxes (net of subsidies)	12.0	14.6	16.2	14.9	14.2
4. Total current transfers from private sector	27.4	37.3	40.7	39.8	40.5
5. Current transfers to households	6.9	11.4	16.1	17.5	16.7
6 Net current transfer to public sector (4–5)	20.5	25.9	24.6	22.3	23.8

Source: Central Statistical Office of Denmark and own estimates

in the pipeline, and Danish shipping will of course also benefit from the strong dollar. Besides, exports of other services than shipping appear to constitute a growth sector (for reasons not quite being "mapped out" as yet). For agriculture, only weak expansion can be counted upon. Some years ago, there was widespread optimism inside and outside agriculture that Denmark had good chances to increase its agricultural exports by 3 per cent a year in real terms. Clearly, this optimism is now vanishing, both as a result of the crisis around the Common Agricultural Policy (CAP) within the EEC and as a result of the severe crisis many farmers have found themselves in in recent years (although this latter crisis was mainly a result of the distortions produced by inflation-adapted interest rates, particularly for producers who invested heavily when inflation and nominal interest rates were at their height, thereafter witnessing a strong deceleration of inflation combined this year with on average a poor harvest).

Considering not least the still rather weak investment development, imports in real terms, with the exception of imports of services, can be expected to expand only at a rate around half of that of real exports. A considerable further improvement of the balance of goods and services is therefore foreseen in the medium-term outlook in spite of some deterioration of the terms of trade. The improvement of the balance of goods and services of course also owes much to the substitution of imported energy by oil and gas from the Danish North Sea fields. Production from these fields will increase rapidly during the forecast period. (To be true, part of the payments for North Sea oil and gas will in the end show up as dividend payments etc. to foreign co-owners of the energy fields in question. However, this will happen only with a time lag and furthermore taxation will take its share before it happens, especially after the recent strengthening of the legislation on taxation of the oil and gas rent.)

The improvement of the balance of goods and services according to the simulations is so substantial that at the end of the forecast period the total current account will swing into surplus in spite of continued heavy interest payments to other countries.

The rather slow expansion of imports will mean that GDP-growth will on average be maintained at a relatively comfortable level, i.e. a growth rate roughly in line with the assumed international average in spite of the assumption of strong brakes to the internal demand in Denmark. Part of the effect of this braking is spilling over to other countries.⁷

In spite of the development thus foreseen in the GDP, unemployment remains a sad chapter, reaching according to the forecasts a level of close to 400,000 or 13–14 per cent of the labour force at the end of the period. Some consolation, however, may be sought in the fact that employment and unemployment are not developing along similar lines. Total employment should cease falling in the course of only a few years, the rise in unemployment being therefore primarily the result of continued increase in labour market participation rates. Practically all of the increase in labour supply is now due to the continued high increase in the participation rates of married women.

As mentioned, the development foreseen for the forecast period implies a clear reversal of the demand twist policies that were pursued earlier. The prime mover in this reversal is the strong export development assumed.

From what has been stated it follows that with the policies assumed, Denmark will be on the right track in as much as an extrapolation over a sufficiently long period will eventually lead to the desired economic equilibrium. It will take a very long time, however, to reach this and for at least another decade unemployment must be expected to remain a very serious problem. Besides, many disturbances or even shocks of both an external and an internal nature could occur. Probably, therefore, it will be a central question in the years to come whether such slow adaptation will be acceptable or not.

In concluding this chapter on Denmark it may be of interest to compare the results of the medium-term outlook with various scenarios that have been presented in our reports in order to support a discussion of future economic policies in Denmark.

The medium-term outlook certainly looks better than a scenario which has been presented as a starting point ("reference scenario") for the discussion and in which unchanged international competitiveness was assumed. On the other hand the outlook presented here falls far behind the stage in which the Danish economy would have found itself by now in case of an even stronger improvement of our competitiveness than the one that took place from 1979 and onwards. In a third scenario carried through (and one that cannot be rejected as unrealistic on the basis of the employment prospects depicted above) a shortening of working hours was used to replace increased competitiveness as a remedy against unemployment.

The development under such a scenario hinged critically on whether the working time reduction was compensated for through higher hourly earnings or not. The first variant was termed an antisolution, resulting in a decrease of international competitiveness, necessitating strong fiscal and monetary restraint and thus, paradoxically, calling for a further shortening of working hours to compensate for the employment effects of the fiscal restraint. However, under the circumstances of today, a shortening of the working hours would probably be carried through in several countries at the same time, the effects thus being different from those shown in the scenario in question. Thus, if a shortening of working hours is carried through more or less as a coordinated international action (for instance inside the European Economic Community) it would not give rise to the same problems of weakened international competitiveness as when carried through in a single country. On the other hand, a coordinated international shortening of working hours could lead to a slower rise in international demand than would otherwise have been the case. Economic facts may be "tough chaps" to fight against.

APPENDIX

SECTORAL POLICIES AND STRUCTURAL CHANGE IN DENMARK

by Anders Bjerre, Institute for Futures Studies, Copenhagen.

This paper has two main parts. In part I the temporal perspective is the last and the present decade; the subject matter is the sectoral and labour market policies. In part II, the temporal perspective is somewhat longer, looking at developments since the early 50s. In this period Denmark was transformed from a society still largely dependent on agriculture to a highly industrialised economy and further still to a service-dominated economy.

I SPECIFIC SECTORAL AND LABOUR MARKET POLICIES

The essentially liberal nature of Danish economic policies has been preserved through the last decade. While labour market policies developed considerably through the 70s sectoral policies – or policies for structural change – have not been very important. The private sector of the economy is of course influenced by the general macro-economic policies, but else – with some important exceptions – left to be governed by the play of the market forces. This means that lame ducks are usually allowed to die – as indeed many have.

The strategy of 'picking the winners' has been discussed, but largely rejected, leaving the market to do the job – with some help in the form of support for 'technological service centers', for R&D in industry, etc. In principle, it is possible to establish new productions with a large measure of public support, provided that they do not compete with existing productions. This arrangement is politically very controversial, but of little consequence in practice.

The liberal nature of the economic policy has not prevented the development of some subsidies. Leaving aside subsidies for consumer goods – e.g. milk – the subsidies for the market sector of the economy have grown from 1.1 per cent of GDP in 1971 to somewhat less than 1.8 per cent of GDP in 1981. This includes subsidies for special labour market support schemes, but not various interest rate subsidies. Support for manufacturing industry on the budget for 1982 amounted to just above 1.3 billion DKK – less than 0.3 per cent of total GDP but more than 1.7 per cent of GDP in manufacturing. This includes support for export activities (DKK 210 million), support for the semi-public technological service and development centers as well as loans and grants for R&D expenditure in manufacturing companies (DKK 582 million) and support for manufacturing investments in regional development areas as well as for small-scale industry in general (DKK 461 million).

The above figures do not include various state-supported credit schemes. The most important of these are the general export credit guarantees and the special guarantee scheme for exports to developing countries; the 'ceilings' for these guarantees were DKK 80 billion in total in 1982. Besides this, there are various credit support schemes for industrial investments, with a ceiling of about DKK 1.4 billion in 1982, and a very favourable support scheme for shipbuilding.

If the net value of these credit arrangements is included it was estimated that the total support for manufacturing industry would amount to around DKK 3 billion in 1982 (Ministry of Finance, April 1982). Incidentally, the value of these schemes has been greatly reduced in 1983, as interest rates in general and the Danish in particular have decreased.

Other main beneficiaries of state subsidies are housing and agriculture. As privately owned dwellings are indirectly subsidized through interest rate deductability, non-profit housing organisations receive subsidies for their interest rate payments, as well as capital grants. These amounted to a total of DKK 2.6 billion in 1982. The same year, loans, credit guarantees and other subsidies for agriculture amounted to a total of DKK 0.9 billion.

Actual state ownership of industrial firms is fairly unimportant, amounting to industries with a turnover of something like DKK 1.5 to 2 billion. Besides that, the public sector controls or owns postal and telecommunication services and most public transport, including the railway system (while many ferries and most road haulage are operated by the private sector). Furthermore the state is involved in life assurance and in the development of the North Sea oil and gas resources.

Labour market policies have been fairly unambitious in Denmark. In the late sixties, unemployment benefits were greatly magnified, as was the coverage of the system. Besides this, some measures for improving the labour market mobility were introduced – sectoral mobility as well as geographical mobility was supported in various ways.

In the light of a considerable rise in unemployment since 1973 there has been much talk about the possibilities of more 'aggressive' employment policies, but the actual measures have not been impressive, except for a fair measure of support for building and construction activities in the mid-seventies, as well as for energy-saving investments. The reason for the selection of these activities is the high employment effect and low cost – or the benefit – to the current account of the balance of payments. The same consideration applied to the very considerable expansion of public employment.

At the end of the seventies, the labour market support measures became somewhat amplified. Besides an extension of the training activities, a special early retirement scheme was introduced, and a 'job offer' arrangement for longterm unemployed persons became mandatory for the municipal administrations. This scheme must be classified as a failure in the sense that the overwhelming part of the job offers have had to be made

within the public sector, in spite of subsidies for private sector employers as high as 60 per cent of the going wage rate, in case they would create 'special job offers'.

The net effect of the extended training and early retirement schemes on the reduction of unemployment is difficult to ascertain, but a figure of between 40,000 and 60,000 people seems likely. The coverage of the various special employment schemes was less than 20,000 people (measured on a full time/annual worker basis) in 1981. These figures can be compared with a labour force of 2.7 million and 243,000 registered unemployed in 1981.

There has been much discussion of the possibilities for reducing unemployment through a shortening of working hours, and a reduction of the standard 40 hour working week to 35 hours is often mentioned. Since the labour organisations are unwilling to accept a similar overall drop in income – and since employers fear a shortage of skilled labour in such a case – a 5-hour reduction of the working week seems unlikely in the near future, while a reduction of 1–2 hours before 1987 cannot be excluded. In any case, there is a trend towards a shortening of average working hours as the extent of parttime employment is increasing.

In part, the high figures for registered unemployment can be explained by the fact that it is comparatively easy to lay off employees in Denmark, compared with the situation in most other countries in Western Europe. At the same time the fact that unemployment benefits, though falling in real value these years, are still fairly generous compared with most other countries means that the incentive for a person to stay in the labour market, although he may be quite unlikely to get another job, should be much more pronounced in Denmark. This means, inter alia, that hidden unemployment is probably quite low in an international comparison. Besides, a large part of the registered unemployment is transient, involving people with rather short unemployment periods. In 1982, 720,000 people were affected by unemployment in one or several periods through the year. The average duration of the unemployment periods was 8.3 weeks, indicating a considerable flexibility in the labour market.

II LONG-TERM STRUCTURAL CHANGE IN DENMARK

A dominant feature of the post-war growth process in Denmark – as in many other countries – has been the declining importance of agriculture and the growth in industry, to an increasing degree replaced by the tertiary sector.

The long-term trends in the development of GDP by sectors are shown in Table 1. In this, the structure at three points of time is given, as well as the growth rates for the intervening periods.

Through both of the periods – 1950–1966 and 1966–1981 – the growth of agriculture is far below the growth of GDP, while industry (excl. the construction industry) grows faster

than GDP. The same applies to the service sector. The most notable development is the turnaround for the building and construction industry in the second period. While this sector was the fastest growing in the first period, it declined by 3.0 per cent per annum on average in the later period.

The Changing Structure of Employment

The labour force grew by 1.3 per cent per annum on an average in Denmark in the 1950–80 period. While the total number of people grew by 0.6 per cent per year, as did the number in the age group 15–65 years, the participation rate grew from 65.8 per cent to 88.0 per cent. (Labour force/number in 15–65 year age group).

The growing participation rate was the result of a strong growth in the participation rate for women – a growth which has been considerably faster and reached a higher level than in most other developed countries, excepting Sweden.¹ Hence, the share of women in the labour force increased very considerably.

As statistical definitions changed in 1979, the following remarks will refer to the 1950–79 period. In that period, the labour force grew by 798,000 people. Of these, all went to services, and more, the declining employment in agriculture more than offsetting the slight growth in manufacturing employment and – relatively speaking – somewhat larger growth of employment in the building and construction industry.²

The growth in services was mainly in the public sector. Of the total increase of 858,000 people, 580,000 went to public non-market services, i.e. just above two thirds of the growth in service employment.

Table A1 Structure and growth of GDP by sectors, 1950–1981

	Per cent of GDP, current prices				Average annual change in volume, %	
	1950 ¹	1966 ¹	1966 ²	1981 ²	1950–66 ³	1966–81 ⁴
Agriculture, forestry, fisheries	21.2	10.3	9.0	5.6	1.2	1.4
Industry	29.2	30.8	24.6	21.0	4.5	3.3
Construction	6.6	9.0	11.7	5.4	4.7	-3.0
Services	43.0	49.8	57.1	71.1	4.0	3.6
GDP	100.0	100.0	100.0 ⁵	100.0 ⁵	3.8	2.8

Notes: ¹ Old SNA, ² New SNA, ³ 1955 prices, ⁴ 1975 prices, ⁵ The sum of the figures in the columns is larger than 100.0 per cent as imputed bank service charges – a negative item – is not shown in the table.

Note that the figures for the composition of GDP are in current prices whereas the growth rates shown for the various components of GDP are in volume terms, i.e. real growth rates

Sources: Statistisk oversigt 1950–60, Statistisk tiårsoversigt 1970, Nationalregnskabsstatistik 1966–1981. Central Statistical Office, Copenhagen 1961, 1970 and 1983.

This development was much more pronounced in the second half of this period. From 1966 to 1979 there was a large decline in the combined employment of agriculture, industry and construction, and total employment in the economy grew by just 22,000 people.³ There was some growth in the employment of market services (90,000), but the overwhelming part of employment growth was in the public sector non-market services (365,000). There was a considerable decline in the number of domestic servants/housemaids – the number being now of negligible proportions – and total service employment grew by 416,000 people.

It is evident that the main generator of employment since 1966 has been the growth of public consumption. It is noteworthy but hardly surprising, that in the same period the total of direct and indirect taxes and social security contributions grew from 32.5 per cent of GDP to 44.5 per cent.

The Structure of the Production System

The declining importance of agriculture and growing importance of services in total GDP have been noted. In this section the emphasis is on the relationships between the sectors.

The following analysis is based on the input-output tables for 1953, 1966 and 1979.⁴

The analysis shows the changing importance of the various outlets of production, or markets: Final consumption (public and private), investments, exports and intermediate consumption.

- i. In most sectors, the importance of final consumption within Denmark as a market declines considerably. This is not seen clearly from aggregate figures. The reason is that in the period considered, the importance of nontrading sectors (the building and construction industry and the public sector) grew rapidly. For the economy as a whole, this has the statistical effect of pulling up the average consumed within the country.
- ii. At the same time, the importance of exports as an outlet of production grew in most of the trading sectors. The only notable fall in the importance of exports is found for transportation and communications.
- iii. The last component of final demand – investments – declined somewhat in importance in the period. This is not explained by low investments in the terminal year, but probably by a growing international division of labour in the production of investment goods. A large part of the investment goods produced in Denmark is exported and is of course registered as exports in the input-output tables. Conversely, a large part of investments in Denmark consists of capital goods from foreign producers.

Table A:2 The use of output: Intermediate and final demand, 1953 and 1979

	Intermediate consumption in own sector		Intermediate consumption in other sectors ¹		Final consumption (private+public)		Investments ²		Exports		Total demand 1953/1979
	1953	1979	1953	1979	1953	1979	1953	1979	1953	1979	
1. Agriculture	—	12	18	69	27	6	1	0	53	16	100
2. Food industry	5	19	7	9	67	31	2	0	19	42	100
3. Metal industry	19	11	14	22	11	6	34	18	22	42	100
4. Building and construction	—	—	—	—	5	5 ⁵	95	95 ⁵	—	—	100
5. Other industries	16	16	25	30	44	26	8	3	7	26	100
6. Trade	1	1	15	26	69	52	7	7	8	13	100
7. Transport, communication	3	11	19	30	31	25	2	—	44	34	100
8. Other private services	4	6	19	26	77	64	9	0	1	0	100
9. Public services	—	—	—	—	100	100	—	—	—	—	100
10. Total output (gross)	(6)	(8) ³	22 ⁴	32 ⁴	45	40	14	11	19	16	100
11. Imports	—	—	61	57	25	20	12	11	2	13	100
12. Total resources	—	—	28	37	42	36	14	11	16	16	100

Notes: ¹ Excl. intermediate consumption in the public sector. ² Incl. increase in stocks. ³ 7 per cent if agriculture is excluded. ⁴ Incl. 'own' intermediate consumption. ⁵ This distribution is found by assuming that between 1/4 and 1/5 of intermediate consumption in 1979 in the 1953-model would be classified as final consumption.

Sources: Nationalregnskabsstatistik (National Accounts Statistics) 1947–1960 and 1966–1981. Copenhagen 1982 and 1983

Table A:3 The structure of input: Cost components of production, 1953 and 1979.

Shares in per cent of net production in sector (excl. intermediate consumption from own sector) in basis prices (excl. indirect tax, etc.)

	Intermediate products from other sectors ¹						Imports		Value added		Total 1953/ 1979
	All sectors		Industry		Services						
	1953	1979	1953	1979	1953	1979	1953	1979	1953	1979	
1. Agriculture	12	32	7	19	5	13	11	16	77	52	100
2. Food industry	56	63	12	6	6	8	11	11	32	26	100
3. Metal industry	18	20	7	7	10	13	24	29	58	51	100
4. Building and construction	38	45	29	28	9	17	7	12	55	43	100
5. Other industries	15	16	5	3	8	13	28	37	57	47	100
6. Trade	11	19	7	5	5	13	2	3	86	79	100
7. Transport, communications	7	15	3	5	4	9	19	18	74	67	100
8. Other private services	7	12	5	7	2	5	1	3	92	85	100
(8a. O.p.s., excl. housing)	12	19	8	11	4	8	2	5	87	77	100
9. Public services	—	20	—	6	—	14	—	4	100 ²	76	100
10. Total excl. public services	18	26	9	9	6	11	14	15	68	59	100

Notes: ¹ Excl. from building and construction. Inputs from this sector is counted as investment.² By definition. This has since been changed, as seen from the table.

Sources: Nationalregnskabsstatistik (National Accounts Statistics) 1947–1960 and 1966–1981. Copenhagen 1962 and 1983

- iv. Intermediate consumption grew in importance through the period, indicating a growing division of labour in the economy.

As regards the development in the cost components of production, the problems caused by changing definitions in the basic data are somewhat more serious. The following statements regarding the structure of inputs, or cost components, seem fairly certain, but are not proved beyond all doubt.

- v. In accordance with the observation under point iv. (the growing importance of intermediate consumption) a falling share of value added in gross production is found in most sectors.
- vi. Input of marketed services, as measured in current prices, grew in importance in all major sectors. This may in part be explained by growing relative prices of marketed services, but in the face of available evidence it seems to present a real trend as well.
- vii. In the sectors producing tangible goods material inputs (including import) grow in importance as well, indicating an increasing division of labour in the production of tangible goods. There is no clear trend in the use of material inputs in the production of marketed services.
- viii. Due to the treatment of the public sector in the 1953 tables, it is not possible to analyse the development trends in the inputs into public services. It can be seen, however, that in 1979 this sector had relatively larger inputs of marketed services and relatively lower inputs of material goods than the rest of the economy. This indicates that most likely a growing share of the production of marketed services has been used as an input in the public sector.

CONCLUDING REMARKS

A forecast of the long-term structural development of the Danish society has not been attempted. The aim of the paper has been descriptive: to point to some important structural changes, emphasising the role of 'services' in production.

While many of the observed tendencies can be expected to continue, this will hardly hold true for public sector growth. The growth of the provision of services by the public sector without cost to the immediate user seems to be bound to decline. The rise in the tax burden necessary for continued growth of the public sector, over and above the rate of growth of the economy in general, is not politically possible. This may cause at least two major changes in the role of the public sector.

One change regards the way in which what has been called public services are produced in the future. Some public services could be produced by private firms, although still financed by the public sector; this would perhaps in some cases make production more efficient, lowering the cost to taxpayers. In other cases, changes in the regulation of activities within the public sector may make this more efficient. Some changes regarding budgeting rules are presently under consideration.

Another change regards payment for (some) public services. If no longer provided free of charge or at a subsidised price, a reduction of the consumption of these services is to be expected.

Both of these (possible) changes are of course well known from the political discussions in other countries. They will meet considerable resistance from well-entrenched interest groups. Whether the changes carried through will in fact become large enough to have important effects on the structure of production and consumption in a 10- or 15-year perspective is difficult to judge at the present time. Given the prominence of the public sector in the Danish society, firm conclusions about the structural developments will in any case have to be based on political judgements.

NOTES

- 1 As mentioned in the foreword this chapter, with the exception of the appendix, has been worked out by the Secretariat of the Danish Economic Council (Det Økonomiske Råd). The Secretariat wants to stress that the council as such carries no responsibility whatsoever for any of the information and judgements about the Danish economy contained in this book. The responsibility rests solely with the Secretariat. The Danish authors have further pointed out that a certain caveat would be in place with regard to the projection of Denmark's international competitiveness in connection with the medium-term forecast. The forecast is based upon recent Danish wage developments, marked by a strong deceleration of wage inflation, but on a common assumption on international inflation agreed upon at an early date by the main authors of this report and today perhaps at the upper limit. Combining these two sets of assumptions may mean that the assumed development of Denmark's international competitiveness may to some extent be upwardly biased.
- 2 Obviously such analogies tend to be more misleading than instructive. Changes in tax rates and expenditure legislation may have thoroughgoing effects on production and employment, the balance of payments, wage and price rises, the income distribution etc. Fiscal policy should be judged from its effects in these fields, and not be worked out from private-economic conceptions and analogies. Even in a narrow budgetary context this may be misleading. If, for instance, governments in a period of depression try to maintain a given fiscal balance through tax increases and expenditure cuts, this will tend to be counter-productive also in the sense that the resulting deepening of the depression will lead to a reduction of the tax base and thus of tax revenues at given rates and to a further rise in expenditure. For a closer analysis of this, see OECD Economic Outlook, July 1983.
- 3 In line with the international economic experience of 1982–1983, several international reports have tended to underline that possible links between public deficits and interest rates do not originate in the development of the deficits as such, but in the markets' fear of future budget deficits. See for instance OECD Economic Outlook, July 1983, and Bank for International Settlements (BIS), annual report, June 1983.
- 4 Compare also A.J.C. Briton: Public Sector Borrowing in National Institute Economic Review, London, February 1983.

- 5 It is evident, however, that around the time of the downgrading undertaken by Standard & Poor's, there were widespread fears in Denmark that some day Danish holders of Government bonds would see this part of their wealth cancelled. But even this fear would seem to have been irrational. In case of runaway growth in the debt of the public sector, it is far more likely that the problems would be solved through general taxes on income and wealth than through a special taxation of holders of Government bonds (which is, of course, what a cancellation of such bonds would mean in practice).
- 6 The fiscal policy carried through during that period consisted mainly of a series of successive ad hoc measures. It would be difficult to find government declarations in advance that demand twist was its purpose.
- 7 In connection with an appraisal of this in other countries it should be remembered that through permanently high balance of payments deficits, Denmark has in the past contributed more than a widow's mite to sustain total demand abroad.

Appendix

- 1 In 1980 the participation rate for women in Denmark was 71.4 per cent, while that of OECD-Europe as a whole was 48.4 per cent. In Sweden, it was 74.1 using the same definitions. (OECD, Historical Statistics 1960-81).
- 2 Strictly speaking, these figures are for the growth of the number of people 'connected to' the labour market/the sectors discussed, i.e. they include unemployed. As the unemployment rates were high in 1950 as well as in 1979, this is not thought to present any major source of distortion. Source as Table 3 in the statistical appendix.
- 3 These figures are from the national accounts statistics. They do not include unemployed people. Part-time workers are counted as the corresponding fraction of a full-time employee.
- 4 It should be underlined, however, that there are very large differences in the definitions used in the basic statistics for these tables. It seems proper to warn the reader against drawing firm conclusions from the figures presented. They can be used as illustrations of the statements presented above, and else as describing general orders of magnitude. This caveat applies to the 1953 figures, and hence to an analysis of changes in the structure, not to the 1979 figures.

CHAPTER IV

FINLAND: COMING DOWN TO INTERNATIONAL GROWTH RATES

CONTENTS

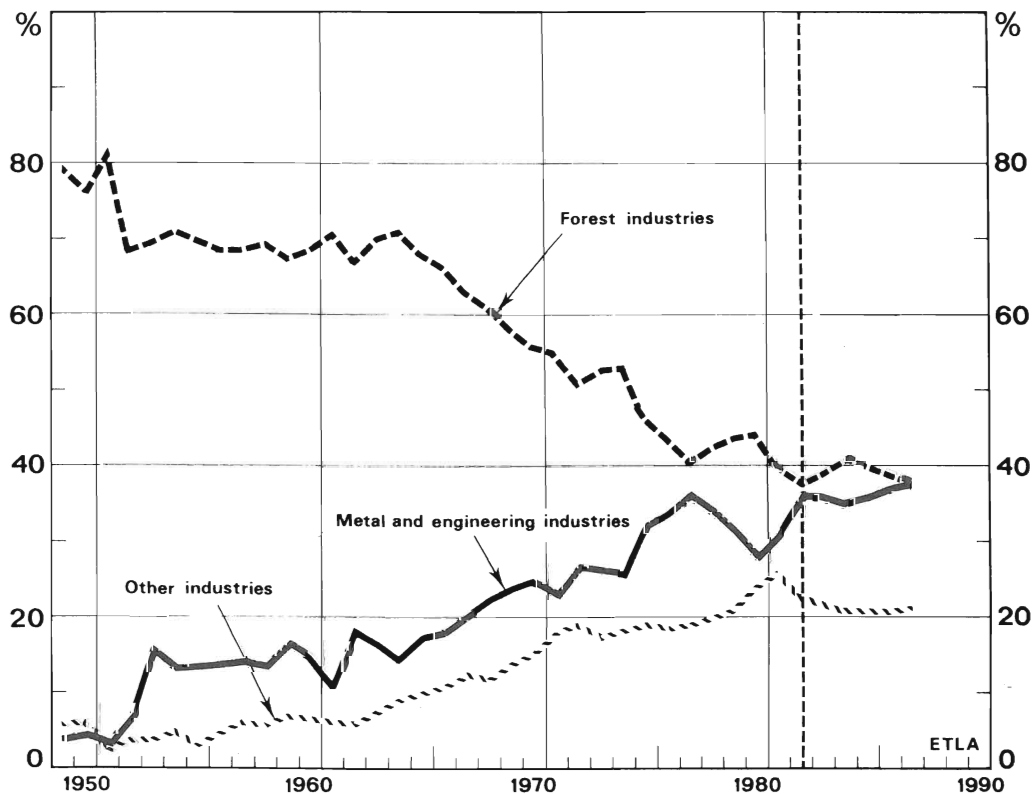
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1 INTRODUCTION

1.1 Basic Outlines of the Finnish Economy

One of the most important features about postwar economic developments in Finland has been the increasing openness of the economy. This process, which has included – among other things – the association agreement with the European Free Trade Association and the free-trade agreement with the EEC as well as corresponding agreements with CMEA countries, has meant a growing participation in international trade and a greater opportunity to benefit from expanding markets both in East and West. The share of exports in GDP has increased from 15–20 per cent at the beginning of the 50s to approximately one third in the early 80s. The share of exports in industrial production has grown to about 50 per cent.

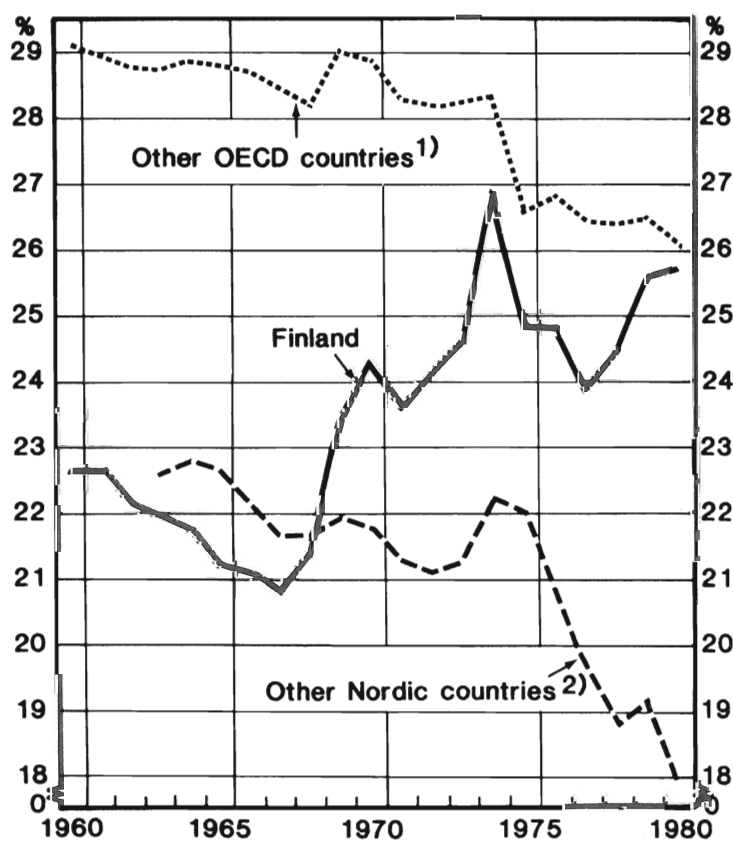
Figure IV:1 Commodity exports by industries, 1949–87
Per cent of total commodity exports



Sources: Saralehto-Vajanne: Index Series for Foreign Trade (in Finnish), ETLA, Helsinki 1981, and Foreign Trade Monthly Bulletin

At the same time the composition of exports has rapidly changed, although the share of various forest products in total exports is still very large; about 40 per cent (see Figure 1). The most important among the new export branches, which undoubtedly have gained

Figure IV:2 Share of manufacturing in GDP, 1960–80
Per cent



¹ Average of Australia, Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Portugal, Spain, Turkey, United Kingdom and United States

² Average of Denmark, Norway and Sweden

Source: OECD Economic Survey, Finland, Dec. 1982

advantages from new markets and where particular expertise has been developed, are perhaps forest industry equipment, metallurgy and mining machinery, shipbuilding, and fashion clothing and textiles. In addition, the construction industry and consulting firms have made an important contribution to a notable increase in service exports.

The volume of Finnish commodity exports has in the postwar period grown by about 6.5 per cent p.a. on average and industrial production by approximately 5.5 per cent, which is clearly faster than total GDP. The increase in the share of manufacturing in total production – not experienced by most other OECD-countries – has taken place mainly in the late 60s and early 70s (Figure 2).

Important supply-side factors contributing to the extensive export-led growth of industrial production have included a rather favourable cost structure of many industries and the technological gap between Finnish manufacturing and manufacturing in the most highly industrialized countries. The importance of these factors is, however, diminishing quite rapidly and many manufacturing firms are facing the requirement of renewing their strategies under conditions where non-price factors are becoming more significant in maintaining competitive positions.

The course of development described above is also reflected in the following table on the most important exporting firms, where the multibranch and engineering corporations predominate. 20 to 30 years ago this dominating role was mainly held by pulp and paper manufacturers.

The structure and specialization of Finnish exports is described in detail in the statistical supplement in this volume (A note by Jukka Leskelä).

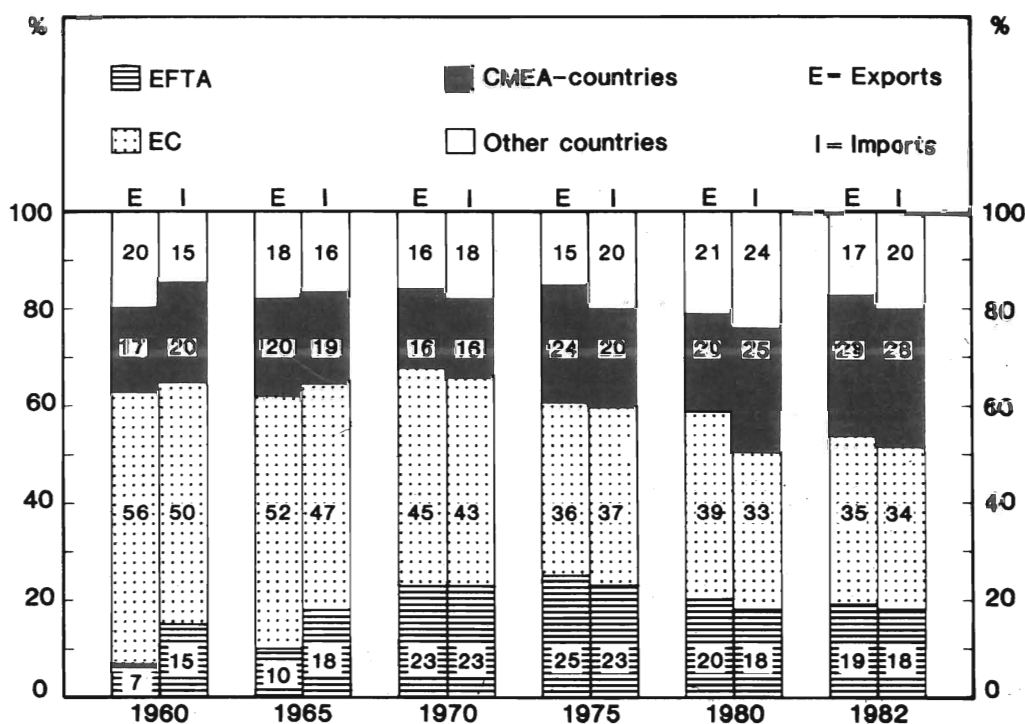
Table IV:1 The ten biggest exporting firms in Finland 1982

Firm	Main products/branches	Exports mill. FIM	Share in total Finnish exports, %
Rauma-Repola	Engineering, forest industries	3 640	4.8
Enso-Gutzeit	Forest industries	3 386	4.5
Neste	Petroleum refining	2 752	3.6
Finn-Stroi	Construction	2 597	3.4
Wärtsilä	Machinery, shipbuilding	2 532	3.4
Outokumpu	Mining, basic metals	2 498	3.3
Nokia	Electrical machinery, chemicals	2 247	3.0
Yhtyneet Paperitehtaat	Pulp and paper	2 084	2.8
Valmet	Machinery, shipbuilding	1 985	2.6
Ahlström	Paper, paper products	1 790	2.4
Total		25 511	33.8

Source: Talouselämä (a Finnish economic weekly) 19/1983

Owing to the small population of the country (less than five million) and the relatively narrow base of its natural resources, the exposure of the Finnish economy to the world market is both natural and necessary. As a consequence, its economic policy problems are largely related to foreign trade and especially to the composition of Finnish exports. World trade in Finland's major export products i.e., timber products, pulp and paper – has typically experienced larger volume and price fluctuations than other industrial goods, and this has made the whole economy particularly sensitive to impulses from world trade. Strong export-led cyclical upturns have been of notable importance for long-term growth in Finland, which has been slightly faster than the average for the OECD area, but they have often resulted in overheating of the economy, accelerating inflation and a subsequent weakening of competitiveness, combined with a deterioration of the external balance. This, in turn, has called for tightening of economic policy leading to a slowdown in domestic demand. Since improving the competitive position by lowering the domestic inflation rate has often proved too long a process, devaluations have been resorted to. Through a sequence of events described above, sensitivity of the exporting sector to fluctuations in the world market has been an important factor behind the large variations in growth rates, in inflation rates, in competitiveness and the subsequent difficulty to reach internal and external balance simultaneously.

Figure IV:3 Finnish foreign trade by countries, 1960–82
Per cent of total exports and imports



Source: Board of Customs, Foreign Trade Monthly Bulletin

Although the volatility of cyclical variations has been quite notable also in the post 1973–74 period, the external balance has not been regarded as such a significant constraint for economic policy as it had previously been. A clear shift of emphasis in economic policy from short-term stabilization towards longer term structural policy has taken place. In order to maintain the international competitiveness, a more flexible exchange rate policy and a policy of fostering structural change through various measures have been adopted. In contrast to, e.g., Sweden and Norway no extensive subsidizing of firms or industries has been resorted to.

Along the lines of the 1977 economic policy programme, the central objective of the policy has been to stimulate the expansion of the open sector of the economy, restraining at the same time the growth of the public sector. Hence, during the last five years the growth of total output in Finland has to a great extent been based on the increase in production of the open sector industries.

In addition to economic policy actions, bilateral trade with the Soviet Union has had a significant bearing on the growth of industrial output in the years of rising oil prices, since Finland imports most of her crude oil requirements from the Soviet Union. As increases in oil prices have typically been followed by low export demand in western markets and growing exports to eastern market – due to the bilateral nature of the trade – this has created a built-in-stabilizer against unexpected oil price changes. Subsequently the share of the Soviet Union in Finland's exports has grown rapidly since the mid-70s, so that it rose to almost 30 per cent in 1982. Otherwise, regional shifts in world trade have not affected Finnish exports significantly in the post 1973–74 period. The share of developing countries in Finland's total commodity exports is less than 10 per cent, which is approximately one third of the OECD average.

1.2 Recent Developments and Points of Departure

In recent years economic growth in Finland has been considerably faster than the average for industrialized countries. Over the five-year period from 1977 to 1982, the volume of GDP grew at an average annual rate of 4 per cent. The corresponding figure for the European OECD countries was about 1.6 per cent.

After the mid-1970s Finland was affected by an exceptionally deep recession. The recovery which followed, and had partly been brought about through economic policy, was even faster than expected. As indicated above, one important factor which influenced the course of development was a strong growth of exports to the Soviet Union in the years 1980–81. During the past couple of years growth has distinctly decelerated, and in 1983–87 it is likely to prove more modest than it was during the preceding five-year period.

The process of fast structural change has also in recent years continued in Finland, though not in the form of great shifts between sectors, as in the 1960s and the early

1970s. The service industries' share in both the labour force and the value added has slightly increased. Yet, the changes that have occurred have taken place more within than between the various industries, and particularly in the labour market and the financial markets. As in many other countries, a central feature about the labour market has been a substantial growth in the supply of labour. This has been partly due to a rise – especially among women – in the participation rates and partly to a change in the age distribution of the population, so that an increasing proportion of it represents the age groups best suited to participation. Despite the growth of the demand for labour, which has also been exceptionally strong, the rapid growth of the supply of it has kept overt unemployment high.

Along with unemployment, the rise in domestic costs and prices has become a central economic policy problem. In 1983–84 the rate of inflation will remain higher in Finland than in her most important competitor countries. Keeping Finland's price competitiveness on a reasonable level during the period 1983–87 will call for very skilful economic policy making, especially in the last years of the period.

The investment ratio has dropped during the last few years in Finland approximately to the OECD countries' average level, despite a considerably faster growth of output. This is partly due to the diminishing needs for infrastructure and housing investment. However, there are also some sectors of manufacturing industry where the growth rate of capital stock cannot be considered satisfactory in view of the longer-term growth and competitive prospects. This also means a challenge to future economic policies.

The state of government finances will impose a new central constraint on the public sector's expansionary policy. The growth rate of public expenditure has decreased somewhat during the last few years, but not to the extent set as a target in the government's medium-term policy programme in the late 1970s. Preventing the gross tax burden from rising has also been an important policy goal. As a consequence the indebtedness of the central government has begun to rise rapidly. Hence, the potential for reflationary policies in the near future is being eroded.

2 GROWTH PROSPECTS FOR 1983–87

2.1 Main Features of Economic Prospects

Principal features about economic developments in Finland are presented in Table 2, in the form of a balance of resources and expenditure. The volume of total output is forecast to grow at an average annual rate somewhat below 3 per cent over the years 1983–87. The prospective average growth of exports is estimated at about 4 per cent and that of domestic demand at somewhat less than 2 per cent. The balance of trade will remain tolerable, and the demand for labour will grow significantly. Because of the increasing supply of labour the unemployment rate will not decline more than to 5–5.5 per cent.

The central background assumptions for these developments include the following:

- the price of oil will stay nominally at its March 1983 level through 1984 and rise thereafter in step with the world market prices of manufactures, as presented in the second chapter;
- the efforts to balance trade with the socialist countries will proceed smoothly, and attempts will be made to avoid reducing the volume of this trade sharply during the first years of the period;
- efforts will be made to balance central government finances by restraining the growth of expenditure throughout the survey period;
- the rise in Finland's average cost level is expected to be equal to the rise in costs in our competitor countries in the years 1985–87.

2.2 Foreign Trade and External Balance

As stated above, the average growth rate of Finnish exports over the period 1983–87 is estimated at 4 per cent per annum. This means that exports to the West are anticipated to grow definitely faster than this, for exports to the East are forecast to decrease in volume in 1983–84 and to grow only slowly during the last years of the period. This is due to lack of balance in trade with the Soviet Union, caused by the movement of the price of crude oil, which is the most important item in the trade between the two countries.

Table IV:2 Balance of resources and expenditure, 1967–87

	1982* bill. FIM	Average annual change in volume, %			
		1967→72	1972→77	1977→82	1982→87
Gross domestic product	236.7	5.8	2.2	4.0	3
Imports	74.3	7.9	2.8	4.1	2.5
Total resources	311.0	6.3	2.3	4.0	2.5
Exports	75.5	9.5	0.4	5.2	4
Investment	56.9	6.0	0.4	0.9	1.5
– private	49.0	7.1	0.7	0.7	1.5
– public	7.9	0.3	–1.0	2.5	1.5
Consumption	178.7	5.5	2.9	3.5	2
– private	131.3	5.4	2.1	3.3	2
– public	47.4	5.7	5.4	4.2	3
Inventory changes	– 0.1	..	..	..	..
Total demand	311.0	6.3	2.3	4.0	2.5

Sources: National Accounts and ETLA's estimates

The export forecast by commodity groups is presented in Table 3. Growth is fastest in the forest industries, whose exports are likely to increase considerably during the first years of the period owing to a growing cyclical demand in Western markets. On the other hand, the growth rate of exports of the engineering industries and consumer goods industries will significantly decelerate as compared with the preceding five-year period. This is mainly due to the weakening prospects of Eastern trade.

Much uncertainty is associated with international economic developments as indicated in the second chapter. The possibility exists that recovery proves definitely slower than expected in the basic assumptions. If, e.g., the average annual growth rate of Finland's western customer countries' industrial production were one per cent lower than according to the basic assumption, the growth rate of total commodity exports would be – on the basis of model calculations – 2.5 per cent per annum and result in a growth rate of GDP of 2.5 per cent. This alternative would also mean that the average unemployment rate would rise above six per cent during the period under survey.

The volume of imports is estimated to grow distinctly more slowly than that of exports and the trade balance would remain good. The balance of payments on current account is likely to stay slightly in deficit.

Table IV:3 Commodity exports, 1967–87

Branch	1982 mill. FIM	Average annual change in volume, %			
		1967→72	1972→77	1977→82	1982→87
Wood industry	6 278	7.8	-2.2	3.0	4.5
Paper industry	17 502	5.1	-1.5	4.6	3.5
Metal and engineering industries	22 683	9.1	10.2	5.8	4
Other industries	14 677	20.1	7.6	7.3	2.5
Total commodity exports	63 026	10.0	3.7	5.3	4

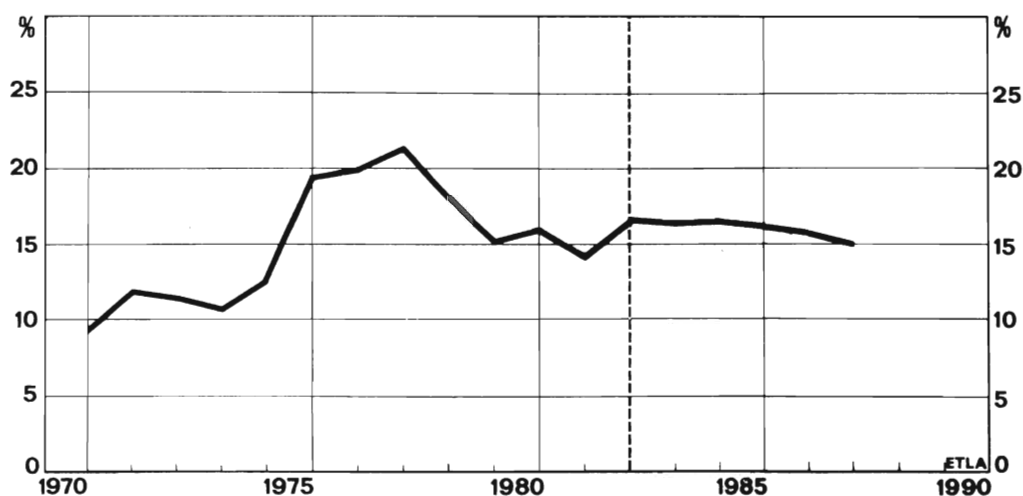
Sources: Foreign Trade Monthly Bulletin and ETLA's estimates

Table IV:4 Commodity imports, 1967–87

Commodity group	1982 mill. FIM	Average annual change in volume, %			
		1966→72	1972→77	1977→82	1982→87
Raw materials, etc.	41 117	8.5	1.6	3.9	2
Fuels and lubricants	4 867	3.4	2.0	-2.5	-1
Investment goods	9 196	7.8	2.1	4.6	3
Consumer goods	9 128	9.5	4.1	6.9	3
Total commodity imports	64 721	8.2	2.1	3.8	2

Sources: Foreign Trade Monthly Bulletin and ETLA's estimates

Figure IV:4 Net foreign liabilities in relation to GDP, 1970–87
Per cent



Sources: Bank of Finland Monthly Bulletin and ETLA's estimates

At the end of 1982 Finland's net foreign debt was about 40 billion FIM, or somewhat less than 17 per cent of the GDP. Foreign debt in relation to GDP is expected to be around 15 per cent by the end of the period (Figure 4).

2.3 Investment

Investment is expected to grow only slightly in 1983–87 and the investment ratio is likely to remain rather low compared with the 1960s and the early 1970s. A shift of capital resources toward the open sector of the economy which started, in accordance with the lines adopted for medium-term strategy of economic policy, in the latter half of the 1970s will continue during the period under survey. It is estimated that the share of industrial investment in total fixed capital formation will rise from 20 per cent in 1982 to about 23 per cent in 1987. However, the growth of the net capital stock will remain unsatisfactory in many manufacturing industries.

The volatility of investment, typical of the Finnish economy in the 1960s and 1970s, has been dampened somewhat during the last few years, and this course is estimated to continue, although, internationally compared, changes in capital formation are likely to be quite large.

Gross fixed investment by industries is presented in Table 5.

Table IV:5 Gross fixed capital formation by industries, 1967-87

Industry	1982* mill. FIM	1982* % shares at 1975 prices	Average annual change in volume, %			
			1967→72	1972→77	1977→82	1982→87
Agriculture and forestry	4 734.8	9.2	1.6	0.9	2.5	-1.5
Mining and manufacturing	10 897.0	24.1	10.7	-2.6	5.1	3.5
Electricity, gas, water and sanitary services	3 687.5	7.9	14.0	9.2	-4.3	4.5
Construction	1 204.5	2.3	3.7	-1.5	1.6	-0.5
Ownership of dwellings	14 842.0	29.3	8.0	1.4	-0.5	-2
Service industries	13 487.5	27.1	4.5	-0.1	2.6	3
Private fixed capital formation	48 953.3	100.0	7.1	0.7	1.5	1.5
Public fixed capital formation	7 915.2		0.3	-1.0	3.5	1.5
Gross fixed capital formation	56 868.5		6.0	0.4	1.8	1.5

Sources: National Accounts and ETLA's estimates

2.4 Private Consumption

Growth in private consumption expenditure will be, in conformity with the expected growth in households' real income, comparatively slow. The average annual growth is estimated at 2 per cent, which is significantly less than the long-run trend growth of about 4 per cent.

Table IV:6 Private consumption expenditure and real disposable income of households, 1967-87

Consumption item	1982* mill. FIM	Average annual change in volume, %			
		1967→72	1972→77	1977→82	1982→87
Food	35 895.5	4.4	0.1	1.7	1
Clothing	5 825.5	4.8	-2.7	0.3	1.5
Housing	24 215.0	6.5	5.1	3.1	2.5
Durables	8 827.5	6.5	2.6	5.3	3
Personal care	3 053.2	5.6	2.2	1.6	2
Transport	22 077.8	7.3	2.0	4.1	1.5
Recreation	10 411.0	8.6	6.6	6.4	3
Other services	13 211.3	9.3	0.5	4.2	1.5
Private consumption	127 019.5	5.4	2.1	3.3	2
Real disposable income of households ¹		6.1	1.7	3.7	2

¹ Disposable income of households deflated by consumer prices

Sources: National Accounts and ETLA's estimates

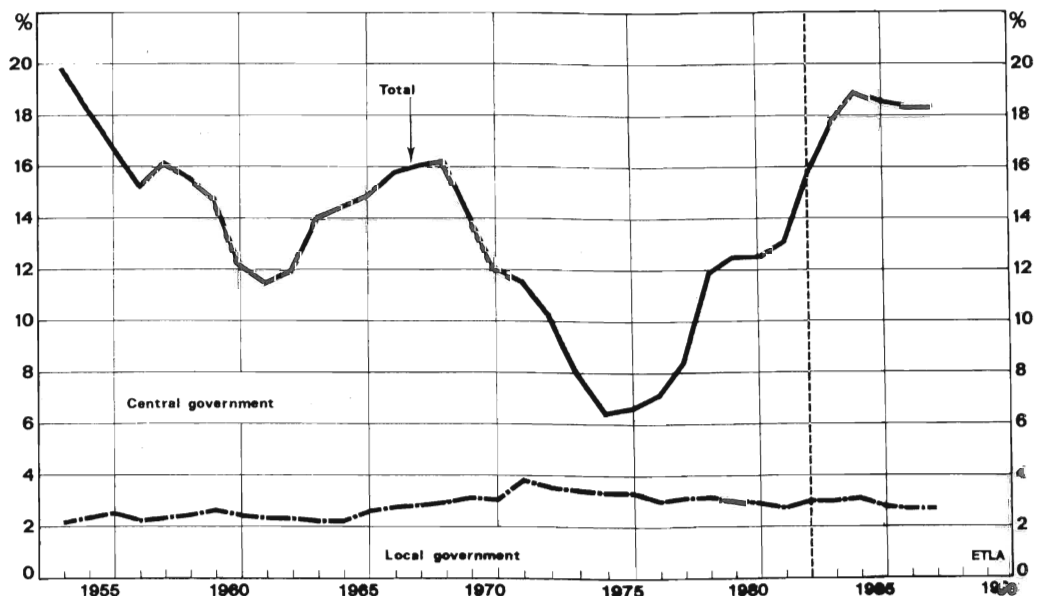
According to a recent extensive study¹ on private consumption expenditure in Finland there will be no considerable structural changes in the consumption pattern during the period under survey. Expenditures on recreation, cultural and schooling services and on personal care will increase faster than the average.

2.5 Public Sector

The sharp increase in public expenditure in Finland during the 1970s was due to, i.a., the school reform, the expansion of the medical and health care system and the reform of the day-care of children. The financial position of the public sector was weakened by these expenditures during the latter part of the 1970s, when economic growth was slower and the ratio of total taxes to GDP was no longer permitted to rise. Reflationary policies added to the financial requirements of the public sector.

Particularly the state's indebtedness has rapidly increased. The size of the state debt – about 13 per cent of GDP – is not large by international standards, and it should also be pointed out in this context that the outstanding stock of credits granted by the state is of almost the same size. It seems, however, that efforts should be and, according to the program of the Government, will be made to restrain central government spending and thus restrict the growth of the debt. The average real growth of central government

Figure IV:5 Public debt, 1953–87
Per cent of GDP



Sources: Bulletin of Statistics and Municipal Finances Statistics and ETLA's estimates

Table IV:7 Taxes and income transfer, 1960–87

Per cent of GDP at market prices

Income transfer item	1960	1970	1980	1982	1987
1. Direct taxes	10.2	13.4	15.0	16.2	17.8
2. Social security contributions	3.6	5.8	6.5	6.5	6.5
3. Indirect taxes	13.3	13.6	14.5	15.2	15.3
4. Other current transfers	0.6	0.5	0.7	0.7	0.7
5. Total current transfers from private sector	27.7	33.3	36.7	38.6	40.3
– of which transfers gross/GDP	26.6	31.7	34.7	36.5	38.1
6. Current transfers to households	6.2	8.5	10.4	11.7	12.4
7. Subsidies	2.9	3.0	4.1	4.2	3.2
8. Current transfers to private sector	9.1	11.5	14.5	15.9	15.6
9. Net current transfers to public sector (5–8)	18.6	21.8	22.2	22.7	24.7

Sources: National Accounts and ETLA's estimates

consumption is assumed to be 2.5 per cent per annum. The growth of local government expenditure is estimated to slow down to 3 per cent per annum in real terms. Although a more stringent policy than before will be adopted to restrict the growth of new public outlays, there seems to be no urgent need to cancel earlier welfare commitments.

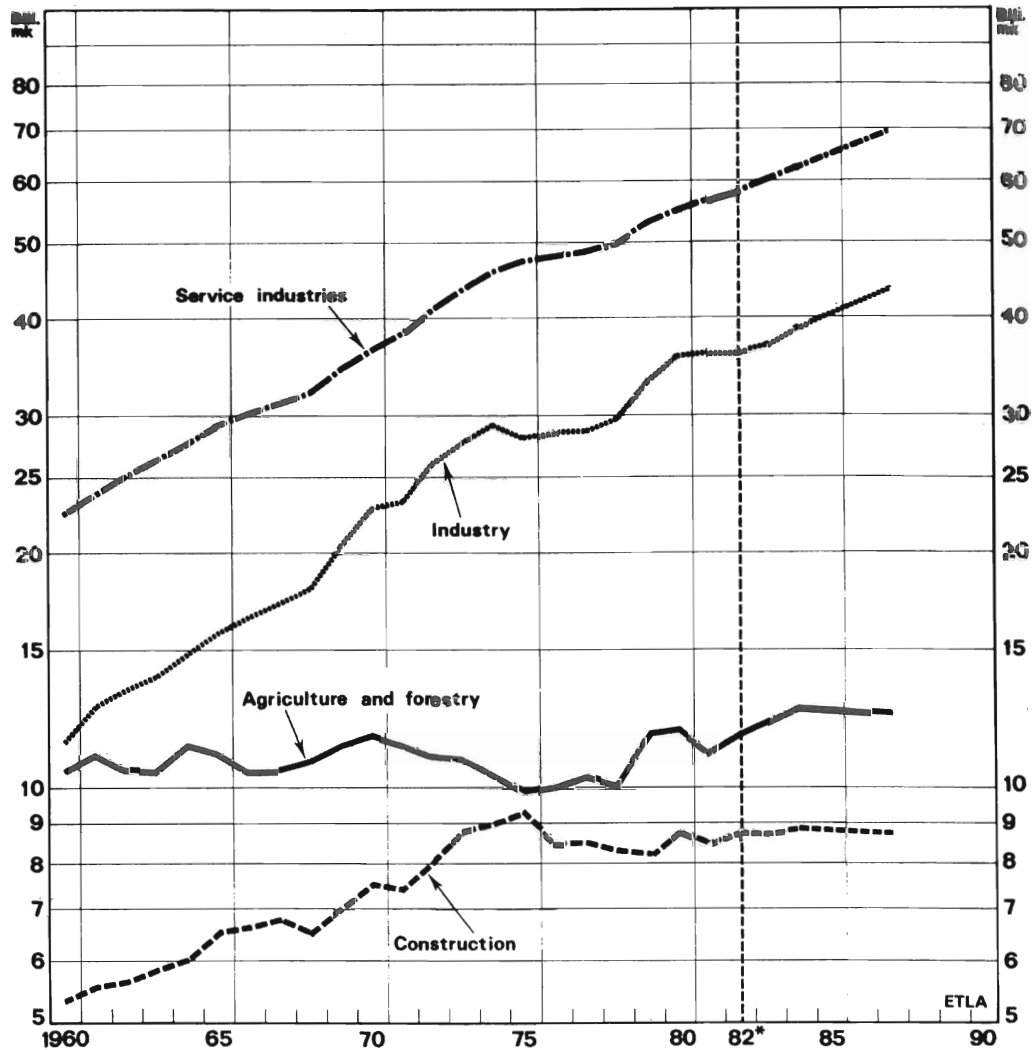
The total taxes/GDP ratio will rise during the next few years. As an indication of the aggregate tax burden, this ratio is poor in many respects. For example, the revised way of entering the price differential compensations and the yield of certain excise duties into accounts reduces the total taxes/GDP ratio by rather more than half a percentage point. Making certain social security benefits taxable increases this ratio, even though current transfers to households are simultaneously increased, so that households' net income will not fall. The ratio of net transfers to GDP is expected to rise by 0.4 per cent p.a. on average. This rise will be due to both direct and indirect taxes.

2.6 Production

In the 1950s, 1960s and the early 1970s Finland underwent a process of notable structural change, during which the share of primary production (i.e., mainly agriculture) in total GDP decreased faster than perhaps in any other of the western countries. During this process the share of industry and construction has remained rather stable – contrary to the case with most European countries – and the service sector has correspondingly grown very rapidly.

The service industries – especially public services and housing services – have grown slightly faster than total output during the last few years, but at a considerably slower pace than in previous decades. In 1983–87 the volume of output in the service sector is estimated to grow at approximately the same speed as total production. Growth in manufacturing production is expected to decelerate to an average rate of 3.5 per cent per annum over the years 1983–87, which would be almost two percentage points less

Figure IV:6. Gross domestic product by sectors, 1960–87
Billion FIM at 1975 prices



Sources: National Accounts and ETLA's estimates

than in the previous five-year period. This deceleration is to a great extent due to the weakening prospects for Eastern markets related to the expected course of oil prices.

GDP by sectors in 1960–82 and projections for 1983–87 are presented in Table 8 and Figure 6. Table 9 presents the industrial production by branches in 1967–87.

Table IV:8 GDP by sectors, 1967-87

Sector	1982* mill. FIM	1982* % shares at 1975 prices	Average annual change in volume, %			
			1967→72	1972→77	1977→82	1982→87
Agriculture	9 632.0	5.2	1.0	0.4	2.2	0
Forestry	9 089.9	5.0	2.1	-3.1	3.0	1
Industry	64 416.1	32.8	8.5	1.9	5.5	3.5
Construction	15 270.7	7.9	3.3	1.1	1.3	0
Services	117 605.8	51.4	5.5	3.5	3.8	3
- Wholesale and retail trade	20 119.5	8.8	6.2	1.6	3.5	2
- Transport and communication	17 051.6	7.2	6.3	2.0	4.6	3.5
- Banking and insurance	8 633.1	3.2	3.7	3.8	1.8	2
- Ownership of dwellings	15 009.1	7.8	5.1	5.3	3.4	3
- Other private services	22 598.4	9.3	5.4	1.8	4.2	3
- Public services	34 194.1	15.3	5.3	5.7	4.0	3
Imputed bank service charge	-5 571.7	-2.4	6.2	5.0	2.8	—
GDP in basic values	210 442.8	100.0	5.5	2.2	4.0	3

Sources: National Accounts and ETLA's estimates

Table IV:9 Value added in industry by branches, 1967-87

Branch	1982* mill. FIM	1982* % shares at 1975 prices	Average annual change in volume, %			
			1967→72	1972→77	1977→82	1982→87
Food manufacturing industries	6 760.0	10.7	5.7	-0.4	5.1	2
Textile, wearing apparel and leather industries	4 614.4	6.8	6.2	1.0	3.2	1
Forest industry	9 465.0	15.6	6.7	-2.8	5.0	4
- wood industry	2 772.6	3.7	6.2	-3.3	3.6	3
- paper industry	6 692.4	12.0	6.8	-2.6	5.5	4.5
Chemical industries	6 361.2	9.8	14.1	1.0	4.8	4
Metal and engineering industries	20 249.7	35.1	10.2	4.9	7.1	3.5
- basic metal industries	2 319.2	5.6	11.1	6.2	7.2	2.5
- manufacture of fabricated metal products and machinery	17 930.5	29.4	10.0	4.7	7.1	4
Other industries	8 526.9	11.4	8.6	2.3	5.7	3
Total manufacturing	55 977.2	89.2	8.5	1.5	5.7	3.5
Mining and quarrying	857.6	1.5	2.9	4.2	10.1	3
Electricity, gas and water	7 581.6	9.3	9.9	5.6	3.9	3.5
Total industry	64 416.1	100.0	8.5	1.9	5.5	3.5

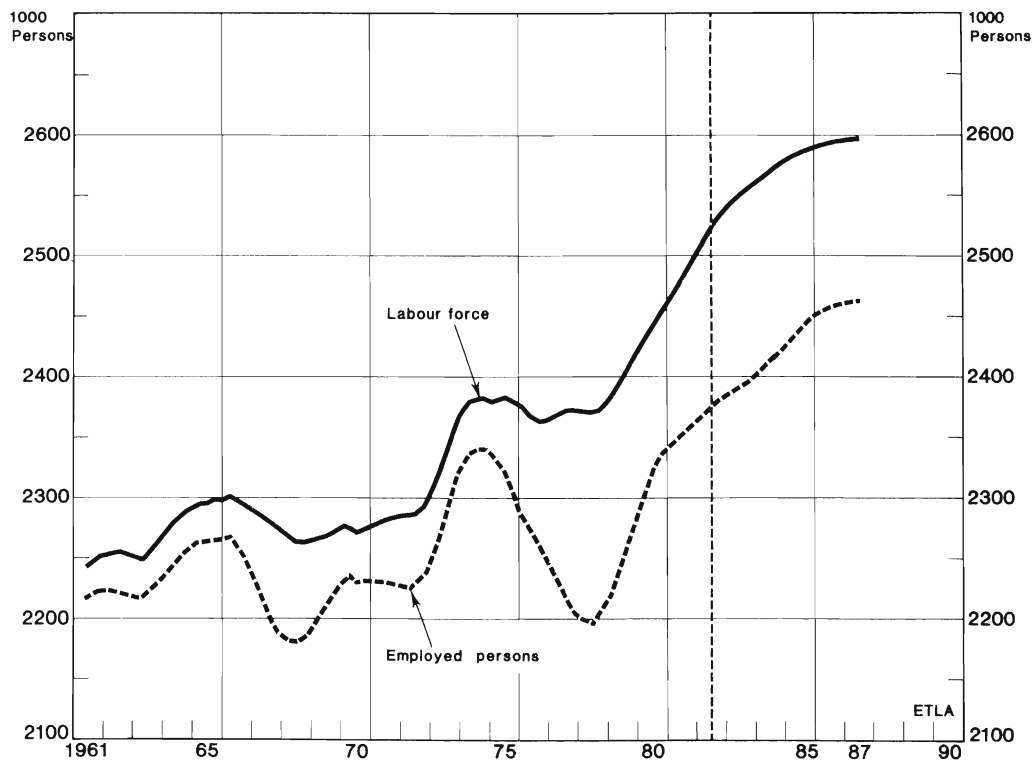
Sources: National Accounts and ETLA's estimates

2.7 Employment

The supply of labour in Finland has increased substantially in the late 1970s and early 1980s. This is due to several factors, the most important among them being the change in the age distribution of the population. Net immigration has also turned positive. An important factor has been an upturn in the labour force participation rate, after two decades of decline, which perhaps reflects efforts to improve living standards under conditions of a slower growth of real income. The growth in the supply of labour will continue in 1983–87, but at a slower pace than in the past five years. Net immigration, mostly from Sweden, is expected to total about 20 000 persons during the period under survey.

The demand for labour has increased by more than 150 000 persons from 1977. Employment has risen most rapidly in public and private services and to a lesser extent in manufacturing. The rise in the demand for labour is expected to continue in these sectors. At the same time the decline in employment in agriculture is forecast to come to a halt. Total employment is estimated to grow by about 80 000 persons during 1983–87. Despite that, open unemployment will remain rather high.

Figure IV:7 Labour force and employed persons, 1961–87
1000 persons



Sources: Labour Force Statistics and ETLA's estimates

Table IV:10 Balance of manpower resources, 1967–87

1000 persons

Item	1967	1977	1987	Changes			
				1967→72	1972→77	1977→82	1982→87
Population	4 606	4 739	4 938	34	99	87	112
Population of working age (15–74 years)	3 288	3 560	3 719	121	151	99	60
Working age population not belonging to labour force	995	1 189	1 122	125	69	–56	–11
– of which persons doing domestic work	415	211	124	–88	–116	–62	–25
Labour force	2 293	2 371	2 597	– 4	82	155	71
Unemployed persons	64	140	134	– 8	84	9	–15
Employed persons	2 229	2 231	2 463	4	– 2	146	86
Unemployment rate, %	2.8	5.9	5.2	..	..	..	..
Labour force participation rate, %	69.7	66.6	69.8	..	..	..	..

Sources: Labour Force Statistics and ETLA's estimates

Regular working time is not expected to change significantly during the survey period, but various part-time working arrangements are likely to become increasingly common.

2.8 Financing

The balance between domestic saving and capital formation has been rather good since the mid-1970s, and was even in the boom years 1979 and 1980, mainly because of a constantly rather low level of investment. Thus there wasn't any urgent need for the central bank to control the availability of credit to the private sector, and the monetary policy was in fact relatively reflationary until the spring of 1983. The financial markets were tightened during 1983, and monetary policy is expected to stay comparatively tight also in the near future.

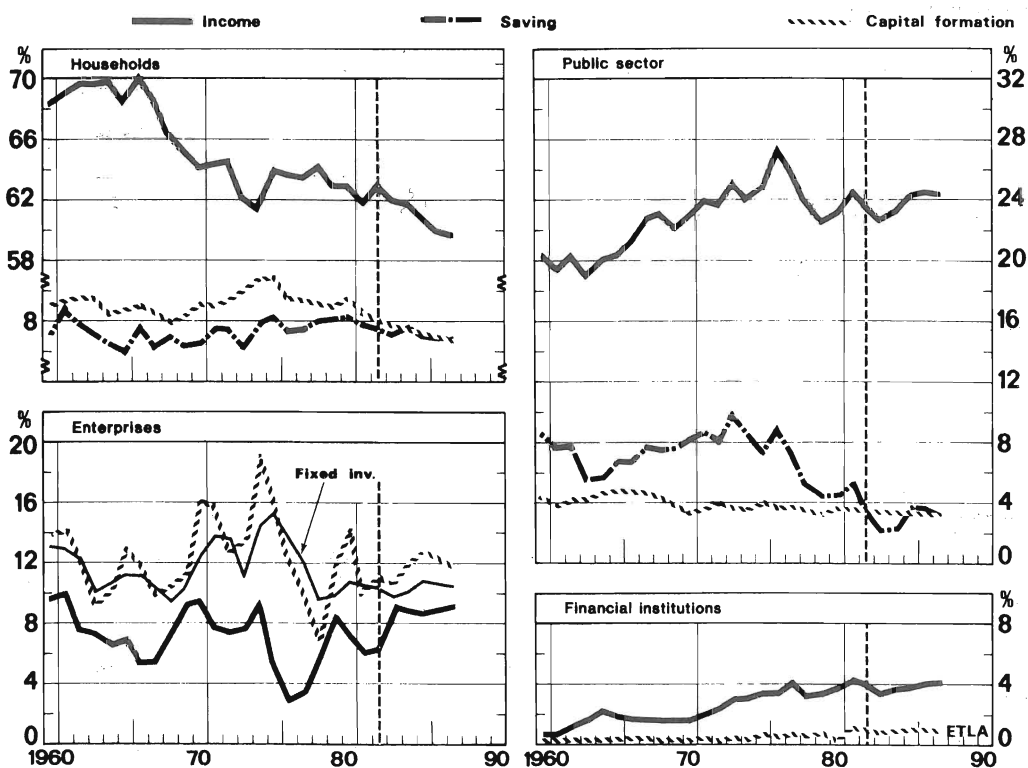
A shift toward increasingly competitive conditions in the financial markets has been taking place. The formation of interest rates in the future will be more competitive than before, and new instruments for financial intermediation will be developed. So far this has mainly affected the enterprise sector, but in the future it will increasingly influence households as well, because investment in dwellings is diminishing and there will be more room for financial investment. It is still true, however, that the general level of interest rates will depend upon the policy pursued by the Bank of Finland, and also that credit control remains the main policy instrument by which the availability of credit to the sheltered sector is regulated.

The distribution of disposable income is likely to change so that households' share will decrease and that of the public sector will increase. The share of households will decrease because, e.g., the direct taxes paid by households will grow a little faster than

the transfers received by them. The income share of the public sector, which has decreased because of the policy measures taken, will increase during 1983–87 as a result of efforts to balance the state's financial position not only by restricting expenditures but also by higher taxation. The share of enterprises in total income significantly increased in 1983 and is expected to stay at this higher level. As the ratio to GDP of investment by the enterprise sector is expected to stay only slightly over 10 per cent, or markedly below the average for the 1970s, this sector's financial position will be satisfactory and the holdings of the so-called market money deposits will keep increasing.

The surplus in the balance of payments with the Soviet Union and the capital inflow by the state have kept the liquidity high in recent years. The impact of both of these factors is likely to diminish in the period 1983–87, because of deliberate efforts to reduce both the cumulative trade surplus in East trade and the state's deficit and foreign borrowing.

Figure IV.8. Income, saving and capital formation by sectors 1960–87
Per cent of GDP



Sources: National Accounts and ETLA's estimates

3 SUMMARY OF ECONOMIC PROSPECTS AND POLICY PROBLEMS

During 1983–87 economic growth is expected to continue in Finland at a rate faster than the average for the OECD-countries. Still, overt unemployment will remain rather high, well over five per cent of the labour force. That is not large by international standards, but in small countries like Sweden, Norway and Austria unemployment rates have at least so far been markedly lower. Irrespective of whether the growth prospects are regarded as satisfactory or not, the expected growth rates can only be achieved on condition that economic policy does not fail in coping with certain difficult problems.

The most difficult problems are those related to persistent inflationary tendencies, which threaten the competitiveness of Finnish industry. Restraining the rise in domestic costs and prices is regarded now as a central economic policy objective. In 1983–84 the average inflation rate in the OECD countries will be several percentage points below that in Finland. The bringing of the rate of inflation down to 6 per cent in the course of 1984 is set as a target by the Government.

Keeping Finland's price competitiveness at a reasonable level will call for very well-designed economic policies, especially during the last years of the period. There are many special groups of people whose income developments have been slow and who claim that their position should be corrected. A way must be found to make the necessary changes in relative income positions without at the same time creating compensatory demands by all other groups.

Investment will grow only slowly and the investment ratio will remain low compared with the 1960s and early 1970s. There are branches of manufacturing industry where the growth rate of capital stock cannot be considered satisfactory from the point of view of longer-term growth and competitive prospects. This increases the importance of domestic inflation curbing policy, for a lower rate of inflation will eventually improve firms' profitability and lead to an increase in investment. Stronger investment activity would be particularly important now that the efforts to balance central government receipts and expenditure tend for their part to slow down the growth of total demand.

In conformity with the lines of the 1977 economic policy programme the taxation of households was cut somewhat to compensate for modest – and partly deferred – wage and salary increases. Decreased transfers from the private sector, however, have only to some extent been balanced by reducing the growth rate of public expenditure. Subsequently, the central government's indebtedness has increased rapidly since the late 1970s.

This rapid growth of the central government's indebtedness imposes a constraint on the kind of demand management practised in the late 70s. The relative size of the debt is in itself not yet large, internationally compared, and the state has also granted credits

almost as much as it has borrowed. However, an effort should be made during the current upswing at least to prevent the state's indebtedness from rising in relation to domestic product. The forecast suggests a rise still in 1984, and then a small decline. This is an optimistic forecast, for pressures from different political parties and pressure groups perhaps cannot be held down without excessive central government outlays.

Manufacturing industry has during the last few years played an important role in the relatively favourable course of the total economy, especially in improving the external balance. The international performance of manufacturing has been rather good in terms of output growth, growth of productivity and profitability. In 1973–83 the average annual growth rate of industrial production in the OECD countries was 2.2 per cent, the corresponding figure for Finland being about 3.5 per cent.

It is noteworthy that no such substantial structural interindustry changes leading to reductions in the productive capacity of manufacturing as in many other countries have occurred in Finland. Adjustments have rather taken place within the various industries and in the form of product specialization and improved productivity of production processes.

Factors that are likely to cause problems for the export-oriented strategy of industrial growth are associated with the onesided product composition and regional structure of

Table IV:11 Research and development expenditures by industries in Nordic countries, 1979

Per cent of value added

Industry	Denmark	Finland	Norway ¹	Sweden ²
Mining and quarrying	—	0.3	0.3	2.0
Food manufacturing industries	0.6	0.6	0.6	0.8
Textile, wearing apparel and leather industries	0.4	0.3	0.5	0.3
Wood industry	0.3	0.3	0.3	0.2
Paper and printing industries	0.2	0.7	0.3	1.0
Manufacturing of drugs and medicines	16.1	12.9	16.8	26.6
Petroleum and coal industries	—	0.8	0.1	0.3
Manufacture of rubber and plastic products	1.1	2.4	2.1	2.5
Other chemicals industries	2.5	2.7	4.4	4.0
Non-metallic mineral products	1.5	0.9	0.9	1.3
Basic metal industries		2.3	2.5	2.9
Manufacture of fabricated metal products	0.6	0.8	1.7	5.3
Manufacture of office and computing machinery		14.0	15.2	7.5
Manufacture of other non-electrical machinery	3.2	3.6	3.7	9.0
Manufacture of electronic equipment	9.0	10.2	23.1	13.4
Manufacture of other electrical machinery	2.2	6.4	5.0	—
Shipbuilding	2.2	1.2	1.1	0.9
Total mining and manufacturing	2.3	1.7	2.3	4.1

¹ Excluding oil production

² Only firms employing more than 20 workers

Sources: Central Statistical Office of Finland and OECD

Finnish manufacturing exports, with the low level of productivity in many industries and with internationally low R&D expenditures in manufacturing and in related industries (see Table 11). The importance of these factors is likely to grow in the 1980s especially in the traditional exporting industries.

Although the growth of productivity in manufacturing industry has in recent years been faster in Finland than in most other industrialized countries, its level is still markedly lower than, e.g., in Sweden. According to a recent study,² R&D expenditures have had a considerable impact on total factor productivity change in Finland; the social rate of return on R&D capital in the Finnish industry was estimated to be of the order of 20 to 30 per cent. This emphasizes the need for industrial policy designed to encourage firms' research and development activity. Increasing R&D activities are especially important for some industries that previously grew fast (chemicals, wood processing and certain branches of engineering), whose basic production is confronted with pressing requirements for transformation due to changing cost and demand conditions.

During the last 10–15 years Finland's export trade has concentrated on products and markets where growth has been slower than the average for the world market. Finland has, however, in the longer run been able to maintain or even expand her market shares in these markets, and hence, increase exports quite rapidly (see Horwitz's Special study 6 in this volume). This has made it necessary to maintain the exporting sector's profitability and price competitiveness at a reasonable level, although the short-run variations in its competitive position have been very large, as indicated above.

The assumption that external competitiveness will be maintained approximately at its current level is the crucial one behind the projections presented in the previous section. The projected growth of the economy, though more modest than in the preceding five-year period 1977–82, is largely based on the expected fairly good export performance of the traditional exporting industries. In these industries export prices are to a large extent exogenously determined, and hence, the course of domestic costs in relation to developments in competitor countries are a major determinant of their competitiveness. This applies in the first place to forest industries, which still account for more than one third of total Finnish exports. Forest industries suffered from a shortage of raw-wood even during the years of recession, in 1981–83, and the course of costs and profitability have been rather unfavourable. If these problems cannot be solved, the growth of output in forest industries will be considerably slower than projected in Table 9.

If competitiveness could not be maintained, the rather good external balance and, subsequently, also the basis of the current economic policy, would be jeopardized, in which policy it has been possible to shift the emphasis from short-run stabilization towards improving the overall operating conditions of firms and the expansion of the open sector in general.

NOTES

1 Matti Virén: Private consumption expenditure in Finland 1950–86, Helsinki 1983 (in Finnish).

2 See Geoffrey Wyatt's special study 4.

CHAPTER V

NORWAY: VULNERABLE WEALTH

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NORWAY: VULNERABLE WEALTH

The purpose of this chapter is to sketch the growth prospects of the Norwegian economy for the medium term future, i.e. up to 1987. In order to do so, the chapter starts out by broadly describing the present situation of the Norwegian economy based on the underlying structure and recent trends of the economy necessary to evaluate the growth prospects of the economy for the future. Next, the growth prospects for the five year period 1983–87 are discussed. Finally, it concludes by raising some questions and challenges in Norwegian economic policies.

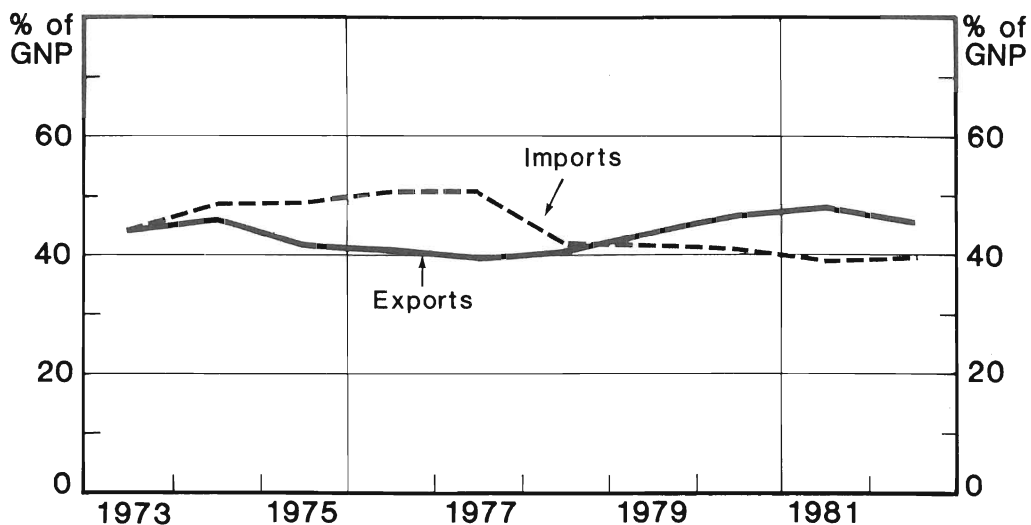
1 THE SITUATION OF THE NORWEGIAN ECONOMY

Many factors are relevant for understanding the growth prospects of an economy. When it comes to Norway, we choose to highlight four: 1) external linkages, 2) the structure of production, 3) how the economy operates, and 4) the tasks and constraints on the government's economic policies.

1.1 Norway and the World Economy

The Norwegian economy is small in an international comparison. The value of its production amounts approximately to .7 per cent of the gross domestic product of the OECD area. An even smaller share of the population in the OECD countries lives in Norway, which means that Norway is among the richer OECD countries.

Figure V:1 Exports and imports, 1973–82
Per cent of GNP



Source: Central Bureau of Statistics (National Accounts)

Besides being small, the Norwegian economy may be characterized as open towards the economy of other countries. Foreign trade has constituted a significant share of the Norwegian economy all throughout its modern history. For the last 10 years the value of Norwegian exports as a share of the gross national product has varied between 40 and 48 per cent (Figure 1).

Almost all foreign trade is within the OECD area; and close to half of the foreign trade is with the three countries: Great Britain, Sweden and The Federal Republic of Germany (Table 1). The openness of the Norwegian economy thus means that Norwegian production is directly linked to the economy of the other OECD countries, and especially to the European ones.

The implication of this openness is that the development of the Norwegian economy is highly influenced by the Western European economies, or how the world economy in general, develops.

1.2 The Industry Structure

Throughout the last century the structure of Norwegian production has undergone changes similar to those of other rich countries; the primary sectors of the economy are relatively reduced, while the manufacturing and later the service sector have been expanding. Still, Norwegian wealth is to a large extent based on God-given natural resources. Norwegian exports are mainly composed of rather undeveloped products like crude oil and natural gas, metals based on the wide distribution of electric power from the water falls, and fish (see Leskelä in the statistical supplement of this volume). Sophisticated products only play a minor role in Norwegian exports, e.g. the export value of high technology products amounts to less than 5 per cent of commodity exports.¹

Table V:1 The four main import countries for Norwegian exports of commodities 1952, 1962, 1972, 1981

Country	Per cent of commodity exports			
	1952	1962	1972	1981 ¹
Sweden	9.6	13.3	15.7	10.2
U.K. and N. Ireland	20.1	17.0	18.9	19.9
Federal Republic of Germany	8.8	15.1	12.5	18.9
U.S.	7.7	10.6	7.2	11.9
4 largest	46.2	56.0	54.3	60.9

¹ The distribution showed in official statistics is corrected for how stabilized crude oil landed in Teeside (Ekofisk) and Sullom Voe (Murchison) in United Kingdom are distributed to other countries

Source: Composed and estimated by IØI from Foreign Trade Statistics from the Central Bureau of Statistics

Table V:2 The distribution of employment and gross national products by sectors 1981
Per cent

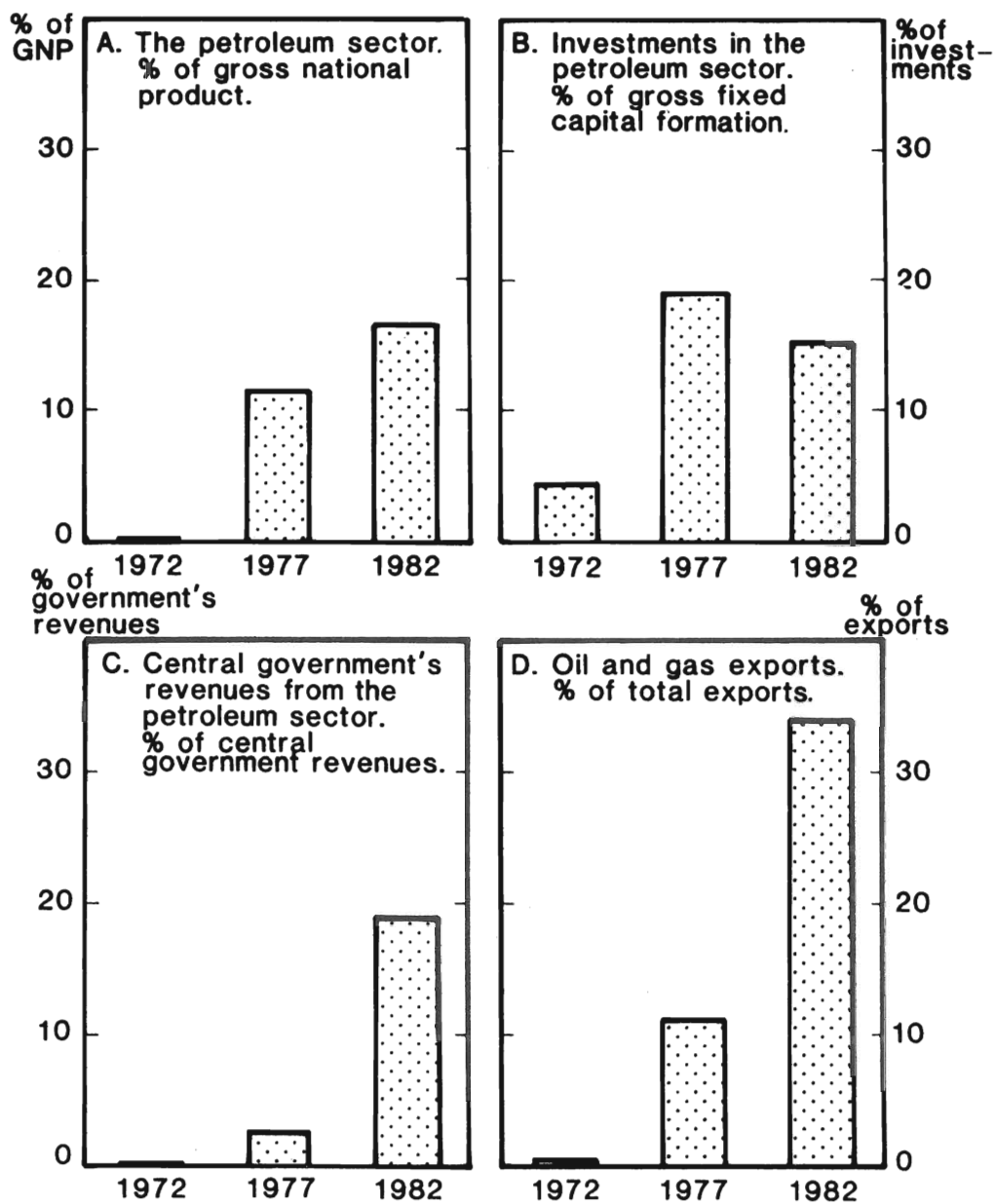
Sector	Employment 1981	Production 1981	Average annual change in volume, %	
			1972→77	1977→82
Agriculture, Forestry and Fishing	7.9	4.5	1.0	1.5
Crude Petroleum and Natural Gas Production	0.3	15.3	51.4	21.0
Oil and Gas Exploration and Drilling	0.2	1.0	..	10.5
Mining	0.5	0.4	2.5	-1.6
Manufacturing	21.1	14.9	1.1	-0.2
Electricity, Gas and Water Supply	1.1	3.6	3.2	4.8
Construction	8.5	5.9	3.0	1.8
Wholesale and Retail Trade	13.3	12.4	5.5	1.7
Hotels and Restaurants	2.1	1.3	1.4	-3.0
Water Transport	3.3	4.4	6.0	-3.9
Other Transport, Storage and Communication (incl. Pipeline Transport)	6.9	5.9	4.3	5.1
Financing, Insurance and Business Services	4.9	6.3	2.0	3.3
Real Estate	0.3	4.5	6.2	4.2
Community, Social and Personal Services	29.7	17.9	5.5	3.2
Correction Items		1.6		

Source: Central Bureau of Statistics, National Accounts

The present structure of Norwegian industries as well as their average production growth rates for the last 10 years are shown in Table 2.

The manufacturing and service industries are the most important when it comes to employment. However, as may be seen from the production figures, during the last decade there has been a major change in the Norwegian economy, which might be labelled the emergence of PetroNorway (Figure 2). In 1966 oil companies started drilling for oil and gas on the Norwegian continental shelf, and five years later, in 1971, the first exploitation of petroleum started. From 1971 to 1982 the value of that production has risen 1.000 times at current prices – from 62 million NOK in 1971 to 63 billion NOK in 1982. In just a little more than a decade a completely new industry has developed in the Norwegian economy, an industry upon which the Norwegian economy and society in many respects have become heavily dependent:

Figure V:2 Indicators on the emergence of PetroNorway 1972, 1977, 1982



Sources: Central Bureau of Statistics, National Accounts and Foreign Trade Statistics

- the oil and gas sector of the Norwegian economy now constitutes more than 16 per cent of the gross national product,
- roughly 1/6 of the gross fixed capital formation in Norway takes place in the oil and gas industry;
- close to 20 per cent of the central government's revenues stems from taxes paid by the producers and the production of oil and gas on the continental shelf; and
- the value of oil and gas exports amounts to about 1/3 of all Norwegian exports.

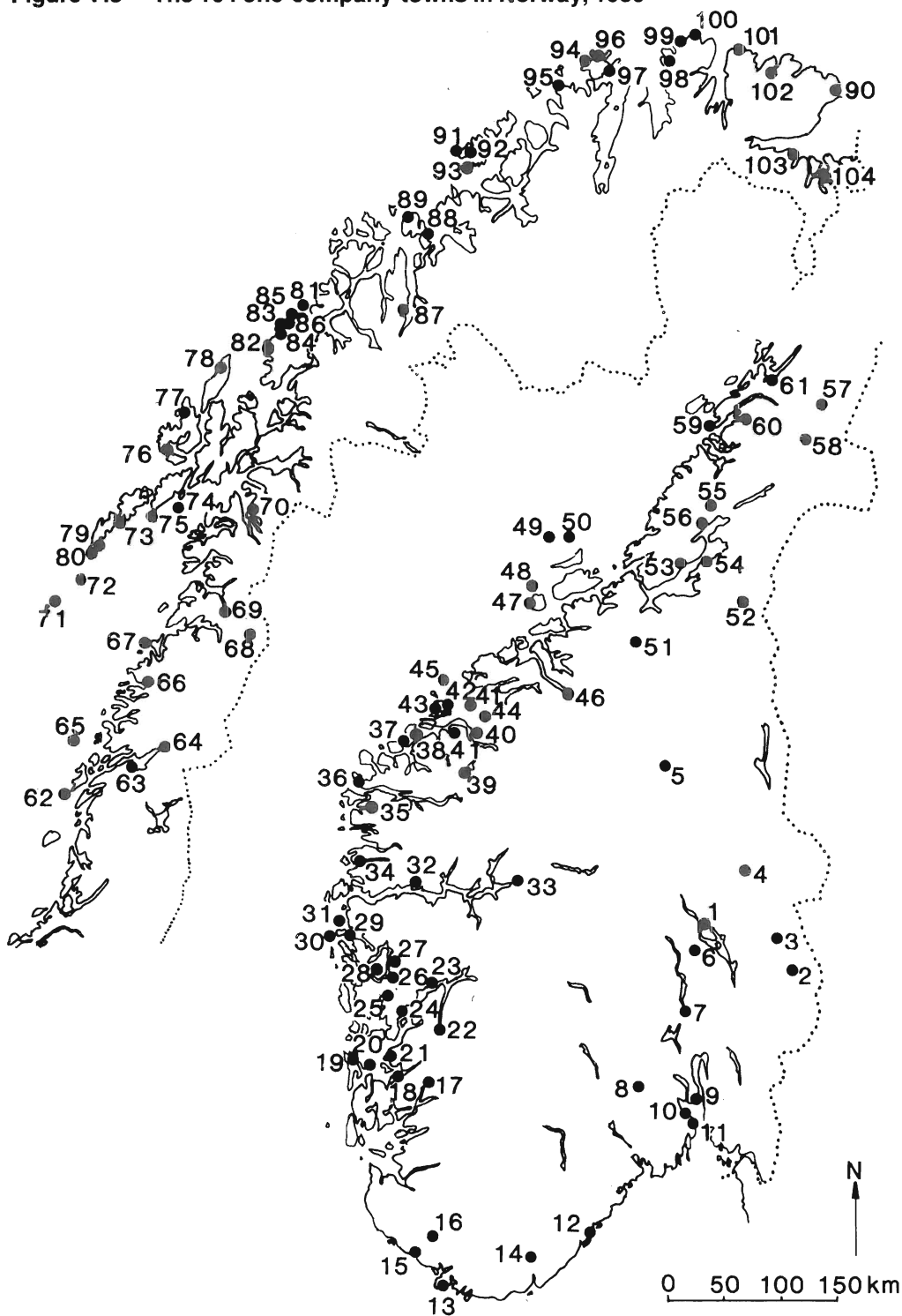
These indicators imply that the state of the Norwegian economy in the future will depend largely on the development of the oil price.

While the value of petroleum production has shown a substantial growth during the last decade, the production in the traditional manufacturing industries has stagnated, and never regained the volume produced in the "top year" 1974. This is partly due to the introduction of a new dominant growth sector in the economy, and partly due to the international economic recession, which has hit the manufacturing industries.

Beside the general economic recession, it is worth noting that the market for Norwegian commodity exports have been growing slowly during the 70s (see special study 6 by Horwitz in this volume). More than half of commodity exports from Norway in 1970 (57 %) consisted of products whose demand from other OECD countries grew less than 85 per cent of the average import growth to OECD (Heum, Berrefjord and Selvik, 1984). There is no reason to expect the demand for these products to grow relatively faster in the future. Thus, Norwegian manufacturing industries, which are the main contributors to this commodity production, oil excluded, faces a structural problem: The challenge is to develop international competitiveness within faster growing markets. It should, however, be noted that commodity exports (excl. oil and natural gas) only constitutes one third of Norwegian exports; one third consists of crude oil and natural gas; and one third is services, mainly shipping.

Manufacturing production is, contrary to the petroleum activities, scattered throughout the country. In Figure 3 the 104 one-company-towns are plotted on a map of Norway.² The production in these towns is to a large extent concentrated in so-called basic industries, e.g. mining, metal production, and fish processing. Altogether 5 per cent of the Norwegian population lives in areas depending on one manufacturing company or industry, and the manufacturing taking place in these areas employ 10 per cent of all who are working in manufacturing industries in Norway. The map indicates the severe regional ramifications of the adjustment process in the manufacturing industries. To the extent that the adjustment processes result in plant closures, this may create substantial unemployment problems in these regions. The wide distribution of these towns around the country, implies that such problems gain a lot of political attention and local opposition.³

Figure V:3 The 104 one-company-towns in Norway, 1980



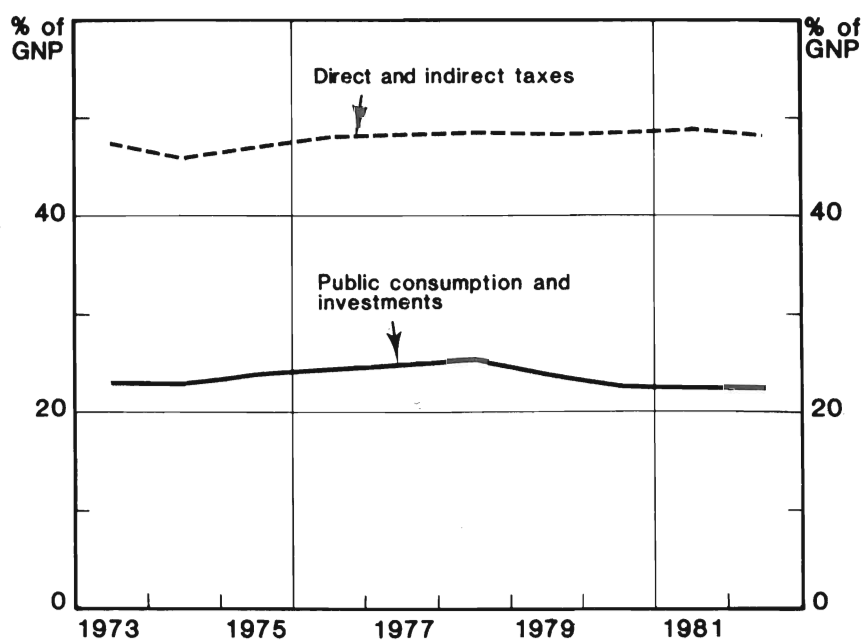
Source: NOU 1983:10

1.3 The Organization of the Economy

In this section highlighting the organization of the Norwegian economy we shall only give a broad overview of the public sector, the composition of companies in the private sector, and the relations between business and national political institutions.

The public sector is quite large in the Norwegian economy. As can be seen from Figure 4, direct and indirect taxes amount to almost 50 per cent of the gross national product and have stayed at that level for the last 10 years. About half of these revenues is used for public consumption and investments, varying between 22 and 25 per cent of the gross national product throughout the last 10 years' period. The rest is mainly transferred to the private sector, aiming at redistributing income between different social groups in order to fulfill the goals of the welfare state.

Figure V:4 The public sector of the Norwegian economy. Direct and indirect taxes, public consumption and investments, 1972–82
Per cent of GNP



Sources: Central Bureau of Statistics, National Accounts, St.meld. nr. 88 (1982–83)

The size of the public sector implies that political decisions may have significant economic effects on the firms. As the government controls such a large share of the values produced in the society, it is not only the policies, but also the resources as such that are of interest for private business.

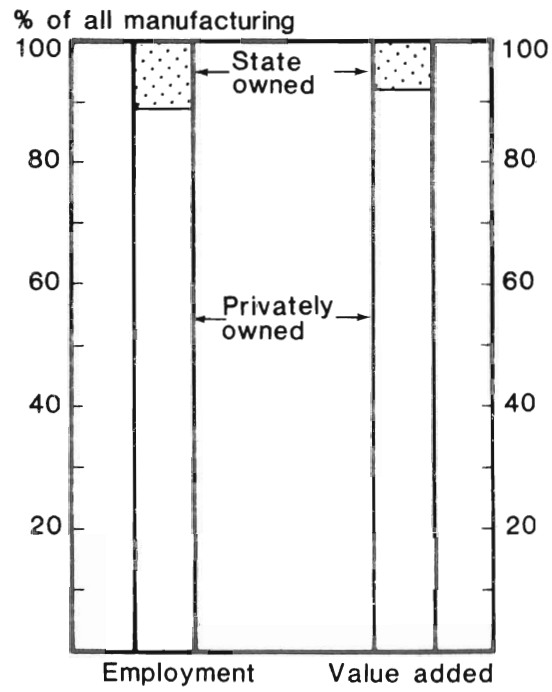
The private sector of the Norwegian economy comprises the agrarian sectors, mining incl. petroleum production, manufacturing, trade, and most of financing, business services, and transportation. There are, however, companies in the private sector which are controlled by the state. In 1980 more than 10 per cent of the employees in the manufacturing and mining industries were working in government controlled companies. (Figure 5). These companies contributed to 7.7 per cent of the value added of these industries. This will, however, increase as Statoil (100 per cent state owned) and Norsk Hydro (51 per cent state owned) the coming years will increase their share of the extraction of petroleum on the Norwegian continental shelf.

On the whole, small companies constitute an important element of the Norwegian economy. Nevertheless, a few large companies dominate most Norwegian industries. This is especially true when we look at the production of petroleum, where less than 20 companies are engaged and just a handful play the dominant role. This is also true in the insurance business and commercial banking: The five largest companies in each of these industries account for roughly 75 per cent of the industry's total balance sheet. Concentration is weakest in the manufacturing and retail industries, where small scale production is widespread. But even in these industries there is a clear evidence of concentration when we look at branches and not the industries as a whole. For example, in 1974 commodities representing 25 per cent of the total sales of manufacturing products were traded in markets where the four largest Norwegian producers had a market share of at least 50 per cent, or where the eight largest' market share was 65 per cent or more (NOU 1978:33). And there is no reason to expect that the concentration process has stopped (see special study 2 by Oxelheim in this volume).

The dominant role of oil and gas in Norwegian export, and the fact that only a few companies are involved in this production, imply that Norwegian exports are quite concentrated in a small number of companies. In a ranking of the ten largest exporters, six oil companies are included. Norsk Hydro alone accounts for 10 per cent of all Norwegian exports (Table 3), and in a few years Statoil will most likely do the same. Altogether the ten largest exporters hold one third of Norwegian exports, and the share held by the ten largest exporters has grown rapidly as the exports of oil and gas have increased. In 1972 their share was 16,3 per cent, ten years later it was doubled.

Still, Norwegian companies are small on an international scale. Only three companies of Norwegian origin are listed in Fortune's list of the 500 largest industrials outside the U.S. (Fortune, August 1983). Among the 25 largest companies in the Nordic countries in 1982, only two were Norwegian (Veckans Affärer, 1983). Besides, only a few Norwegian companies are among the leading international companies in their fields.

Figure V:5 Employment and value added in state and privately owned manufacturing and mining companies (incl. oil and gas), 1980
 Per cent of manufacturing industries



Source: Central Bureau of Statistics, Industrial Statistics

Close to half of what is produced in Norway, is exported to other countries. The ten largest exporters have an average of almost 75 per cent of their sales on foreign markets (see Table 3). But despite the fact that Norwegian economy is quite open, the companies' production is mainly organized nationally. Except for the oil and gas production, parts of the wholesale business, and business services like advertising, foreign ownership only plays a minor role in the Norwegian economy today. This is partly due to lack of interest on behalf of foreign companies, partly due to public policies. For

Table V:3 10 Largest Norwegian exporters, 1982

Company	Industry	% of Norw. Exports	Exports in % of company sales
Norsk Hydro A/S	Crude petroleum and natural gas prod., Man. of industrial chemicals and other chemicals, nonferrous metals Petroleum refining	10.4	83.6
Statoil A/S	Crude petroleum and natural gas prod., Petroleum refining Wholesale and retail sale of gasoline and fuel	5.8	57.3
Elf Aquitaine Norge A/S	Crude petroleum and natural gas prod.	3.9	94.9
Norsk Agip A/S	Crude petroleum and natural gas prod.	2.4	87.3
Elkem A/S	Metal ore mining Man. of iron, steel, ferro-alloys and non-ferrous metals, fabricated metal products and machinery	2.4	76.9
Wilh. Wilhelmsen	Shipping	2.4	ca. 87.7
Total Marine Norsk A/S	Crude petroleum and natural gas prod.	2.0	98.8
Årdal og Sunndal Verk A/S	Man. of non-ferrous metals, and fabricated metal products	1.9	87.1
Kværner Industrier A/S	Man. of fabricated metal products and machinery, transport equipment Construction, Wholesale of producer goods	1.5	55.4
Norske Shell A/S	Crude petroleum and natural gas prod., Petroleum refining, Wholesale and retail sale of gasoline and fuel	1.2	31.3
10 largest:		33.9	74.5

Source: Composed and estimated by IØI from Norges Industri nr 10/1983

example, foreign banks are not allowed to establish their business in Norway, though some liberalization may be expected in that respect. In the petroleum sector the policy is to increase the participation of Norwegian companies. In 1980 they only played a minor role in the production that took place: Foreign companies then accounted for more than 90 per cent of the value added in that sector.

Besides, Norwegian companies are only participating to a small extent in production abroad. The main exception is the shipping industry. In manufacturing only a handful of companies are involved in multinational business in any real sense of the word. Altogether the employment in Norwegian owned (majority) manufacturing companies abroad amount to 10–15 per cent (40–50,000) of the number employed in manufacturing industries in Norway. This is in strong contrast to Swedish industry, which has about one third of its employment abroad.

In sum, the picture of the Norwegian economy is one of a relatively small number of large national companies, that only hold minor market shares internationally. This picture has existed for some time, but as the concentration process has developed, it has become more dominant for the situation of the Norwegian economy as a whole.

Parallel to this trend the political goals for the economy have become more ambitious, and the size of the public sector has increased. Thus, the political environment has become more important for business, while the realization of political goals increasingly depend on how the companies, and especially the larger ones, are affected by the international economy. Or to put it in different words: There is a strong interdependence between the realization of business interests and political interests, expressing the mixture of markets and politics in the Norwegian economy. This mixture characterizes to a significant degree the present organization and functioning of the economy. Companies do not only act through the market, but directly and increasingly in situations which comprise negotiations with each other and with political authorities (NOU 1982:3), explaining why the economy is spoken of as a negotiating economy.

Industry subsidies may be considered as a result from such direct relations between market actors and political authorities. Investors do not want to lose their capital, employees want to keep their jobs, while politicians do not want the unemployment rate to increase in their constituencies. Frequently interacting, subsidies are for obvious reasons easily hit upon as a "temporary" solution when producers run into problems.

Of course, industry subsidies is not a new phenomenon, but they will tend to increase, other factors left unchanged, when the interorganizational ties between market actors and political authorities are strengthened. And they surely should be expected to rise in periods of economic recession. This has also been the case. In 1973 they amounted to 1.9 per cent of the gross national product, in 1982 to 4.3 per cent (see Table 4).

Agriculture, manufacturing and mining are the sectors that receive most of the state subsidies. Agricultural subsidies have increased mainly as a result of a parliamentary

decision, stating that the income for farmers on the average shall equalize the average wages for manufacturing workers. Manufacturing and mining subsidies have increased mainly as a result of the processes described above, but also as an anticyclical policy attempt to fight the economic recession of the recent years. Altogether, state subsidies amount to approximately 10 per cent of what the manufacturing and mining industries contributed to the gross national product in 1982, and to almost 90 per cent of the contribution from the agricultural sector.

Table V:4 State support to industries, 1973, 1977 and 1982
Million NOK at current prices

	mill. NOK		
	1973	1977	1982
Manufacturing and mining	603.1	1 263.8	5 085.7
Of this:			
To state owned companies (75 % and more)	150.3	260.0	1 989.4
Shipping			681.2
Private services	10.6	84.1	185.5
Agriculture	1 263.6	4 973.9	8 367.3
Forestry	38.5	95.8	147.8
Fisheries	180.0	544.9	988.9
Total	2 095.8	6 962.5	15 456.4
% of gross national product	1.9	3.6	4.3

Source: St.meld. nr. 1 (1983–84)

1.4 Policy Tasks and Constraints

The main objectives for economic policy formulation in Norway, is to secure full employment in the short as well as in the long run, and to keep inflation down. Policy formulation, however, does not take place within a setting of complete freedom of action. In general, the constraints put on public policies which might be relevant for the above mentioned purposes, stem from the financial situation of the public sector, the balance of payments, as well as the public opinion. Thus, after having looked into the present state and past records of unemployment and inflation rates, we shall pay the balance in the public budgets and the level of foreign debt some attention.

Table 5 shows the balance of manpower resources in Norway during the last 10 years. The labor force participation rate has increased through that period. Besides, the working age population has also increased. The average annual increase of the labor force was close to 1.8 per cent in the 1972–82 period.

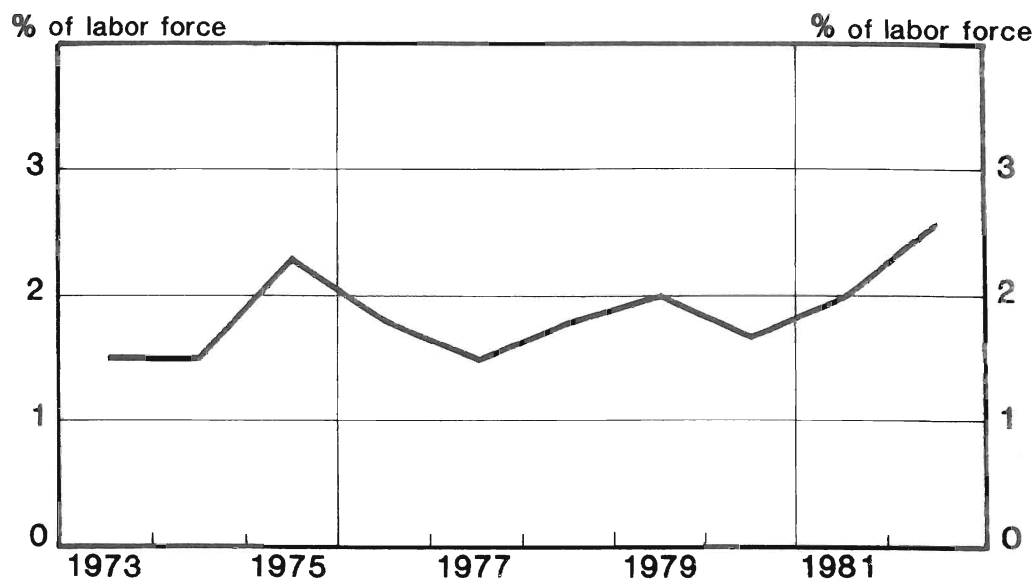
Table V:5 Balance of manpower resources, 1972, 1977 and 1982
1 000 persons

	1972	1977	1982
Population	3 918	4 035	4 107
Population of working age (16-74 years)	2 732	2 844	2 949
Working age population not belonging to labor force	1 055	993	951
- of which: persons doing domestic work	572	467	428
Labor force	1 677	1 851	1 998
- unemployed persons	28	27	52
- employed persons	1 649	1 824	1 946
Unemployment rate, %	1.7	1.5	2.6
Labour force participation rate, %	60.4	65.1	67.8

Source: Central Bureau of Statistics, Labor Market Statistics

Despite the government's involvement in the economy as expressed by the subsidy figures presented in Table 4, the rate of unemployment has accelerated so far in the 80s (Figure 6). From being around 1-2 per cent throughout the 70s, the present rate (January 1984) is above 4 per cent. In addition to the number of unemployed it should be added that 1.4 per cent of the labor force are employed through special labor market programs.

Figure V:6 Rate of unemployment, 1973-82
Per cent of total labor force

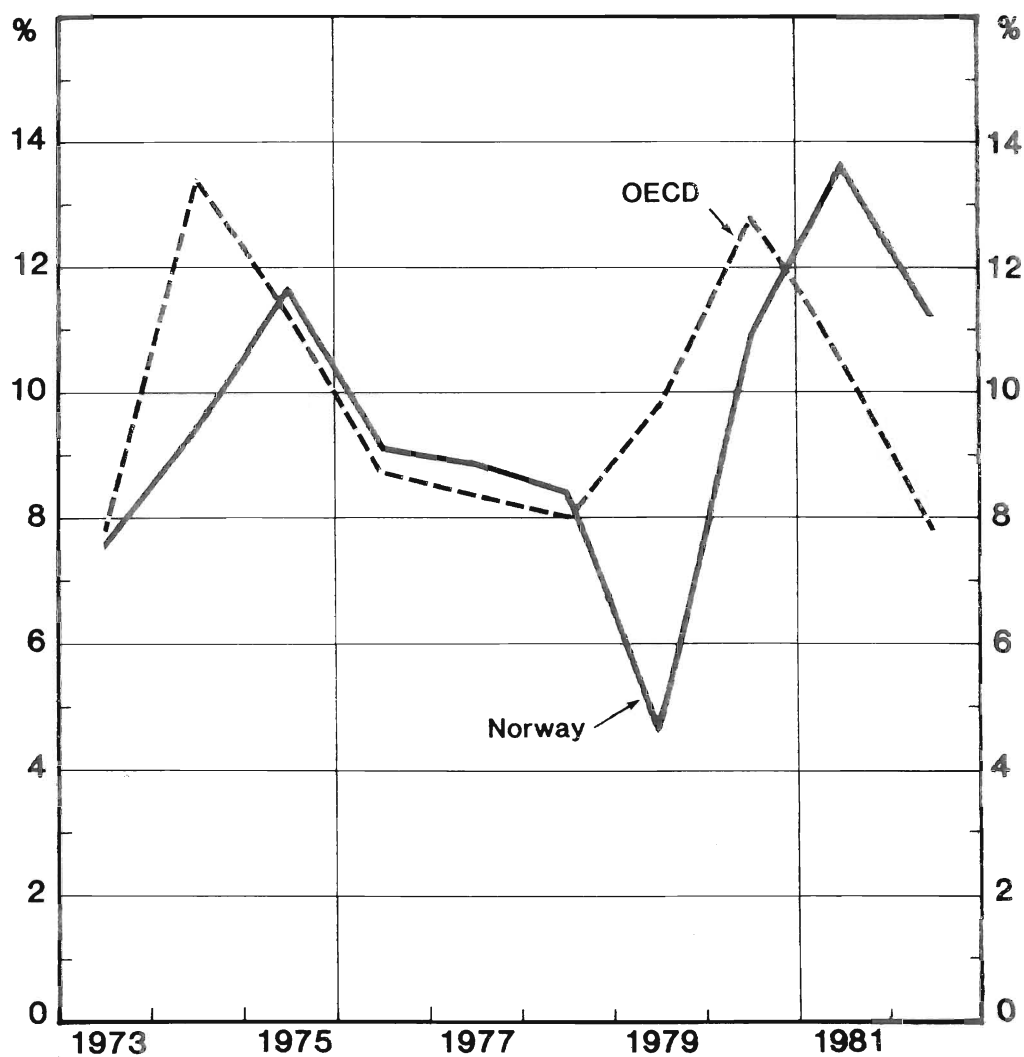


Sources: Central Bureau of Statistics, Labor Market Statistics and St.meld. nr. 1 (1983-84)

Even though unemployment figures in Norway were low through the 70s, the rate of inflation was also to a certain degree kept down (Figure 7). Prices rose faster than what had been the case during the previous decades, but still around or below the average rate for the OECD countries. The last couple of years of that decade, however, this lower rate of inflation was achieved through heavy price regulations.

As can be seen from Figure 7, Norwegian prices have recently risen somewhat faster than the prices in the other OECD-countries, indicating that the causes behind the

Figure V:7 Rate of inflation, 1973–82
Average annual percentage change of consumer prices



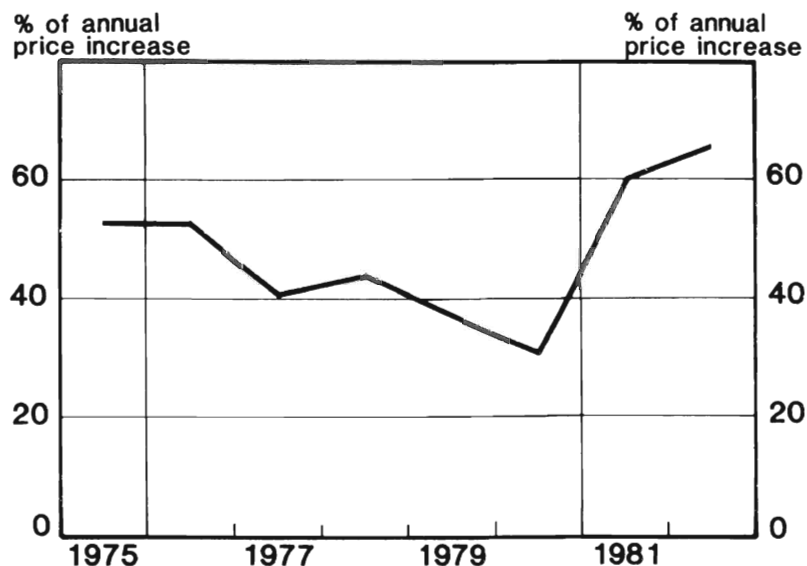
Sources: Central Bureau of Statistics, St.meld. nr. 88 (1982–83), Economic Survey and OECD Main Economic Indicators

Norwegian inflation to an increasing extent are to be found in Norway. This becomes even more evident when the composition of the price index is decomposed into

1. items whose prices are highly determined by Norwegian conditions (i.e. agricultural goods, fish, goods produced in the sheltered sectors, housing expenses, and services), and
2. items whose prices mostly are determined by world market conditions or economic conditions in other countries (i.e. goods produced in the exposed sectors of the economy, goods that basically are produced on the basis of imported materials, and imports not competing with Norwegian production).

The average prices on items in this first group rose 9–10 per cent on the average in 1980, 15–16 per cent in 1981, and around 14 per cent in 1982; while the average prices on the items in the second group rose by 13–14 per cent (1980), 11–12 per cent (1981), and 8–9 per cent (1982). Thus, the rise of Norwegian consumer prices in 1981 and 1982 is to an increasing extent generated in Norway, which is quite different from the situation of the second half of the 70s when Norwegian prices rose increasingly because of factors developing outside Norwegian control (Figure 8).

Figure V:8 The share of Norwegian inflation caused by items whose prices are mainly determined in Norway, 1975–82

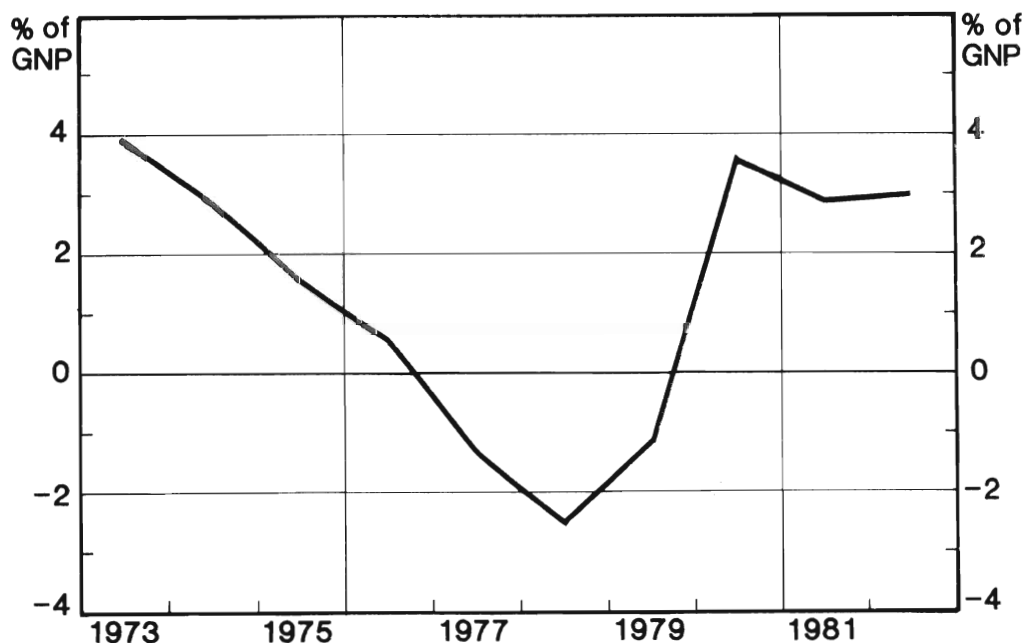


Sources: Estimated by IØI, based on information published in Economic Survey from the Central Bureau of Statistics, and St.meld. nr. 1 (1983–84)

This may indicate that the new price policies implemented by the conservative government, trying to keep prices down through actions intended to increase competition instead of price regulations, has not yet succeeded, either because the effectful actions still have to be made, or because the actions taken do not work as expected. An indication of this may be the fact that the operating surplus in the sheltered sectors of the economy, and to some extent the wages paid out from these sectors, have been rising faster than what has been the case for the exposed sectors all through the 80s and especially in 1982. However, the possibility that there has been an accumulated need for price increases because of the earlier price regulation policies, cannot yet be ruled out. This may hold true, even though the inflation the first nine months of 1983 still is generated in Norway to an extent that exceeds any of the years 1975 to 1980.

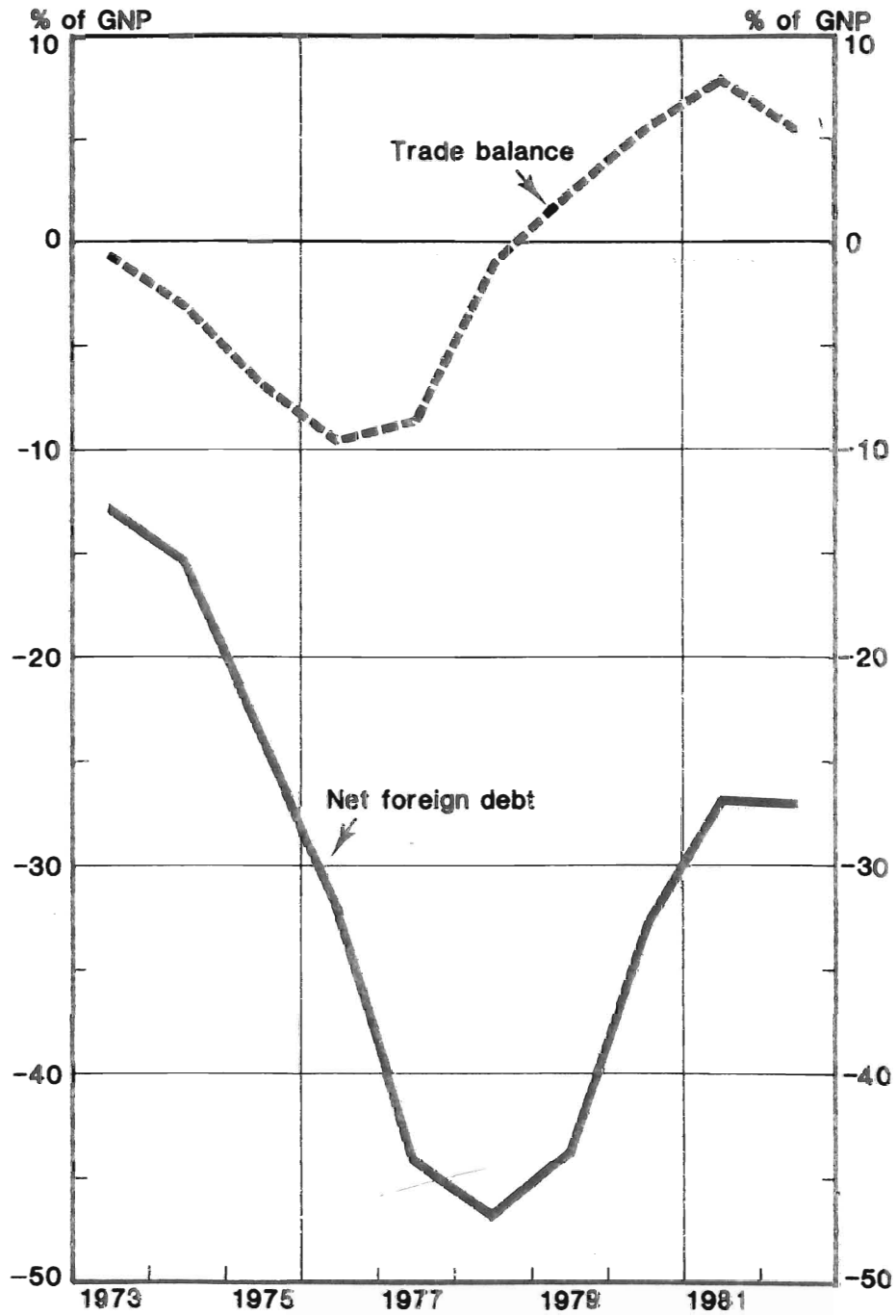
Turning to the question of financial constraints on the government's policies, we see from Figure 9 that there should be room for more government expenditures if this should be considered adequate. With the exception of the years of 1977–79, the general government's accounts have shown a surplus before loan transactions all through the 1972–82 period. During the 80s this surplus has been around 3 per cent of the gross national product.

Figure V:9 Surplus (+)/deficit (–) on general government's account (incl. municipal enterprises) before loan transactions, 1972–82
Per cent of GNP



Source: St.meld. nr. 88 (1982–83)

Figure V:10 Balance of Payments. Norway's net foreign debt and trade balance, 1973-82
 Per cent of GNP



Source: Central Bureau of Statistics, Credit Market Statistics

In general, the external constraints on the governments' economic policies, are in most countries of the world reckoned to be the balance of payments. As can be seen of Figure 10, Norway's net foreign debt is certainly significant. It was around 97 billion NOK or 26 per cent of the gross national product in 1982. Only 27 billion of this, however, was government debt.

During the 80s, the Norwegian balance of trade has shown a surplus, gradually reducing the total net foreign debt.⁴ Especially the government's debt is rapidly paid back. Consequently, foreign debt does not at present create any serious problems for the Norwegian economy, or rather: For the formulation of economic policy.

2 GROWTH PROSPECTS

The previous section describes several factors of importance for discussing the growth prospects of the Norwegian economy for the short term future. Summarizing, we may point to three main factors:

1. The linkage of Norwegian production and the Norwegian market to the economies of other countries imply that the development of the Norwegian economy is highly dependent on how the world economy develops, and of OECD Europe in particular.
2. The importance of the petroleum sector to Norwegian production and to the Norwegian society makes the development of the Norwegian economy largely dependent on how the oil price develops.
3. The size and the role of the public sector in the Norwegian economy imply that the economic development to a significant degree rely on the political actions that are taken.

If we knew how these factors will develop, we could quite easily forecast the growth of the economy with quite a bit of accuracy. That would also be the case if we could rely on the economy to develop according to recent trends. But when important factors change unexpectedly, or the development follows paths which we are not yet accustomed to, there is a great chance for the predictions to be wrong. This can be seen from Figure 11, illustrating the deviations between how the government has predicted manufacturing and mining production (excl. oil and gas) to develop, and how this production actually has developed. Thus, for policy purposes, we need to put more efforts into understanding and evaluating the forces behind the economic processes.

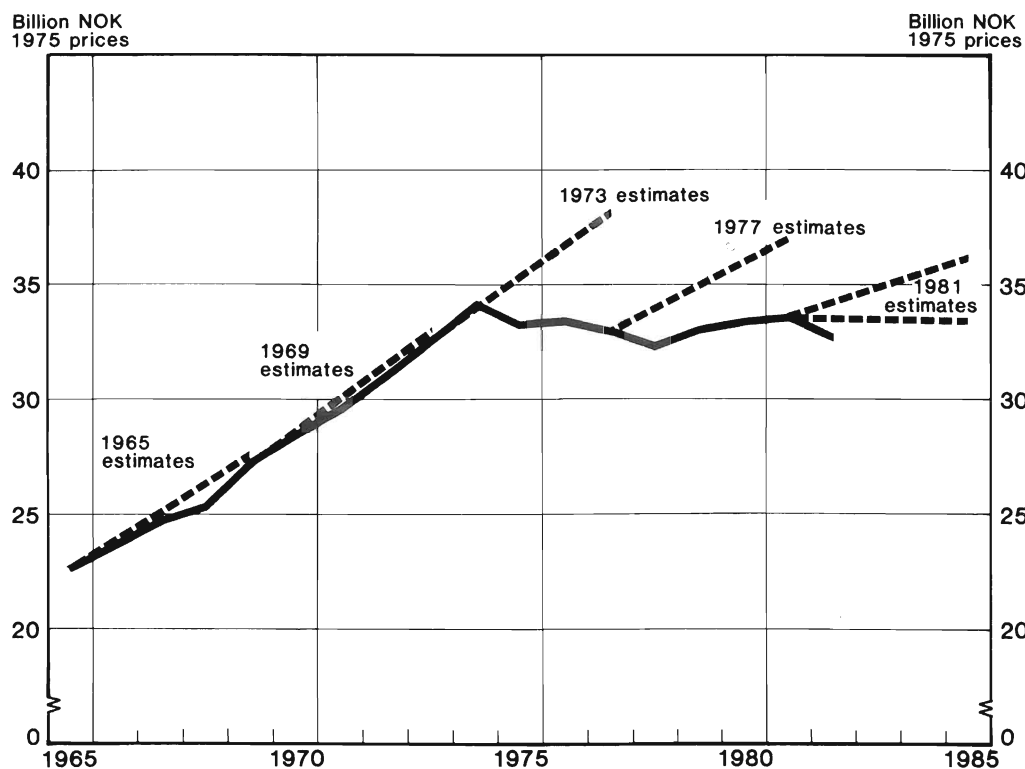
Regarding the first factor of importance, how the international economy will develop, this is a relevant issue for the economies of all the Nordic countries. Thus, this is dealt with in a separate chapter (Chapter II). Shortly, our assumptions regarding the growth of the international economy are:

- The production in the 80s will grow slower than in the 60s but it will recover somewhat from the low growth rates so far in the 80s, (average annual change from 1982–87 is expected to be 2.5 per cent),
- A parallel pattern is expected for the volume of world trade, but at a somewhat higher growth rate (average annual change 1982–87 is expected to be 4 per cent).

These estimates are in accordance with what is most generally expected by economic forecasters in Europe. It should, however, be mentioned that they mark a change compared to the development of the recent past. The realism of these assumptions may thus be questioned, at least as long as the economic situation of the industrialised countries of Europe remain gloomy. The period of recession has not yet ended, though there are some indications of a turn. The unemployment, however, is still extremely high.

In principle, economic growth in a single country may be achieved through increased competitiveness of national firms by capturing market shares from foreign competitors,

Figure V:11 Actual manufacturing and mining production (excl. oil and gas) compared with government forecasts, 1966–85
Billion NOK, 1975 prices



Source: Composed and estimated by IØI, using the medium-term programs of the Norwegian government and National Accounts, Central Bureau of Statistics

or by offensive demand policies followed by the government. Besides the ongoing discussion of the effectiveness of each of these strategies, the governments in almost all countries are prevented from expanding the demand in isolation because of the resulting problems of such a policy on the balance of payments. The point is that the results of the economic policies in one country, depend on the economic policies that are implemented in the other countries. As the governments' economic policies are not coordinated to any significant extent, each country would be better off backing strategies for increased competitiveness regardless of what the others do: If the others implement a competitive strategy, you have to do the same to defend the market shares you already have got; to increase demand in such a situation would just mean that you run into a problem on your current account. This problem would not arise if the others were expanding their demand, but then you could do better by a competitive strategy. Consequently, to the extent that demand policies are the most effective way of increasing growth, the situation described is characterized by what is known as the Prisoner's Dilemma: You cannot do what would be the best for all, because the decisions are made within a context which hardly allow for such an outcome (Heum, 1980).

The implication of this argument may be discussed. Nevertheless, it is obvious that the present efforts of all governments to increase the competitiveness of their national firms in order to increase their market shares abroad and at home, are not consistent. If they were, exports should grow faster than imports, which cannot be realized for all countries at the same time. The political response to this may thus be increased protectionism, hampering the growth of world trade and probably the growth of production as well. If this should be the case the growth of the international economy from which the Norwegian economy will benefit, may be weaker than what is generally expected.

When it comes to the second important factor, the oil price, this is dealt with in a Nordic context in Chapter II. The assumption which is made is that there will be a slight drop in the real price of oil for the 1983–87 period as a whole. The drop will occur during the first part of the period. From 1984 the real price of oil is expected to be unchanged.

This assumption has no dramatic consequences for the Norwegian economy. But the situation is uncertain. At least short term variations may occur, departing significantly from what is expected to be the long term trends of the development of the oil price. This may be of importance for the short term growth prospects of the Norwegian economy. And if the expectations of the long term price development of oil should be adjusted downwards during the period, this will affect the growth prospects in the short as well as in the long run.

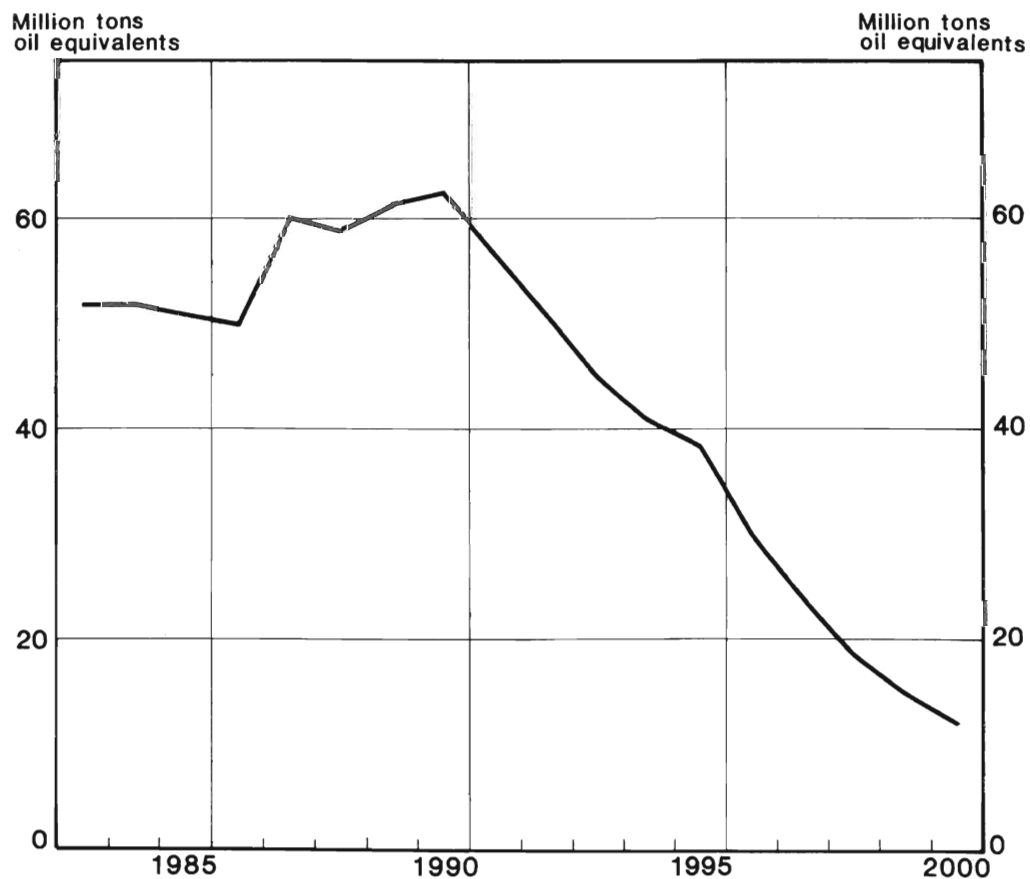
While increases in the price of oil generally tend to slow the growth of the industrialised economies, such changes also increase the market value for Norwegian production of oil and natural gas. Roughly speaking a change in the oil price of one USD per barrel, changes the value of the annual Norwegian oil and gas production by 1.3 billion NOK, when the volume of Norwegian petroleum production and the exchange rates are

unchanged. This immediately affects the state revenue by about 1 billion NOK (1983), the balance of payments, and the gross domestic product. In the long run, however, such changes, if they are expected to be permanent, also will influence investments in the petroleum sector and thus the level of activity on the continental shelf, depending on how the expected returns from undeveloped oil and gas fields are affected.

Almost regardless of what happens to the oil price, the volume of Norwegian petroleum production will increase by a yearly average of 2–3 per cent in the five year period from 1982 (Figure 12). The investments are to a large extent already made, and the profit margins are so large that the producers will not be better off by stopping the production. On the other hand, it is not possible to increase the volume of production substantially because of the long lead time which is necessary to develop a field for production.

Figure V:12 The volume of oil and gas production from fields which are in production or being developed, 1983–2000

Million tons of oil equivalents



Source: Statoils perspektivanalyse (1983)

Investments, however, will be affected if the oil price drops or is expected to drop dramatically and permanently during the period. Our estimates of how the real price of oil will develop give, however, no reason to believe that the investment plans for the period will be changed. They are on the average expected to be 20–25 billion NOK.

If the oil price should drop so much that new petroleum fields in the North Sea no longer are commercially exploitable, this will immediately reduce the government's revenues from this sector. Production would still go on for some time, though. The size of government revenues from this sector would, however, after a steep decline more or less reflect the pattern of production shown in Figure 12, i.e. they would gradually be reduced, and disappear soon after the turn of the century.

Our price estimates for the oil do not, however, significantly affect neither the level of government revenues from the petroleum production, nor the balance of payments. These will still be vulnerable, though, due to the development of the exchange rates, especially vis á vis the U.S. dollar. This development, however, is hard to forecast, so for the purpose of this projection we have made the rather unrealistic assumption of unchanged real exchange rates (Chapter II).⁵

The third important factor: what the economic policies of the government will be, is fairly obvious, depending on what kind of issues one is trying to deal with. In Norwegian politics the question of employment is considered the most important, and the recent rapid rise in unemployment implies that this is the issue that will gain most political attention over the next few years. The significance of the current situation is certainly reinforced by what may yet have to come.

The rapid growth that has taken place in the oil sector, the international economic development, as well as the international specialization of Norwegian manufacturing production, which to a large extent is directed towards slow growing markets, indicate a need for adjustments of traditional Norwegian industries. In other words: Norway is faced with a long term economic problem of transforming the oil wealth into a broader based industrial wealth. One company towns, or industrial regions heavily dependent upon one or a few companies, are especially vulnerable when it comes to structural adjustments, implying that the rate of unemployment may be even more unevenly distributed by region. Besides, the number of people in the labor force will increase. This is partly due to the entry of larger youth groups, partly due to increased female labor market participation. Maybe as much as 100,000–150,000 new jobs have to be created in the 1983–87 period just to employ the net increase in the labor force, though some of these may be part time jobs.

Nevertheless, these economic, demographic, and social changes have political implications of importance for the business environment. Due to the functioning of the Norwegian political economy, the government cannot neglect the employment question, even if it should consider it to be a temporary problem. This means that it will be hard to stick to what is claimed to be their long term policy, reducing the pressure on prices and

costs to improve the competitiveness of Norwegian firms and thus secure employment in the long run. At least as long as the financial situation of the government and the balance of payments do not put any real constraints on government policies, the forces created by the negotiating economy cannot be strained by ideological and rhetoric commitments. So even if the conservative and moderate (non-socialist) parties remain in power throughout the period considered, Norway can hardly avoid an increase in the public sector demand, and to ease the structural change problems through industry subsidies.

According to this argument, the public sector may be expected to grow, while industry subsidies will remain at a high level throughout the medium term future, featuring slow growth in the international economy and structural problems in Norway. As a consequence of this, the growth of the economy will be stimulated somewhat more than recently by government spendings, the balance of payments will be slightly worsened, and the Norwegian inflation rate will remain above the average of other European countries. However, long run growth prospects may be hampered because some of the necessary adjustments of Norwegian production may be postponed.

* * *

In accordance with this discussion of how the three main factors affecting the Norwegian economy will develop, we assume the growth prospects for the Norwegian economy the next few years to be:⁶

- i) Gross domestic product will continue to grow slower the next few years than what has been usual in the past two or three decades. While the Norwegian economy experienced an average growth rate in production of 4.5 per cent in the 70s, this extraordinary process came to a halt in 1981. The growth rate dropped to .3 per cent in 1981, followed by a decrease in national production of .6 per cent in 1982. The prospects for the 1982–87 period are, according to our estimates, a weak recovery with a annual average growth in the range of 1.5 per cent, depending on the international economic development and the national economic policies pursued.
- ii) Private consumption increased by 1.3 per cent in 1981 as well as in 1982, i.e. above the growth rate of the economy. Nevertheless, it has slowed down in conjunction with the drop in GNP. For the next few years we expect private consumption to continue to increase somewhat faster than the growth of production. Our estimate is an annual average increase of 2 per cent up to 1987.
- iii) During the late 70s and early 80s public consumption increased by an annual rate of 4.5–5 per cent. In 1982 the growth rate dropped to 1.0 per cent. For the medium term future, we expect public consumption to increase faster than the growth of GNP due to efforts taken to handle the employment situation. We estimate an annual growth rate of 2.5 per cent for the period 1982–87.
- iv) The development of private investments, inventory changes included, rely heavily on the investments in the oil sector. We expect them to increase by an annual

average of 3 per cent for the period as a whole, but a temporary drop will occur in 1985–86. Investments in traditional manufacturing industries, however, will stay low, and at the end of the period they shall still be about the 1982-level in real terms. Investments in the service sector are expected to show a slow growth. On the whole we assume private investments (incl. inventory changes) to grow slowly by an annual average of .5 per cent during the 1982–87 period. It should, however, be noted that some of the investment decisions in the petroleum sector, downstream activities included, are so large that changes in only one or a few projects quite easily may alter our estimates. Planned investments may for different reasons be postponed or hurried on at a forced rate compared to current considerations, significantly affecting the total amount of investments to take place within the five year period considered. This may be illustrated by the water injection project on the Ekofisk petroleum field, which until the summer of 1983 was still uncertain, but then decided to be realized, which implied that investments amounting to an additional 14 billion NOK 1983 over three to four years within our prediction period were to take place.

- v) Public investments have recently decreased, mainly because of a tight budget situation for local governments. This situation remains, though the expected rise of public demand will to some extent have to be canalized through public investments. Thus, we expect public investments to stop decreasing and to start growing again. For the period as a whole, however, we do not expect the size of public investments to change, i.e. the volume of public investments will be the same in 1987 as in 1982.
- vi) Despite the value of oil and gas exports, Norwegian exports declined by 2.6 per cent in 1982. The slightly increased growth that we expect for the international economy should imply that the decline of traditional Norwegian exports are leveling out and may change for the better. Oil and gas exports are expected to increase.

Table V:6 Balance of resources, 1967–87

	1982 ¹ (mill. NOK)	Average annual change in volume, %			
		1967–72	1972–77	1977–82	1982–87
1. Gross National Product at market prices	362 557	3.7	4.8	2.7	1.5
2. Imports	145 195	4.5	8.3	-0.8	3.0
3. Total resources	507 752	3.9	5.9	1.6	1.9
4. Exports	165 571	5.5	5.3	2.1	2.5
5. Investment (incl. inventories)					
– private	84 272	-0.2	9.8	0.1	0.5
– public	11 382	8.3	3.4	-2.8	0.0
6. Consumption					
– private	176 233	4.1	5.0	1.3	2.0
– public	70 294	4.0	5.6	4.0	2.5
7. Total Demand	507 752	3.9	5.9	1.6	1.9

¹ Preliminary figures.

Sources: Central Bureau of Statistics, National Accounts and own estimates.

Consequently, Norwegian total exports may experience an increase in growth rates, and we expect it to be 2.5 per cent as an annual average for the 1982–87 period.

- vii) Imports are projected to grow slightly faster than exports in the short term future. The import growth rate is higher than the rates for private consumption and investments, partly reflecting the competitive position of Norwegian production, and partly due to import intensive investments taking place in the oil sector. More specifically we expect imports to rise by an annual average of 3 per cent for the 1982–87 period.

These predictions are summarized in Table 6, also showing the past growth trends of the Norwegian economy.

The predictions for exports and imports imply a drop in trade surpluses, and thus a downward effect on the balance of payment figures. Still, this effect does not outbalance the existing surplus. Another factor in the current account balance, which has been of great importance to Norway, is the large interest payments on Norway's accumulated foreign debt. The net interest and transfers to abroad, should be close to, but not exceed, the trade surplus for the 1983–87 period. Thus we expect a surplus in the balance of payments for the period as a whole. However, we have to underline that these considerations are heavily dependent on the assumptions made for the oil price and the exchange rates, especially vis-à-vis the U.S. dollar. Any other price for the U.S. dollar or the oil, may quite easily contribute to significant changes in our predictions for the external balance of the Norwegian economy.

Looking in some more detail at the different sectors of the economy, we expect no real change in the output from traditional manufacturing industries during the next few years. This is partly due to a continuing downward trend that some of these industries still experience, partly because of slow growth in traditional (OECD) markets for Norwegian manufacturing products. Offshore oil and gas production will remain a growth sector in the Norwegian economy, but even that sector will grow at a much slower speed in the middle 80s than during the late 70s. We estimate the average annual change of the petroleum sector for the 1982–87 period to 2–3 per cent. Similarly, the production of private and public services will grow, but at a slightly lower rate, approximately 1.5–2 per cent at the average for the period, mainly depending on the public policies pursued.

The unemployment rate has risen considerably for the last two years, and the chances that it will be substantially reduced the next few years are small. Much will depend on the short term economic policies chosen. As already mentioned, we expect the government's current policy to be challenged by different kinds of lobbying, and that the government hardly will be able to stick to it completely. Public demand will increase. Norwegian production, however, is not expected to rise by more than about 1.5 per cent as the annual average during the period. At the same time the number of people in the labor force on the average will increase by 1–1.5 per cent each of the years 1983–87. However, we suppose total labor productivity to increase by about 1 per cent. Thus, the

increase of part time jobs implies that the rate of unemployment do not have to rise much above its present level. We expect it to stay close to 4 per cent as an annual average for the five year period 1983–87. However, if public demand is not increased as we suppose, we expect the number of unemployed to be larger.

The expected increase of public demand, will put a pressure on the prices. The inflation rate is decreasing, but is still above the average for the countries most important to the Norwegian economy. The unique situation of the Norwegian government to increase demand without any serious constraints, which we expect it to take advantage of, imply that Norwegian prices will continue to rise faster than the average of other countries. The inflation rate may still be lower, though, than what it has been so far in the 80s, due to lower inflation abroad. In Chapter II we estimated the consumer prices of the industrialized countries to increase by 6 per cent as the annual average for the 1983–87 period. In accordance with this we estimate them to rise by 7–8 per cent in Norway.

3 CONCLUDING REMARKS

This examination of the Norwegian economy indicates that, by and large, Norway faces a quite fortunate position compared with the economies of other industrialized countries. However, this fortunate position contains threats which have to be seriously dealt with. It is achieved mainly by the production of oil and natural gas. The international competitiveness of Norwegian production is therefore extremely vulnerable. In addition, the unsolved structural problems in traditional industries create a problem of unemployment which cannot find any long term solution through the petroleum sector.

The threat in this situation is even more obvious, when the revenues from the oil and gas sector to the government are left out of the government's accounts. These would then have shown a deficit equivalent to 6 per cent of the gross national product for each of the years 1978–82. There is, of course, not much relevance in such calculations as long as Norwegian petroleum may be commercially exploited. If the current situation should last, this will go on for at least 100 years. But things may change. Thus, even if the relevance of such calculations may be questioned, they illustrate that the Norwegian economy is quite vulnerable from downward changes in the oil price.

This vulnerability, as well as the increasing number of unemployed, should urge politicians to take into account the situation facing the traditional industries, and to seriously consider what is to be done if the oil price temporarily should drop. This last issue has primarily short run implications, raising the question of how to deal with substantial variations in the amount of revenue from the petroleum sector, either occurring from variations in the oil price or from changing exchange rates (NOU 1983:27). The first is on the other hand relevant both in the short and the long run – in the short run mainly because of the employment situation, in the long run because the petroleum resources will not last forever. As the object of this policy should be to spread risks through the composition of Norwegian industries, the industrial policy should for

obvious reasons not secure the variation of industries by making them solely dependent on the activities of the Norwegian petroleum sector. This does not imply that the Norwegian petroleum sector should not be used as a mean to develop products and competence which might be competitive for a broad range of purposes or in different markets. On the contrary, this seems at present to be one of the more realistic options to exist. What it does mean, however, is that Norway may do herself a disservice if the petroleum sector is organized so that Norwegian firms of traditional industries only turn out to be competitive when supplying that market, and not in other international competitive markets as well.

NOTES

- 1 In this calculation the following SITC-2 items are classified as high technology products: 523, 524, 541, 716, 718.7, 736, 741, 752, 761, 763, 764, 771, 773–776, 781, 782.1, 791.1, 792, 871, 872, 874, 881.1, 881.2, 882.2, 884.1, and 885.
- 2 One company towns are defined as areas of small populations (200–20.000 inhabitants), which are located far from larger cities (more than 45 minutes of travelling) and whose jobs are mainly located to one company or companies within the same industry (NOU 1983:10).
- 3 The distribution of one company towns are not necessarily more widespread in Norway than in many other countries. Nevertheless, the problems arising in these regions seem to gain more political attention in Norway, which among other things may be due to the election system to the parliament. Rural areas elect more representatives than the share of the population living in these areas should imply.
- 4 The reason why the debt was not reduced in 1982 was the development of the U.S. dollar, and the fact that most of the Norwegian loans abroad are quoted in the U.S. currency.
- 5 The base year for our estimates is 1982. Since then, the value of the U.S. dollar has increased substantially towards most currencies. As this book is completed (January 1984) the value of the U.S. dollar in relation to NOK has risen more than 20 per cent compared to the average 1982 exchange rate. Bearing in mind that the Norwegian petroleum sector constitutes one sixth of Norwegian GNP, that the price of oil is quoted in U.S. dollars, and that most of Norwegian petroleum is exported, it is obvious that such changes in the exchange rate significantly will affect the value of domestic production and exports measured in Norwegian currency.
- 6 NOU 1983:37 estimates different perspectives for the Norwegian economy up to the year 2000. Our perspective does not have this long time horizon, and is not based on a well defined mathematical model, either.

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Veckans Affärer nr. 27/1983

CHAPTER VI

SWEDEN: AN ECONOMY AT THE CROSSROADS

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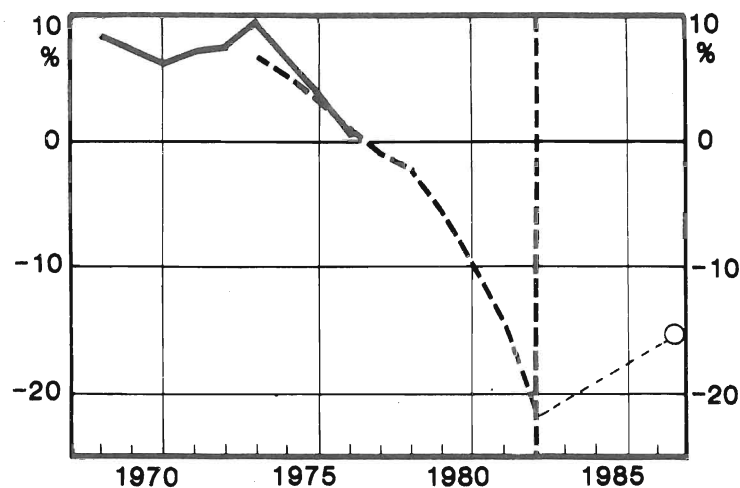
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1 A DECADE OF STAGNATION

From the end of World War I up to the middle of the 70s the Swedish economy was able to stay on a relatively stable growth path, corresponding to an annual increase in industrial production of about 5 per cent. Despite the oil crisis, production in Swedish industry reached a historic peak in 1974 mainly because of an inflationary boom in basic industries and expansionary policies to bridge the recession. Since then, however, a decade with no manufacturing growth has passed. In 1983 manufacturing output was 4 per cent below the peak in 1974. In this respect, Sweden has been one of the worst performers in the whole OECD-area.

In a historic perspective this is not the first major economic crisis that Sweden has been through. Neither is it the worst, if by "worst" is meant the highest unemployment rate, the steepest fall in production or the highest number of corporate failures. In those terms the crises at the beginning of the 20s and the 30s were more severe. But these crises were of a short-run nature. Policy interference on the part of Government was insignificant. The "pre-crisis" levels of production and employment were surpassed already in the following upswing in the business cycle. Contrary to that experience the current crisis

Figure VI:1 Net foreign assets in relation to GDP, 1973–82
Per cent



Sources: IUI and Riksbanken

has dragged on for ten years. A general conclusion in other IUI-studies¹ has been that the duration of economic distress cannot be traced back to an overall decline in the technical competence and market positions of Swedish industrial firms. On the contrary, available evidence shows that the vast majority of them adjusted well to the radical changes that occurred in market conditions around the mid-70s. This appears to be particularly true in the case of the large Swedish multinational engineering firms that form the backbone of industry. The explanation must be sought elsewhere. A central question is to what extent extensive Government policy involvement has contributed to the disorderly economic situation.

The development of the public sector contrasts sharply with the industrial sector. The commitment to full employment has been strong. Already ambitious welfare programs have been supplemented by extensive labor market schemes and generous industrial subsidies. Thus, public sector spending increased during 1975–82 with 2.8 per cent per year on the average. In relation to GDP it increased from less than 50 per cent in 1975 to close to 70 per cent in 1982. This is a considerably higher share than in the rest of OECD. But whereas public sector spending had expanded rapidly in relation to GDP since the middle of the 70s, public sector revenues from taxes and other public charges stagnated. In 1977 they represented 50 per cent of GDP and they have remained at that level. Although this is more than in any other OECD-country a huge deficit in the public sector has developed. In 1982 it amounted to 7 per cent of GDP.

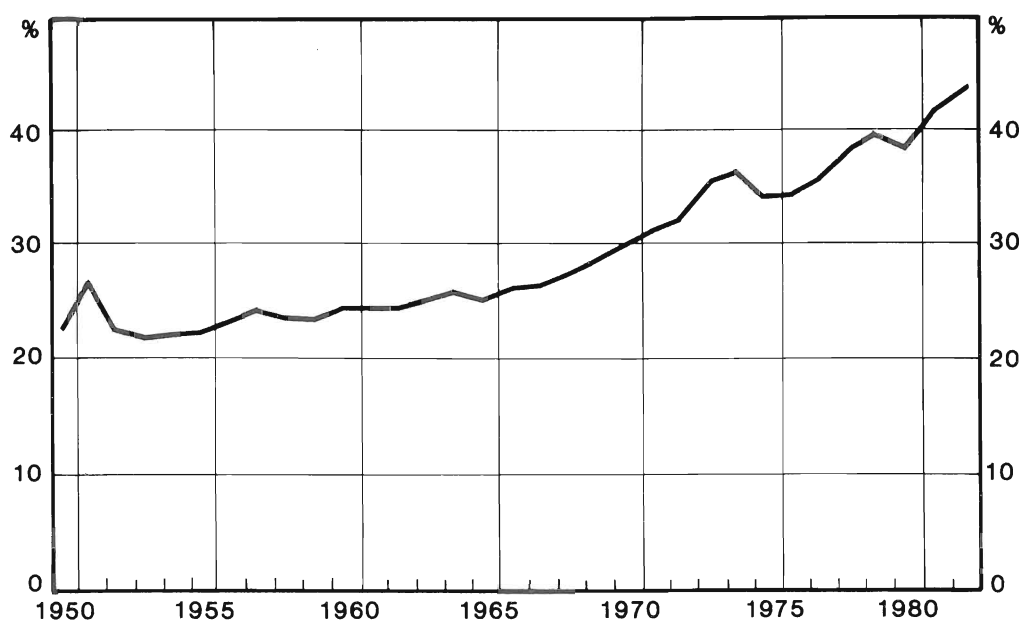
Another characteristic feature of the crisis years of the 70s was a deteriorating external balance. The deficit on the current account amounted to close to 4 per cent of GDP in 1982. To a large extent this reflects the inconsistency between the overall level of consumption – private as well as public – and the level of exports generated by a stagnating manufacturing sector. This is not a new problem in the Swedish economy. Since the middle of the 60s recurrent and increasing deficits have characterized the external balance. Over the last ten years, Sweden has turned from a net creditor into a considerable net debtor vis-à-vis the rest of the world. Net claims amounted to 7 per cent of GDP in 1973 but in 1982 net foreign debt was 22 per cent of GDP (Figure 1). The interest payments carried by the foreign debt amounted to 2.6 per cent of GDP in 1982.

The already high openness of the Swedish economy has increased rapidly since the beginning of the 70s. Foreign debt and the interest payments it carries have linked the Swedish capital market more closely to the international capital markets. This is but one expression of how the Swedish economy has become more and more integrated with international markets. Exports amount to one third of GDP, i.e., approximately the same share as in Denmark and Finland, but below Norway. More than 40 per cent of Swedish manufacturing production is shipped to world markets (Figure 2).

The aggregate figures on the internationalization of Swedish industry also reflect the growing dependence of most Swedish firms on export markets. But, in addition, they reflect the ongoing structural transformation of Swedish manufacturing industry and the dominance of large multinational engineering firms. (See Special Study 1 by Oxelheim in

Figure VI:2 Commodity exports in relation to total sales value in mining and manufacturing, 1950–82

Current prices, per cent



Source: Central Bureau of Statistics

this volume.) Swedish manufacturing industry is probably more multinational than that of any other country. Subsidiaries abroad, owned by Swedish firms, employed 297,000 people in 1978, i.e., 34 per cent of total industrial employment in Sweden the same year. That share has increased further since then.

Swedish foreign trade at the beginning of the postwar period exhibited a commodity mix that was very similar to that of Finland today. Forest products accounted for half the export value. Their share has decreased very much since then and engineering products have taken the place of forest products. (See Leskelä's appendix in the Statistical Supplement.) Furthermore, as can be seen in Table 1, Swedish exports are dominated by a few large firms. In 1981 the 10 largest export firms, among which 8 were engineering firms, accounted for 36 per cent of Swedish exports and the 20 largest accounted for half.² The degree of concentration has increased since the mid-60s. In particular, the share of the top 10 companies has increased. The lack of stability in the ranking should also be noted.

Table VI:1 Sweden's 10 largest export companies 1981

Company	Ranking according to the size of exports			1965		1978		1981	Start -up year
	1981	1978	1965	Exports from Sweden, in per cent of total Swedish commodity exports	Share of employment in Swedish-owned affiliates abroad	Exports from Sweden, in per cent of total Swedish commodity exports	Share of employment in Swedish-owned affiliates abroad	Exports from Sweden, in per cent of total Swedish commodity exports	
Volvo	1	1	1	5.0		9.2		10.6	1926
ASEA	2	4	5	2.6		3.4		5.2	1883
Saab-Scania	3	3	13	1.6	Share in companies 1-5 29.3	3.8	Share in companies 1-5 13.0	4.2	1937/1891
Electrolux	4	6	25	0.8		2.3		3.6	1910
Sandvik	5	5	9	2.2		2.6		2.6	1862
Ericsson	6	2	8	2.3		4.0		2.5	1876
SCA	7	8	3	3.0		2.1		2.3	1929
Boliden	8	19	18	1.4	Share in companies 6-10 48.8	1.2	Share in companies 6-10 31.3	1.8	1925
SKF	9	15	6	2.5		1.5		1.6	1907
Alfa Laval	10	11	20	1.1		1.6		1.5	1878
LKAB	11	10	2	4.6				1.8		1.5	1890
Stora Kopparberg	12	14	12	1.7		1.5		1.5	13th century
Svenska Varv	13	7	—	—		2.1		1.5	(1977)
Södra Skogsägarna	14	16	—	0.6		1.5		1.5	1943
SSAB	15	13	—	—		1.5		1.4	(1978)
MoDo	16	18	7	2.4		1.3		1.3	1873
Bofors	17	17	21	1.0		1.3		1.2	1873
Holmen	18	21	23	1.0	Share in companies 11-20 0.9	1.2	Share in companies 11-20 0.9	1.2	1609
Billerud	19	—	19	1.2		(1.0)		1.2	1883
Papyrus	20	—	—	0.3		0.9		1.1	1895

Source: De utlandsetablerade företagen och den svenska ekonomin, Forskningsrapport 26 1984, IUI, Stockholm

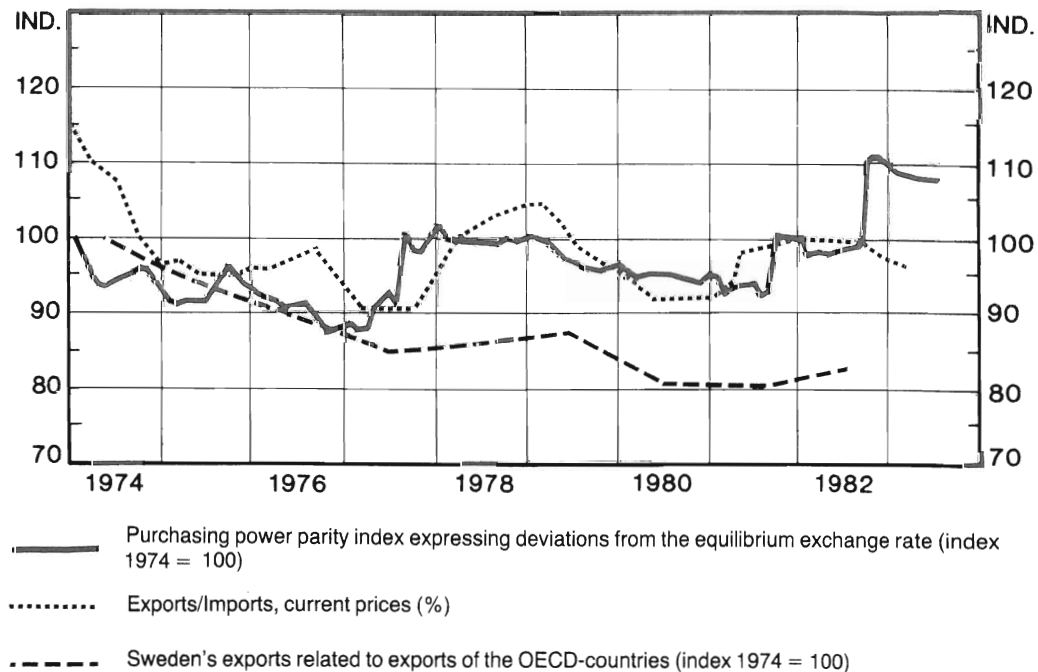
2 SUSTAINED GROWTH OR INFLATIONARY UPSWING

2.1 The Swedish Economy 1983–87

The first oil price shock 1973/74 interrupted industrial growth. Since then two international upswings have passed but with an unusually small pull effect on the Swedish economy. A third international upswing has been underway since 1983 following the recession in 1980–82. This time the possibilities for the Swedish economy to tie in with growth above the OECD-average is considerably better than on the two earlier occasions. One important reason is that the earlier overvaluation of the Swedish krona has been removed, at least temporarily, through a series of devaluations. Corrected for changes in the purchasing power of the krona, its value today is considerably lower than at any time since the beginning of the 70s. (Oxelheim (1983) and Figure 3).

The large and, with respect to the business cycle, well-timed devaluation in 1982 represented a considerable stimulus to Swedish industry. It will give the Swedish economy a flying start on the five-year-period covered by this forecast. In 1983, Swedish industry is in a phase of rapid recovery, mainly based on the competitive edge given by

Figure VI:3 The equilibrium exchange rate, trade balance and market shares, 1974–83



Source: Oxelheim (1983)

the undervalued krona. The ability to sustain growth through and beyond 1984 is, however, more doubtful. The upswing will peak in the second half of 1984 and the nature of the rebound 1985-86 will very much depend on the policy foundation laid in 1984.

Therefore, two forecast alternatives are presented beyond 1984. Firstly, the successful scenario in which a tight demand policy is carried out during 1984 and 1985 aimed at containing the inflationary forces created by the devaluations. This policy will lead to initially increasing open unemployment. The Swedish economy will, however, in return have a good platform to start from in 1985 for the second half of the 80s. Secondly, (the inflationary scenario) one alternative forecast where the ongoing upswing develops into an inflationary "bubble". An initially better employment record and probably also to a slightly higher level of consumption in 1984. During 1985, inflation will accelerate, economic growth slow down and both the external and the internal balance will deteriorate slowly. Unemployment will increase considerably from 1985 and onwards. Sweden will approach the Danish situation of today. The balance of resources presented in Table 2 summarizes the more successful scenario. Gross Domestic Product is estimated to increase 2 per cent per year. Compared with earlier IUI forecasts over the Swedish economy growth prospects have deteriorated in the medium term.³ The reason is that imbalances in the economy have been aggravated in the last couple of years. Therefore, the starting point for a recovery is considerably worse.

Growth will be concentrated to the industrial sector. The export sector, in particular, will grow, primarily due to the devaluations in 1981 and 1982, but also due to a brighter outlook for Sweden's most important export markets.

A pronounced shift as to growth prospects occurs between the various sectors of the economy. Public sector consumption, particularly local government consumption, will have to be kept at a very tight rein for budget reasons. The need to hold back wage costs will lead to low growth also in private consumption.

Capital formation will also reflect the shift from public sector growth having been a disruptive demand engine in the economy to private sector growth pulling the economy. The long-run decline in private fixed capital formation is estimated to end and be reversed into an average 3.4 per cent increase per year up to 1987. Public investment activity will remain at today's level whereas a substantial decline of 2.8 per cent per year will take place in residential investments.

The outcome of this forecast crucially depends on the ability of the Swedish government to contain inflation in the coming five years. The scenario presented in Table 2 must be regarded as an optimistic one with respect to inflation rates and competitiveness to judge from policy performance in the past 10 years. It requires supreme policy control of the domestic price level, with an undervalued currency during a business upswing. But we see this as the only way of getting the Swedish economy back to a stable long-run growth path before the end of the 80s.

Table VI:2 The Swedish economy 1967–87
The successful policy scenario

A. Balance of resources

	1982 Bill SEK	Average annual change in volume, %			
		1967→72	1972→77	1977→82	1982→87
Gross domestic product	620 685	3.7	1.9	1.5	2.0
Imports	207 586	6.5	4.2	1.0	3.6
Total resources	828 271	4.2	2.4	1.4	2.4
Exports	202 565	7.6	2.9	4.3	5.6
Investments	116 186	2.6	0.7	-1.6	0.9
private	49 071	2.2	4.6	-3.6	3.4
public	40 881	4.7	-1.1	0.5	0.3
residential	26 234	0.2	-4.5	0.6	-2.8
Consumption	515 240	3.6	2.9	1.2	0.8
private	330 485	3.0	2.6	0.3	0.7
public	184 755	5.0	3.5	2.6	0.9
Inventory changes ^a	- 5 720	..	..	..	..
Total demand	828 271	4.2	2.4	1.4	2.4

^a Incl. statistical discrepancy

B. Manpower
1 000 persons

	1982	Changes			
		1967→72	1972→77	1977→82	1982→87
Labor force	4 409	195	205	182	58
Employment	4 219	170	236	120	-24
Unemployment (% of Labor force end year)	137 3.2	25 2.7	- 32 1.8	62 3.2	83 5.0

	1982 Bill SEK	Average annual change in volume, %			
		1967→72	1972→77	1977→82	1982→87
C. Households					
Disposable income	336 271	2.2	3.5	-0.3	0.9
Savings ratio	1.7	3.6	4.0	3.9	2.5
D. Manufacturing and mining					
Production		4.6	0.5	-0.4	2.2
Productivity		6.9	1.9	1.8	3.5
Investments		2.9	0.5	-5.9	3.7
Investments/Value added, %		15.5	16.8	12.8	13.3
E. Prices, etc.					
Producer prices		3.8	11.9	10.5	8.5
Export prices		3.4	12.4	10.1	8.0
Import prices		3.0	15.0	13.3	7.6
Consumer prices		5.4	10.1	10.0	8.2
F. External balance (% of GDP)					
Trade balance		-0.3	-0.6	-1.3	2.5 (1987)
Current account (excl. interest payments)		-0.1	-0.7	-1.9	2.5 (1987)
Interest payments, net		-0.2	0	-1.3	- 1.9 (1987)
Net foreign debt		—	3.1	-10.1	-15.0 (1987)

Source: Central Bureau of Statistics, IUI

The inflationary scenario is presented in Table 3. It is a sketch of what would happen if policy makers fail to bring inflation rates under control. Inflation is assumed to be 10 per cent per year on average, i.e., 4 percentage points above the international inflation rate assumed in Chapter 2. The main reason would be that policy makers cannot take the short-run political costs involved in curbing public sector growth and cutting down transfer payments. Demands for industrial subsidies and more ambitious labor market programs to keep open unemployment down cannot be resisted when the business cycle turns down in 1985. Cuts in transfers to household, necessary just to offset increasing interest payments, are postponed. The budget deficit would increase rapidly. 1984/85 also carries a considerable risk of a new outburst of cost-push inflation similar to the one in 1974–75.

In the inflationary scenario the positive effects of the devaluations in 1981 and 1982 on the competitiveness of Swedish industry are eroded already at the end of 1984 and a

Table VI:3 The Swedish economy 1982–87

The inflationary scenario

	Average annual change, %	Bill SEK	% of GDP
A. Balance of resources 1982–1987			
Gross domestic product	1.5		
Imports	3.0		
Total supply	1.8		
Exports	4.0		
Investments	1.0		
– private	1.0		
– public	2.0		
– residential	–0.5		
Consumption	0.7		
– private	0.1		
– public	1.9		
Total demand	1.8		
B. Manpower (1 000 persons) 1987			
Unemployment (% of labor force)	300.0 (6.8)		
C. External balance (% of GDP) 1987			
Trade balance	2.1		
Interest payments, net	–3.9		
Foreign debt, net	30.0		
D. Public sector 1987			
Budget deficit		150	14
Deficit in consolidated public sector		160	15
Public debt		1 300	120
Interest on public debt		155	15

Source: IUI

new devaluation is forced in 1985. Inflation will increase further and at the end of the five-year-period Sweden will be considerably worse off than at the beginning. The imbalances in the Swedish economy can be indicated by the deficits in the external balance and in the public sector. Foreign debt will have risen to about 30 per cent of GDP and carry interest payments of more than 10 per cent of total exports in 1987. Public debt will double once more in relation to GDP and be 120 per cent of GDP. The interest payments will amount to 150 Billion SEK or 15 per cent of GDP.

2.2 Gains in Market Shares Ease the External Balance

Sweden's export performance over the last 10 years has been poor (see Horwitz' Special Study 6 in this volume). Despite a devaluation of the Swedish krona by 10 per cent in 1981 Sweden continued to lose market shares in 1982. That year Sweden's share of OECD's imports was about 30 per cent lower than it had been in 1970. As is shown by Horwitz commodity composition and market growth each accounted for roughly one third of the loss of market shares, leaving another third to be accounted for by what might be called a deterioration in competitiveness.

The devaluation of the Swedish krona by 16 per cent in October 1982 radically changed the situation. As was shown in Figure 3 the Swedish krona became, if anything, strongly undervalued. In the successful policy case it is assumed to remain slightly undervalued at the end of the period covered by this forecast. As a result exports will increase by 5.4 per cent per year to 1987. On the other hand, the high import content in most of Sweden's exports, means that imports also will increase rapidly, by 4 per cent per year. Since the overall GDP growth rate in the OECD area has been assumed to be 2.5 per cent. In Western Europe where most of Sweden's exports go, the market will grow even slower. In the successful policy case Sweden will recapture much of the market shares lost over the last 10 years.

The extent to which the Swedish krona is undervalued is a complicated matter depending on how the "correct" value of the Swedish krona is defined. (Oxelheim, 1983.) Measured by a purchasing power parity index (PPPI) the krona was only slightly overvalued at the time of the devaluation. On an annual basis imports and exports were roughly in balance and the speculation against the krona could have been overcome with a considerably smaller devaluation. The devaluation of 16 per cent therefore represented a competitive devaluation of the kind that the international community does regard as improper. Over the last 10 years, however, Sweden has accumulated a considerable foreign debt. It amounted to 22 per cent of GDP in 1982 and net interest payments abroad to 2.6 per cent of GDP the same year. A balanced trade account, therefore, also meant a continuous deterioration of the current account. Something will have had to be done to correct the situation. The Danish situation (see Chapter III on Denmark) illustrates what happens if the adjustment is postponed. One way of adjustment would be through deflation, i.e. sustained, tight domestic policies forcing the

necessary reallocation of resources, as has been done in, for instance, West Germany and Switzerland. Another way would be through devaluation and "inflation". However, if not "supported" by tight policies a devaluation policy is doomed to fail in the long run because of the inflationary consequences. So far, we have not seen any tight policies worth the name supplementing the devaluation in October 1982. The successful policy scenario optimistic forecast alternative presumes that they are enacted at the latest in 1984, even though this is really too late. The inflationary collapse scenario in Table 3 can be said to capture what happens, if they are not.

The devaluation will, however, lead to a marked temporary improvement in Sweden's external balance in 1983/84. In both cases policies will look successful to the outside observer at least through mid-1984.

If tight policies are introduced, the trade balance is estimated to show a surplus of 2.5 per cent of GDP in 1987. This will not only cover the interest payments on Sweden's foreign debt but also enable Sweden to reduce its outstanding net debt marginally. The immediate effects of the devaluations in 1981 and 1982 on the stock of debt were, however, huge. Net debt jumped from 15 per cent of GDP end of 1981 to 22 per cent at the end of 1982. The decline in the value of the Swedish krona as a result of the devaluation and the rise of the U.S. dollar accounted for close to two thirds of that increase in net foreign debt. That developments in foreign exchange markets negatively influenced Sweden's external financial position is not new. Accumulated deficits on the current account represent only half of Sweden's net foreign debt. The remaining half reflects the unfavorable composition of Sweden's assets and debts with respect to the currency situation in the last ten years. Despite the favorable development calculated for 1983-87, interest payments relative to GDP will be as high in 1987 as in 1981. The figure for net foreign debt will amount to 15 per cent of GDP which is about the same as before the devaluation in 1982.

Even in the optimistic alternative the inflation rate in Sweden will stay above the OECD average. Export prices are estimated to increase 7 per cent per year whereas world market prices are assumed to increase 6 per cent per year. Thus, the initial terms-of-trade effect of the devaluation will be only slowly eroded in the successful policy case.

If domestic inflationary pressure accelerates towards the middle of the 80s, due to the absence of tight demand policies, Sweden will probably get caught in a vicious spiral of inflation and repeated devaluations before 1990. The alternative inflationary scenario, presented above, illustrates such a case. A new devaluation of 10 per cent takes place already in 1985. Net foreign debt jumps to more than 30 per cent of GDP in 1987 and annual interest payments reach to 3.5 per cent of GDP.

2.3 Production

In the successful policy scenario ten years of stagnation in manufacturing ends. Output will grow at 2.2 per cent annually up to 1987, with export industries growing faster than the average. The improved cost position of Swedish industry will allow it to capture market shares not only in export markets but also domestically. There will not, however, be much expansion in domestic markets during the coming five-year-period. Demand will be weak.

This means that growth in manufacturing output will be relatively high compared to an estimated 2 per cent annual growth rate in GDP. During the 60s one per cent growth in GDP "pulled" 1.4 per cent growth in manufacturing and during the 70s only 0.6 per cent (Carlsson-Deiaco, 1983). A structural twist in final demand towards service production worked hand in hand with a decreasing share of industrial goods in the different components of final demand. For the period 1982–87 we expect that the relatively faster growth in exports and investments will lead to a temporary increase in the GDP-elasticity of manufacturing output.

Private service production is estimated to grow faster than GDP with a 2.4 per cent growth rate in 1982–87. One important factor promoting growth in the sector of private services will be the expansion in manufacturing. Growth in industrial production generates an increasing amount of service production.

2.4 Sluggish Fixed Investments

The overall level of fixed investments, i.e., in structures and machinery, will remain depressed despite a substantial recovery in private nonresidential investments. Those will increase 3.4 per cent per year on average. Emphasis will be on the manufacturing sector where fixed investments will hit the bottom in 1983. After that they are estimated

Table VI:4 Gross Domestic Product by sectors, 1967–87

	1982, shares per cent	Average annual change, %			
		1967→72	1972→77	1977→82	1982→87
1. Manufacturing + mining	20.7	4.6	0.5	-0.4	3.8
2. Agriculture, forestry	3.4	0.3	-2.2	2.3	1.3
3. Construction	7.3	3.2	-0.2	0.2	-0.4
4. All private services	32.8	2.4	3.0	1.4	2.4
5. Production, public sectors	22.9	5.5	3.6	2.9	0.5
6. Commodity taxes and subsidies, discrepancy	12.9				
7. GDP	100.0	3.4	1.9	1.5	2.0

Sources: National Accounts, IUI

to grow 6 per cent per year meaning an average growth rate of 3.7 per cent per year 1982–87. In 1983, the level of fixed capital formation in manufacturing will be approximately 40 per cent below the previous peak level in 1975 (Figure 4). Despite the upswing that is expected to take place, investments will still be considerably below that level at the end of the forecast in 1987.

The decline in manufacturing investment activity reflects the stagnation in Swedish manufacturing. Capacity utilization rates are low and have been low for a long time. Growth prospects have appeared very uncertain in the short run as well as in the long run.

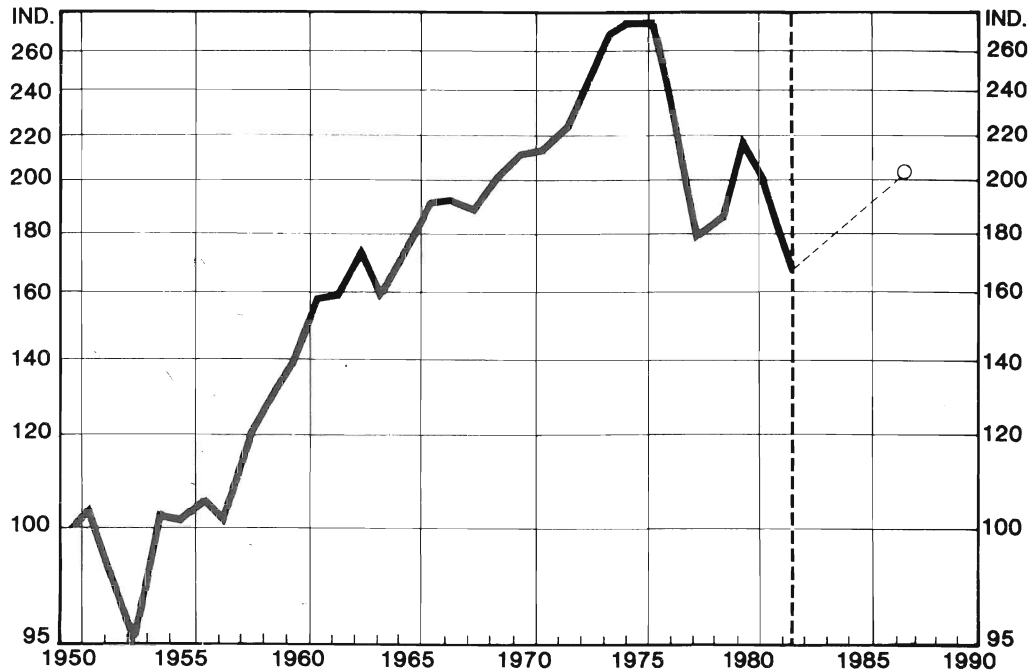
In addition, high real interest rates have forced low return investment projects out of plans. We estimate that nominal interest rates will stay above 10 per cent up to 1987 and that there will be a positive real (deflated) interest rate of at least 2 per cent. To match this, profitability in Swedish industry probably has to stay at the already high levels in 1983/84.

These factors will tend to keep investment spending in manufacturing down, but will probably raise the quality of investment. We can also expect a skewly distributed upswing in investment activity. The export industry has already entered a phase of rapid recovery and will soon encounter bottlenecks in the production. This will raise investment spending through 1985.

The fall in the level of fixed investments in manufacturing may appear dramatic but its implications for growth should not be exaggerated (Örtengren, 1981). There is no reason to believe that a return to growth would mean that the ratio of investments to output should approach the levels of the 60s. On the average, fixed investments are estimated to amount to 13.3 per cent of industrial output 1982–87. That is about 15 per cent below the levels registered before the first oil crisis and its causes are structural, not cyclical. The long-run transformation of Swedish industry towards activities that are less capital-intensive in the traditional sense will continue. In engineering for instance, investments "normally" have amounted to some 8 per cent of output, whereas in the iron and steel industry the ratio has been above 30 per cent.

Renewed growth in the 80s will require relatively less fixed investments than before. This, however, does not imply that the problem of capital formation has become less important, only that it has changed character. Fixed investments in machinery and structures cover but one aspect of the investment decisions in the firms. Its activities range from R&D to marketing, distribution and service. Furthermore, evidence available indicates that the purely mechanical treatment of the products constitutes a decreasing share of the firms' value added, today less than half in most engineering firms (Fries, 1983).

Figure VI:4 Fixed investments in manufacturing and mining, 1950–87
Index: 1950 = 100



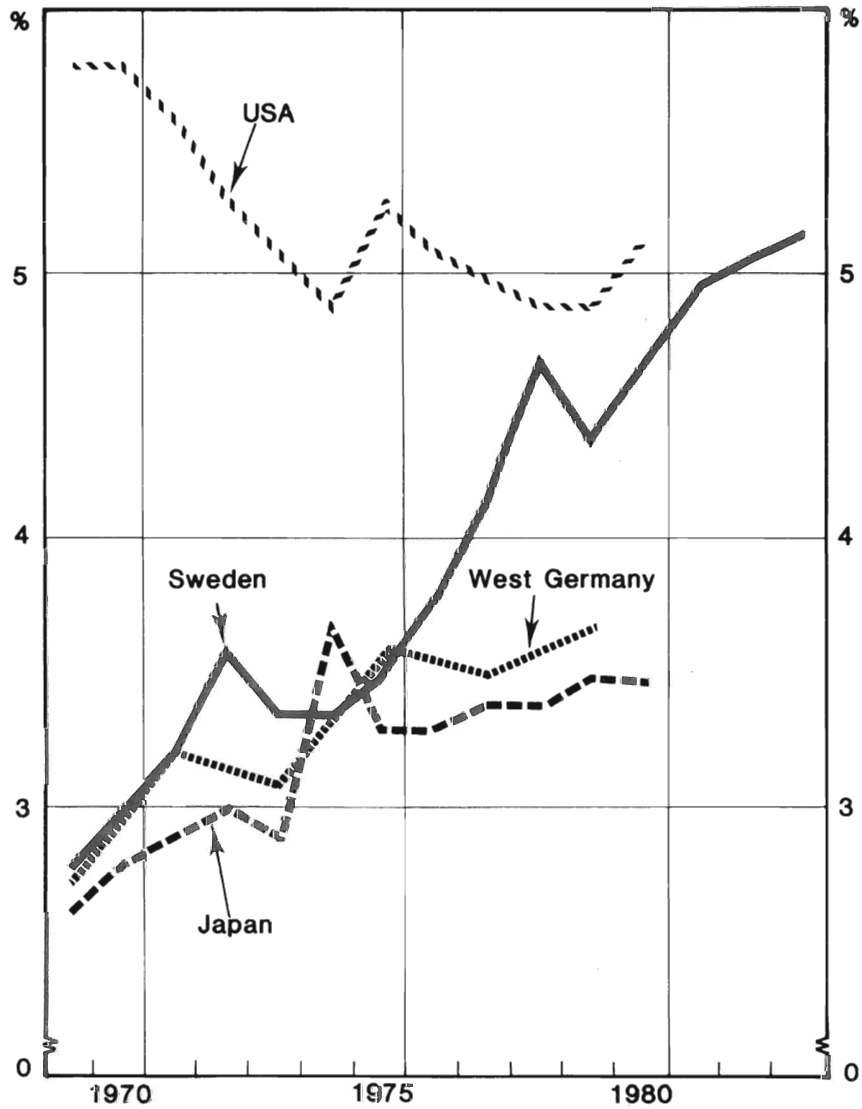
Sources: National Accounts, IUI

A discussion of investments and prospects for growth should recognize the shift in the capital mix that is taking place in industry. The statistical picture indicates, for instance, that Swedish industry in fact has rapidly increased the R&D-investments during the last ten years (Figure 5). Furthermore, the development of R&D-spending is remarkable compared to the leading OECD-countries.

Hence, improved quality in allocation, a continuing shift in the structure of industry and a growing importance of other investments than fixed investments will mean that manufacturing output growth will not be accompanied by a strong increase in machinery investments in manufacturing in neither scenario except during the first few years.

There will, however, be a marked decline in residential investments. They are estimated to fall 2.8 per cent per year. The housing sector receives more subsidies than any other sector of the economy, which makes it a suitable target for savings in the public sector. A person moving into a new flat pays on the average only 17–18 per cent of the cost of the flat. The rest is paid through the tax system in the form of subsidies and transfer payments. Despite the subsidies there is a considerable oversupply of new flats in Sweden. The production of new flats amounts to some 40,000 per year, whereas the demand for new flats at today's prices has been estimated to about 25,000 per year. The marginal tax reform from 1982 which reduces the possibility to deduct interest payments from taxable income will increase the relative cost to live in one family houses and thus have a negative effect on the demand for such houses.

Figure VI:5 R&D-intensity¹ in manufacturing in Sweden, U.S., Japan and West-Germany 1969–83
Per cent



¹ R&D-intensity = Total intramural R&D-expenditures in manufacturing in relation to value added

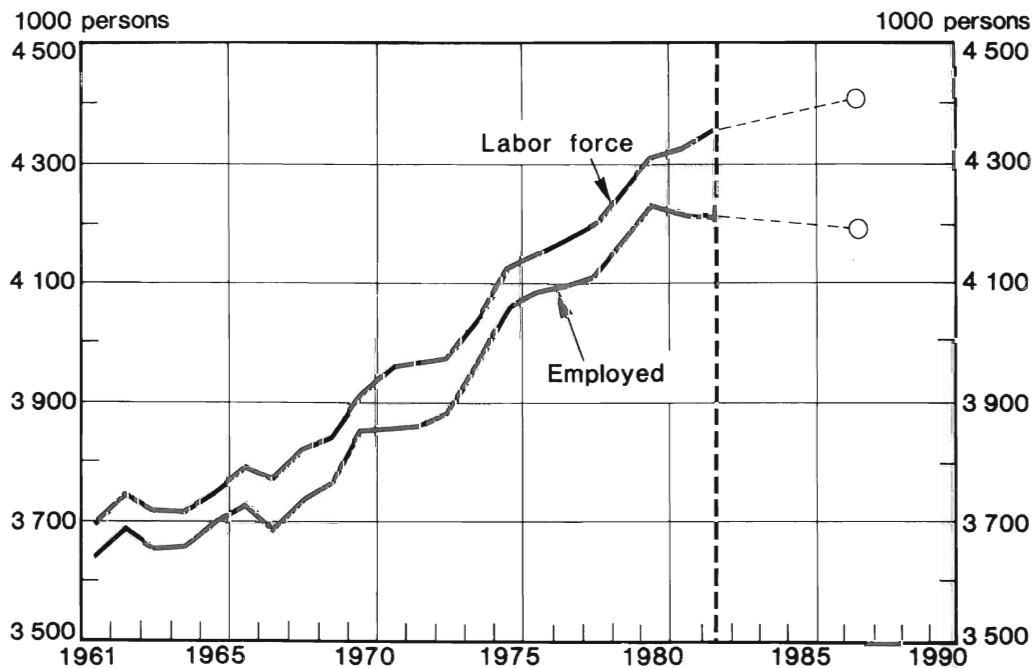
Sources: OECD, UN and Swedish R&D-statistics

2.5 An Increase in Unemployment

Demand and supply conditions in the labor market will not improve over the coming five years (Table 5). The number of people in the labor force is estimated to increase with some 10,000 per year, whereas total employment will fall with about 75,000 people over the whole period up to 1987 (Figure 6). A substantial reduction in employment will take place in manufacturing as well as in agriculture and in construction. The number of people employed in private service production will increase slightly. Above all, however, growing deficits in the public sector will force Central and Local Government to curb hirings. Thus the number of people that cannot find a job on the regular labor market will increase considerably. Given the commitment to "full employment" policy ambitions will be to keep open unemployment down through various labor market programs. Our assessment is that the budget constraint will make this virtually impossible in the longer run without substantially reducing unemployment compensations. We expect that the number of people in labor market programs will remain at the level of 1982, i.e., 3.2 per cent of the labor force.

Figure VI:6 Labor force and employment 1961–87

1 000 persons



Sources: AKU, IUI

Thus open unemployment will have risen to 220,000 people in 1987 or 5.0 per cent of the labor force in the positive case. Such a development might even be a prerequisite for the necessary demand twist. If Sweden fails to achieve this and ends up in the inflationary scenario sketched in Table 3 unemployment is estimated to close to 7 per cent in 1987 and on the rise.

The number of unemployed depends crucially on the development of labor productivity, i.e. production per man-hour. An increase of 4 per cent per year is projected in manufacturing. This is considerably lower than for the period 1960–75, i.e., prior to the crisis.

In the 60s and 70s a typical pattern in the labor market was that the expanding public sector absorbed not only the increase in the supply of labor, but also those people that no longer could find employment in manufacturing and agriculture where employment decreased steadily. During the 80s this patterns must change radically. A critical part of the Swedish projection concerns the ability of the labor market to supply labor to the growth sectors in industry. Despite the high number of people in unemployment or in labor market programmes the growth sectors of the Swedish economy have continued to experience a shortage of skilled labor. At the same time skilled labor has been locked up in crisis firms through massive industry subsidies. The successful policy scenario

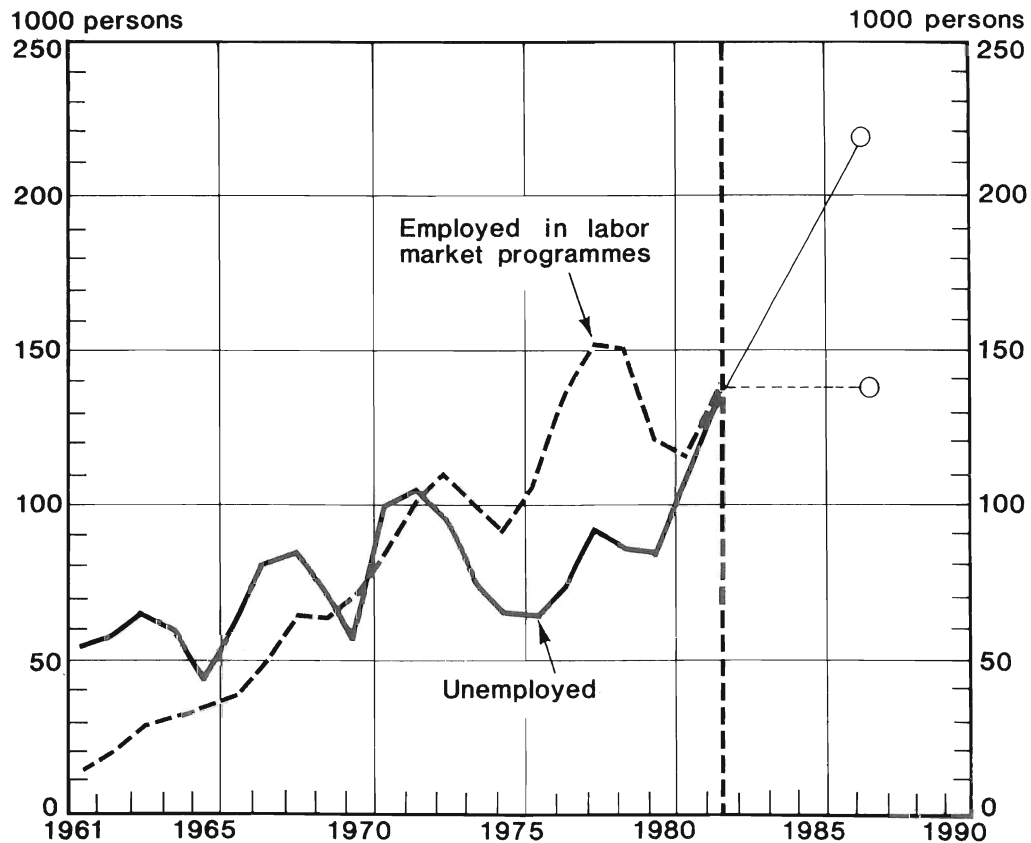
Table VI:5 Balance of manpower resources, 1967–87
1 000 persons

	1967	1977	1987	Changes, %			
				67–72	72–77	77–82	82–87
Population	7 894	8 267	8 334	235	138	59	8
Population of working age (15–74 years)	5 866	6 085	6 086	147	72	- 5	6
Labour force	3 775	4 175	4 415	195	205	182	58
Employment							
– Manufacturing	1 040	1 010	900	- 36	6	-96	-14
– Private services	1 285	1 427	1 437	87	55	-23	33
– Public sector	616	1 094	1 390	256	222	281	15
– Other	786	581	468	-126	-79	-59	-54
Total employment	3 693	4 099	4 195	170	236	120	-24
Unemployment	82	75	220	25	-32	62	83
Employed in labor market programs	49	138	..	54	35	4	..
Labor force participation rate, %	64.4	68.6	72.5	..	..	..	..

Sources: Johannesson (1984), AKU, IUI

Figure VI:7 People unemployed and in labor market programs 1961–87

1 000 persons



Sources: Johannesson (1984), IUI

requires that new entrants in the labor market and skilled labor in stagnating sectors somehow are made available for growing industries. It is unlikely that this can be achieved without a modest increase in open unemployment. For the same reason a necessary requirement is that industry subsidies do not return in the downswing.

2.6 Labor Market Policies

Swedish labor market policies are more comprehensive than in any other industrialized market economy. The expenditures of the National Labor Market Board (AMS) amount to close to 4 per cent of GDP. To that figure we should add another 2 per cent spent on gross industry subsidies. Swedish labor market policy also differs from that of most other industrial countries being much more active and emphasizing job promotion rather than unemployment compensation, like, for instance, in Denmark. The character of Swedish

labor market policy is indicated by the number of people engaged in various labor market programmes, such as training schemes, relief work, etc. During the last ten years their number has exceeded open unemployment (see Figure 7).

Several studies (e.g. Stafford, 1981) have concluded that the Swedish labor market policy has averted a strong increase in open unemployment since the middle of the 70s. But it has also been argued that those positive short-run welfare effects have been achieved at the expense of negative long-run allocational effects in the labor market. To what extent are people in open unemployment or in various labor market programmes in a real sense at the disposal of the market? What are the effects on search and on the willingness to accept job offers that involve migration and/or lower pay than at the previous job? One aspect of this is the unemployment compensation schemes in Sweden. The immediate effects on income of becoming unemployed are considerable given the initial qualifying period. However, that effect diminishes over time and given the average duration of unemployment of about 15 weeks, the effect on annual, after tax income is small. What the effects are on search behavior among the unemployed is not clear. Swedish studies, on the one hand, have not come up with results that prove that the effect is negative. Studies on British and U.S. data, on the other hand, indicate that the level of unemployment compensation has considerable effects on the duration of unemployment (Holmlund-Björklund, 1983).

Another aspect is whether the occupational profile of the various labor market programmes is consistent with the over-riding need to supply and train labor for the growth sectors of Swedish industry, where there exists a shortage of skilled labor even today. However, much of the development over the last ten years seems to have been the opposite. Educational schemes have been primarily aimed at the service sector, the public sector in particular. Relief works have been conducted under Central or Local Government auspices.

Over the last decades there has also been a decline in various indicators of labor mobility. Quit rates, job mobility, and migration were substantially lower in the beginning of the 80s than in the 60s. One obvious explanation has been the overall decrease in demand for labor as a result of economic stagnation in Sweden. However, important supply factors seem to be at work as well. The value of "on-the-job-training" has increased relative to "outside training". Thus the incentives to stay longer on a job increase. This implies that one characteristic feature of the Swedish labor market programs, namely the training of unemployed people at large centers for labor market training is becoming less adequate. It seems as if government support to firms training skilled workers would be a more appropriate policy.

Another factor influencing the propensity of labor to move is the pecuniary benefit after tax associated with the move. Evidence from an IUI-study on the mobility of labor indicates that movers do gain by moving. The annual wage growth rate is increased by about 2 per cent for movers compared with a situation where they had stayed (see Holmlund, 1984). Thus, at least before taxes, it pays to move and that appears to have

been one consideration. It has also been shown that the steep progressivity of the Swedish tax system provides the potential mover with one strong incentive not to move. A less progressive tax system should, other things equal, lead to higher mobility in the labor market.

2.7 No Public Sector Growth

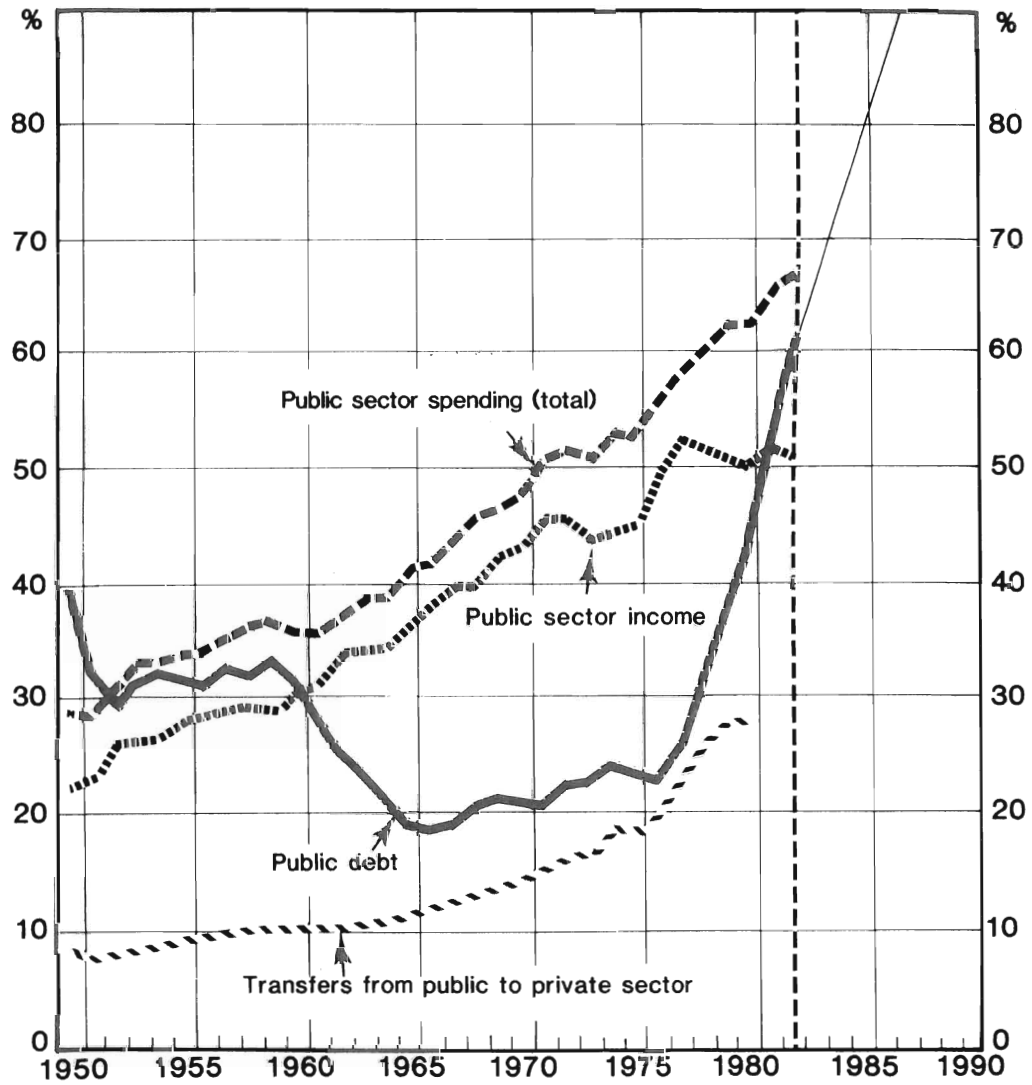
The most serious imbalances in the Swedish economy are found within the public sector. If Sweden is to be any closer to long-run stable growth at the end of the five-year period decisive action to bring the budget deficit under control has to be taken. Furthermore, these measures must be initiated during the present upswing, since the lee-way for policy-making will diminish radically once the business cycle has peaked in late 1984. The budget proposal for 1984 carries a slightly reduced nominal deficit.

So far, the adjustment of the public sector costs has been reluctant in Sweden as well as in other countries. Politicians have found it very difficult to curb growth in public spending. It requires painful reconsiderations of central elements in the Swedish welfare model. It will also have temporary, adverse effects on open unemployment. The long-term problems for policy makers concern how to trade a short-run deterioration in the labor market for long-run improvement in employment.

Nevertheless, our successful policy scenario assumes as a critical element that policy-makers are successful this time in their saving efforts and that the appropriate corrective action to curb public sector spending is in fact taken. (The inflationary scenario assumes exactly the opposite.) Public sector expenditures will remain roughly at today's level in relation to GDP, i.e. close to 70 per cent. An increasingly large share will, however, go to interest payments carried by the rapidly growing public debt. In 1987, interest payments will reach 10 per cent of GDP. The demand twist from public sector demand to private demand in the successful policy scenario means that public sector consumption and investments decrease relative to GDP. But it is more important for success that the rapid growth of transfer payments (net of interest payments) from the public to the private sector will be broken. In volume they will grow at 1.3 per cent per year. Their size in relation to GDP will decrease to 26 per cent in 1987. That would be the first time over the whole post-war period that transfer payments decrease relative to GDP for a five-year period.

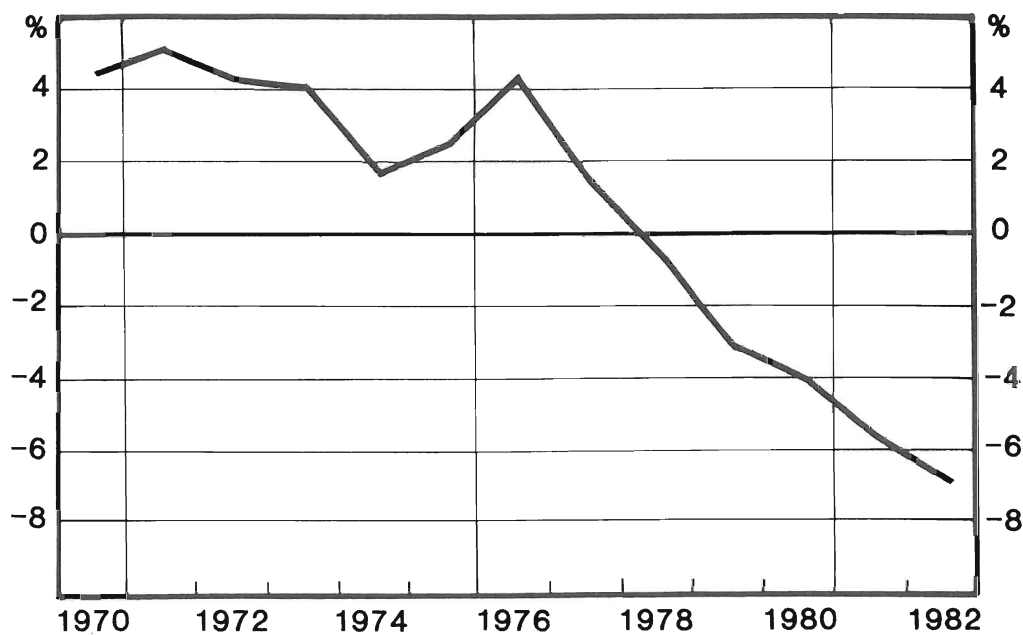
In the successful policy scenario we do not expect the tax level, i.e. the overall ratio of taxes to GDP, to come down, in the coming five years, but to stay at 51 per cent. A redistribution will take place among the various sources of public sector income, primarily as a result of the marginal tax reform in 1982. The growth performance of the Swedish economy over the past years raises the question whether an unchanged tax level really is compatible with the growth scenario in the successful policy case. There seems, however, to be little room for reducing the overall tax level in the coming five year period.

Figure VI:8 Public sector spending, income and debt 1950–87
Per cent of GDP



Sources: National Account Statistics, IUI

Figure VI:9 Consolidated public sector deficit, 1970–82
Per cent of GDP



Source: National Account Statistics

On the other hand, it appears impossible to raise tax rates further during the 80s to reduce the budget deficits without seriously endangering the whole business recovery. Several studies in recent years indicate that negative effects follow from further increases in tax rates on labor supply (Jakobsson, Normann, 1982) and on inflation (Normann, 1983). It has been suggested that the Swedish economy has passed the peak

Table VI:6 Public Sector, 1960–87
Per cent of GDP at market prices

	1960	1970	1980	1982	1987
1. Direct taxes	13.5	18.7	22.9	22.0	20.0
2. Social security contribution	3.7	7.7	13.7	13.9	15.0
3. Indirect taxes	11.2	12.1	13.5	14.7	17.0
4. Total taxes	28.4	38.5	50.1	50.6	51.0
5. Transfers to households	8.3	11.1	18.8	19.6	18.0
6. Interest payments	1.7	1.9	4.1	7.4	10.0
7. Total transfers to private sector	10.5	14.3	29.0	33.8	35.0
8. Public consumption	16.0	21.6	29.2	30.2	28.0
9. Public investment	..	6.5	4.4	3.8	4.0
10. Public spending	36.2	48.5	62.7	68.2	68.0

Sources: National Account Statistics, IUI

of the so-called Laffer curve, meaning that further increases in the overall ratio between taxes and GDP eventually would lead to lower total tax revenues (Feige, McGee, 1983, Stuart, 1981).

Even in this relatively optimistic case the budget deficit in central Government will remain a major destabilizing factor in the Swedish economy for a foreseeable future. We expect the budget deficit to come down from 1982 level of 13.5 per cent to 11 per cent in 1987 in relation to GDP. In nominal terms this will mean a budget deficit of 110 billion SEK in 1987. Public debt will have increased to more than 900 billion SEK or more than 90 per cent of GDP. It will carry interest payments amounting to close to 100 billion SEK or 10 per cent of GDP. How to place these deficits on the credit market with a minimum of disturbance in various markets will constitute a dominant worry of monetary policy authorities at least through the 80s. It seems clear, however, that this cannot be achieved without significant negative effects on the economy either on inflation through increased money supply or on fixed capital formation through crowding out phenomena in the credit market, resulting in high real interest rates.

3. A MARKET SYSTEM IN TROUBLE

The superficial impression from ten years of stagnation and disorder is that economic disequilibrium emerged after the first oil price shock in 1973/74 and in the turmoil that followed in the world economy. The domestic policy question is why the Swedish economy weathered the upheavals of the 70s so badly. The point of departure for a diagnosis should be an overview of certain trends in Swedish economic development since World War II.

World-wide economic disorder around the middle of the 70s occurred after more than 20 years of stable growth. It is also important to have in mind that there was more or less unanimous agreement among economists that stabilization policies had by then become so powerful and sophisticated that sharp swings in the business cycle were a phenomenon of the past.

Several indicators suggest that the Swedish economy adapted to the perceived stability of market conditions and to steady growth trends through an extraordinary improvement in what we call static efficiency in the manufacturing sector. For a quarter of a century labor productivity increased without interruptions. The average growth rate exceeded 5 per cent per annum. Improvement, however, took place primarily within existing lines of production and at the expense of the dynamic allocative efficiency of the economy (see Eliasson, Sharefkin, Ysander, 1983). The labor market grew more rigid. Swedish firms decreased their financial risk buffers in response to what they experienced as a predictable and less uncertain future development in their environments. Fixed capital formation was kept at a high level through increasingly subsidized capital costs for business firms and residential construction. Thus, an increasingly rigid economy working

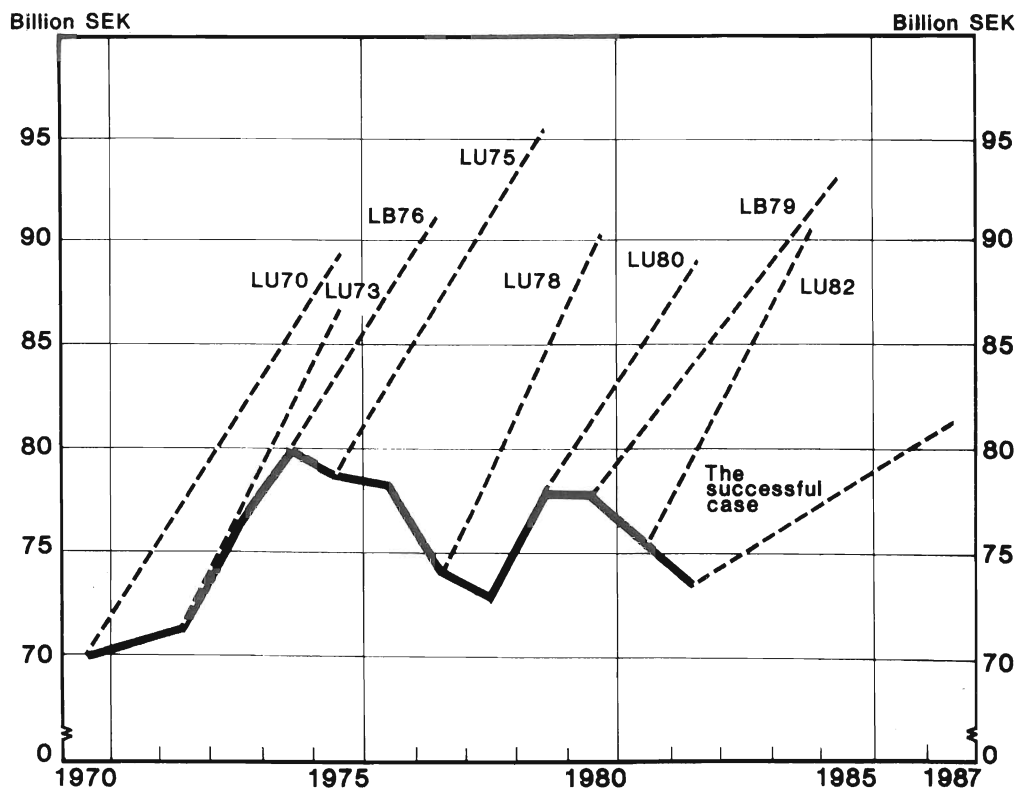
with small buffers evolved, an economy that had adjusted well to the relatively stable market conditions of the 50s and 60s, but that was not well prepared to cope with the supply shocks and the dramatic changes in world market conditions in the 70s.

Still, continued growth was being taken more or less for granted after the deep recession beginning in 1975. This also characterized economic policy making as well as the planning in firms well into 1977. Ambitious long-term public spending programmes were initiated in most areas: distribution policy, labor market policy, regional policy, industrial policy, family policy, etc.

One could say that the Swedish economy became the victim of its own success. In order to handle the supply shocks of the 70s, and the need for structural adjustment that accompanied them, swift and radical change of policy would have been required. Above all, the market signals should have been allowed to force the necessary adjustment. The

Figure VI:10 Forecast and outcome – industrial production in Swedish medium-term forecasts

Billion SEK at 1975 prices



Sources: National Account Statistics, Department of Finance and IUI

course taken was the opposite one. Since growth would eventually return, Sweden could adjust to the new market signals on the basis of old supply structures with a minimum of social costs. The expectations are well summarized in Figure 10. It shows forecasts on industrial growth from the public long-term surveys from 1970 and onwards as well as the medium-term forecasts prepared by IUI in 1976 and 1979.⁴ The IUI projection of 1979, however, was one of the first to signal that the Swedish economy might have been seriously damaged by policy interference.

The adjustment process in the Swedish economy is mainly guided by signals from various markets, in particular from the world market, but also from domestic product markets, financial markets and the labor market. The decision makers in the economy, the entrepreneur and the business man in their investment decisions, the saver in his portfolio choice, the worker when deciding whether to accept a job offer or not, etc., act upon their interpretation of those market signals. The decisions are based on incomplete knowledge about present as well as future market conditions. Solutions that appear to be the best possible ones are often wrong and have to be continuously revised and past mistakes abandoned.

In practically all markets price signals are heavily influenced on their way to the decision makers by taxes, subsidies, regulations and protectionist measures. These interventions from wedges in the market process, influencing the allocation of resources. The cost of each single intervention in terms of reduced long-run growth appears perfectly reasonable in comparison with short-run welfare gains. However, when taken together, they represent a major distortion of the market system, with implications for long-run economic growth that economists so far have been only capable of indicating.

The higher the rate of taxation the more it pays to adjust behavior to the tax distorted price signals in the markets. A recent study indicates, for instance, that Swedish industry, more than industries in other countries, has adjusted its real and financial asset structures to the system of corporate taxes (Södersten–Lindberg, 1983). The Swedish corporate tax system is designed to stimulate fixed capital formation financed through retained earnings. There is evidence indicating that the design indeed had the intended effect on overall fixed capital formation. But it also had allocational side effects such as favoring capital intensive industries and firms with a good historical profit record. Resources were locked up in the "wrong" kind of activities at the first half of the 70s contributing to a significant misallocation of capital that took place in Swedish manufacturing (Eliasson–Lindberg, 1981). Furthermore, it led to heavily subsidized capital costs for Swedish firms in relation to the cost of labor (Ysander, 1979).

Various subsidies represent another increasingly important way of market intervention in Sweden (and elsewhere). Their total share of GDP has been calculated to have grown from 4 per cent in 1970 to 10 per cent ten years later. Subsidies to housing and to agricultural production have long tradition in Sweden and have increased in importance during the last ten years. A novelty in the field of interventionist policies has, however, been the huge industry subsidies to a limited number of failing firms in the basic

industries from the middle of the 70s. Within a few years industry subsidies increased from practically nothing to 16 per cent of value added in 1979. Except Norway no other OECD-country is even close to that figure (see Carlsson's Special Study 3 in this volume).

In a market economy, the prices of which are distorted by large tax wedges, subsidy and regulation policy fine tuning and further selective manipulation of the economy is likely not to give the intended results but only spin off further disruptions. Crude and blunt measures, on the other hand, aiming at removing such obstacles in the market process may be the only way to bring the Swedish economy back to stable growth path. Sophisticated short-run stabilization policy would then be subordinated such long-run growth promoting policy measures and an intermediate period of negative social side effects will be unavoidable. Our analysis indicates strongly that the competitive strength of the healthy part of industry will make for a speedy response on the supply side and a quite brief period of intermediate distress. Critical elements of the policy package would be:

- A curb on public sector growth to restore public fiscal balance. This will lead to a temporary increase in open unemployment.
- A return of labor market mobility policies from the 50s and 60s to achieve an appropriate supply of skilled labor to growth industries. This requires that a significantly larger after tax and transfers wage and salary dispersion is allowed to develop.
- Subsidies to crisis firms have to be more or less completely removed during the ongoing business upswing, never to return again in the following slump. Much of the installed capacity in these industries will then be scrapped – but not all – and labor will have to find more useful employments elsewhere. This last measure is probably the critical one for a return of the Swedish economy to a healthy growth path.

NOTES

- 1 Eliasson, Carlsson, Ysander et al. (1979), and Carlsson et al. (1979).
- 2 See Eliasson-Bergholm-Jagrén-Horwitz (1984).
- 3 Eliasson, Carlsson Ysander et al. (1979) and Eliasson, (1981).
- 4 Figure 10 also illustrates the hazards involved in forecasting economic development in the 70s on the basis of relationships estimated during the growth era in the 60s. This observation carries over to forecasting and policy-making in the 80s.

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B SPECIAL STUDIES

THE LARGEST NORDIC MANUFACTURING COMPANIES

by Lars Oxelheim, IUI

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1 INTRODUCTION

Today industry in most countries finds itself in the midst of a rapid process of structural change. New competitors have emerged and demand for many existing products has declined. To survive – integration and diversification have evolved as key strategies. Moreover, turbulence in the international capital and foreign exchange markets since the middle 70s has increased uncertainty associated with business and finance.¹ Companies based in small open, often regulated, economies like those in the Nordic countries might be extra sensitive to this new risk. The way of handling the situation, at the company level, might cause structural changes expressed in the degree of internationalization and concentration at an aggregate level. One effect of the increased uncertainty may be a tendency to take advantage of economies of scale in the banking and financial dimensions. Firms tend to grow larger as financial organizations to reduce their exposure.² This is one reason for us to be specially interested in the population of large firms in the Nordic countries. It is a necessary background for evaluating their efforts to cope with the new business environment.

2 DEFINITIONS AND DATA PROBLEMS

To be classified as manufacturing companies in this study, more than 50 per cent of revenues has to originate from manufacturing. Furthermore, for practical data gathering reasons we require that all companies investigated are listed on the local stock markets. What this means in terms of limiting our analysis will be discussed in Section 4.

The main size variable will be value added in nominal as well as in relative figures. For the multinational group, this variable is transformed to reflect the importance of the company relative to domestic value added in manufacturing. Some of the companies studied report value added, others do not. There are also different definitions in use. In order to facilitate comparisons the value added is defined as the sum of the operating result (before depreciation), wages, salaries, social costs and other remunerations paid to the employees, and to the board of the company. Still, serious problems in calculating the value added remain, due to the accounting situation in the Nordic countries. Finnish companies, for example, made up consolidated accounts for the first time in 1982. Summing up the data problems, crucial data from 34 out of 40 companies have had to be obtained by direct contact with the companies.

The choice of 1976, as the point in time from which comparisons will be made, is based on economic-political as well as practical reasons. 1976 can be seen as a relevant starting point for a period characterized by several structural changes in basic conditions at the macro economic level; for instance changes in the pattern of real rates of interests, the pattern of the distribution of current account surpluses and deficits between OPEC and the rest of the world, the pattern of budget deficits, the pattern of exchange rates and

so on. In one way or another these changes originated in the first oil crisis in 1973, and were beginning to make themselves felt around 1976.

3 THE LARGEST NORDIC MANUFACTURING COMPANIES – DISTRIBUTIONS OF SIZE AND ACTIVITY

The ten largest manufacturing groups, by value added in 1982, are ranked and listed in Tables 1–4 together with an ISIC-classification³ of their economic activities. The ranking lists will also provide figures for 1976. As already stated, lack of data has confined our sample to companies listed on the stock markets. In some cases the selection is even narrower, due to lack of sales figures etc.

All companies on the lists are groups with a substantial part of their activities abroad. In discussing the degree of internationalization and concentration, one important question concerns how much of total value added that is actually a contribution to the Gross Domestic Product of the country of the parent company.

Total value added has been split⁴ into a domestic and a foreign part by the relative number of employees in the country of the parent company. This is of course a rough estimate, but it should be satisfactory to illustrate the importance of the top ten groups for local GDP. The large size of total wage costs for employees compared to gross profits supports this way of estimating the size of the value added contribution to local GDP. Finally, caution is called for in interpreting the real growth figures presented below, due to the potential lack of consistency in the consolidated, unofficial figures used in the calculations.

By these measures value added in domestic operations of the ten largest companies accounts for 14, 23, 22 and 33 per cent of value added in manufacturing in Denmark, Finland, Norway and Sweden, respectively. If we look at total domestic and foreign value added the corresponding coverages are 17, 28, 31 and 62 per cent, respectively. Total value added of the 10 Swedish companies is fifty per cent larger than the entire Norwegian manufacturing sector, thirty per cent larger than the entire Danish manufacturing sector and slightly larger than the entire Finnish manufacturing sector.

3.1 Danish Manufacturing Companies

Total value added of the ten largest Danish manufacturing companies are listed in Table 1. Their total value added corresponds to about 17 per cent of the manufacturing part of the Danish GDP in 1982, but this figure is considerably smaller than it is in Sweden. In 1976 the corresponding figure was 13 per cent. The top five group of 1982 accounted for slightly more than 13 per cent in 1982 and 9 per cent in 1976.

Lack of data or not being listed on the stock market explains why some very large Danish companies or groups, such as the A.P. Møller Group (with the Lindø-shipyard), Danfoss, Grundfos, Lego and the Lauritsen Group have not been included in this study. In Section 4 we discuss briefly how this affects our ranking. The by far largest company in Denmark, all categories, is Det Østasiatiske Kompagni. In 1982 this company, a trading company by the definitions used here, was almost twice as large as the largest Danish manufacturing company⁵ by total sales.

The domestic part of value added from the ten Danish manufacturing companies is displayed in Table 1, column 3. Relative sizes are exhibited in column 6 in the same table. The top ten group accounts for slightly less than 14 per cent of the manufacturing part of Danish GDP in 1982. In 1976 the contribution was almost 11 per cent. The top five group of 1982 gave a contribution of slightly less than 11 per cent in 1982, while the contribution from that group was slightly less than 8 per cent in 1976.

The main product categories in the top ten group are food processing and manufacturing based on chemicals. A third major product group is products based on minerals (except metal). The first mentioned product group (with De Forenede Bryggerier and De Danske Sukkerfabrikker) contributed 5.2 per cent of the Danish manufacturing value added in 1982. The companies based on chemicals (Superfos, Novo Industrier, Jens Willadsens Fabriker and Sadolin & Holmblad) 3.5 per cent. The contribution from the large companies based on minerals was about the same size (F.L. Smith & Co. and its associate, the Aalborg-Portland Group).

Real growth in value added of the top ten companies is displayed in column 5, Table 1. Measured by real growth in total value added, De Danske Sukkerfabrikker, Novo Industrier and Store Nordiske Telegrafsekskab exhibit the highest real growth rate. Growth in Novo Industrier contrasts with weak or negative figures from the other chemical firms on the list. The same pattern can also be recognized in profitability figures, where Novo Industrier is at the top of a list of Danish industrial companies. A plausible explanation is perhaps the high share of biochemicals in Novo. The group has increased its number of employees with almost 70 per cent from 1976 to 1982. An even larger increase can be noted for Store Nordiske Telegrafsekskab, which more than doubled its number of employees during the period.

The real growth in domestic value added exhibits the same pattern as for total value added. Five of the top ten companies are showing a negative real growth for the period 1976 to 1982. This is probably an indication of an ongoing structural change according to main industrial activities. Like the situation in Sweden, electronics, machinery and biochemicals are product groups with increasing shares, while heavy chemicals is going the other way. The negative real growth for five companies in the top ten group should be compared with an increase of ten per cent in real Danish manufacturing value added. However, as a group, the top ten companies are exhibiting a real growth of 17 per cent, as a result of the strong growth in the three companies previously mentioned. Finally, the concentration tendencies are not as obvious as, for instance, in Sweden. There is no

1 Total value added Rank 1982	2 Group	3 Value added in MDKK, 1982 Current prices		4 Value added in Denmark Rank 1982 (Rank 1976 within top group 1982)	5 Real growth ^a value added % 1976-82		6 Value added contribution to manufacturing part of the Danish GDP %		7 ISIC	8 Main products branches
		Total;	of which in Denmark		total	in Denmark	1982	1976		
1.	De Forenede Bryggerier ^b	2 828	2 076	2. (1.)	- 10	- 16	2.7	3.1	313, 362	Food processing, glass, construction
2.	F.L. Smidt & Co.	2 631	2 157	1. (2.)	40	40	2.8	1.9	500, 610 382	Bricks, cement, machinery
3.	De Danske Sukkerfabriker ^c	2 053	1 950	3. (4.)	109	103	2.5	1.2	311, 382	Food processing, machinery
4.	Novo Industrier	1 443	1 154	4. (7.)	103	96	1.5	0.7	351, 385	Chemicals, metal products
5.	Superfos	1 215	1 057	5. (3.)	3	3	1.4	1.3	311, 351 352, 382	Food processing, chemicals, machinery
6.	Store Nordiske Telegrafsekskab	993	806	6. (8.)	101	86	1.0	0.5	383	Electronics
7.	Nordiske Kabel & Traadfabriker	602	572	8. (5.)	- 35	- 36	0.7	1.1	356, 371 381	Iron, steel, metal products, chemicals
8.	Aalborg-Portland ^d	581	581	7. (6.)	- 24	- 24	0.7	1.0	369	Bricks, cement
9.	Jens Villadsens Fabriker	552	145	10. (10.)	- 15	- 15	0.2	0.2	356, 500	Chemicals, construction, building material
10.	Sadolin & Holmblad	404	283	9. (9.)	- 23	- 23	0.4	0.5	352	Chemicals
Total for the top ten group		13 302	10 819		18	17	13.9	11.7		
The total contribution to Danish GDP from the manufacturing industries in Denmark. (Current prices.)			78 100 ^e				100.0	100.0		
Real growth in total domestic manufacturing value added in Denmark						10				

^a Deflated with indices for wholesale prices

^b 1976/77

^c 1976/77-1981/82

^d Associated in F.L. Smidt & Co. Group

^e Preliminary figures. Manufacturing companies with more than five employees

outstanding, fast growing contributor. The biggest contributor in 1976 was De Forenede Bryggerier, but that group is showing a negative real growth for the period up to 1982. The other food processing company at the top ten list, De Danske Sukkerfabrikker, is the fastest growing group on the list. However, it did start from a very low nominal contribution in 1976.

3.2 Finnish Manufacturing Companies

Finnish manufacturing groups with the largest total value added are listed and ranked in Table 2. Together these top ten companies had a value added in 1982 that corresponded to almost 28 per cent of the manufacturing value added in Finland. In 1976 the figure was 22 per cent. The figures for the top five group of 1982 were these years 18 and 14 per cent, respectively.

Column 3, Table 2, exhibits the contribution from the top ten companies on the above mentioned list to the domestic part of value added. Relative sizes are displayed in column 6 in the same table. In 1982 the top ten group accounted for more than 23 per cent of the domestic value added from Finnish manufacturing companies. In 1976 the contribution was slightly less than 20 per cent. The contribution from the top five group was more than 16 per cent in 1982 and slightly less than 14 per cent in 1976. On both occasions, the members of the group were the same.

Only three main branches of the ISIC-classification are represented in the top ten group. Three groups (Wärtsilä, Kone and Tampella) are built around machinery, metal products and electronics. Wärtsilä includes a ship-yard and has been making profits by building ice-breakers despite the bad times for the ship building sector. The remaining seven groups are all working with products based on wood like pulp, paper and paper products. About 18 per cent of the domestic manufacturing value added in 1982 was generated by this last-mentioned group of companies. Except for Rauma Repola, they have all increased the relative size of their contribution to GDP since 1976. One hypothesis is that the industry based on paper has been forced to increase the manufacturing content of its product value due to the price increases on wood. A global excess capacity exists today which also accelerates this internal structural change. In a listing of the 25 biggest losers⁶ – all categories of Nordic companies – six companies with products based on wood will be found. Four of these companies are Finnish. In 1982 Enso-Gutzeit had rank 4 on such a list, and on a list for companies listed on the stock markets it ranks first.

The real growth in value added is exhibited in column 5, Table 2. There are no companies with negative real value added growth in the top ten group. The need for integration, to improve the competitive power, appears to be the reason for at least the product group based on wood. The real growth in total value added for the top ten group was 32 per cent from 1976 to 1982. The real growth in the domestic value added contribution from that group was of almost the same size, while Finnish manufacturing value added showed a real growth of less than ten per cent.

1 Total value added Rank 1982	2 Group	3 Value added in MFIM, 1982 Current prices		4 Value added in Finland Rank 1982 (Rank 1976 within top group 1982)	5 Real growth ^a value added % 1976-82		6 Value added contribution to manufacturing part of the Finnish GDP %		7 ISIC	8 Main products branches
		Total;	of which in Finland		total	in Finland	1982	1976		
1.	Nokia	2 703	2 216	1. (2.)	65	41	4.0	3.1	341, 355 383, 121	Paper, paper products, rubber, electronics
2.	Enso-Gutzeit	2 061	1 855	2. (3.)	36	36	3.3	2.7	331, 341 351, 352 121	Wood, wood products, paper, chemicals
3.	Rauma Repola	1 843	1 788	3. (1.)	2	- 1	3.2	3.5	331, 341 381, 121	Wood, wood products, paper, metal products
4.	Kymi Kymmene	1 801	1 639	4. (5.)	51	71	2.9	1.9	341, 351 371, 381 121	Paper, iron, steel, metal products, electronics
5.	Wärtsilä	1 800	1 620	5. (4.)	46	32	2.9	2.4	361, 362 371, 383 384	Pottery, glass, iron, steel, electronics, transport equipment
6.	Kone	1 563	547	10. (10.)	52	56	1.0	0.7	381, 382 321, 383	Metal products, machinery, electronics, textiles
7.	Tampella	982	894	6. (6.)	7	4	1.6	1.7	382, 341 381, 321 356	Machinery, paper, metal products, textiles
8.	Yhtyneet Paperitehtaat	876	832	8. (9.)	51	46	1.5	1.1	341, 382 351, 121 712	Pulp and paper, chemicals, machinery
9.	G.A. Serlachius	842	775	9. (8.)	24	15	1.4	1.3	341, 381 382, 356 121	Pulp and paper products, machinery, plastics
10.	Metsäliiton Teollisuus	839	839	7. (7.)	23	23	1.5	1.3	341	Paper and paper products
Total for the top ten group		15 310	13 005		32	30	23.3	19.7		
The total contribution to Finnish GDP from the manufacturing industries in Finland. (Current prices.)			55 977 ^b				100.0	100.0		
Real growth in total domestic manufacturing value added in Finland						9.6				

^a Deflated with indices for wholesale prices

^b Preliminary figures

Concentration tendencies appear to be rather strong in Finland, while tendencies toward an increasing degree of internationalization are hard to find.

The largest manufacturing group in terms of total sales is Neste. Since it is not on the stock market it is excluded from the top ten list presented above. On a value added ranking in Finland it would have been sixth in 1982. The Nokia Group at the top of the value added list is ranked as number two according to total sales in manufacturing companies. Within the group of all categories of companies Nokia was ranked as number six in 1982. With Neste at the top, there were four wholesalers in between with higher total sales.

3.3 Norwegian Manufacturing Companies

The ten Norwegian manufacturing companies with the largest total value added are ranked in this capacity in Table 3. Value added of the top ten group makes up about 31 per cent of total manufacturing value added in Norwegian GDP. This is less than in Sweden but more than in Denmark and Finland. In 1976 the figure was 18 per cent. The figures for the top five group of 1982 were 25 and 15 per cent, respectively.

The domestic part of value added in Norwegian manufacturing companies is displayed in Table 3, column 3. Relative sizes are exhibited in column 6 in the same table. It can be seen that the top ten group accounts for more than 22 per cent of the manufacturing part of the Norwegian GDP in 1982. In 1976 the contribution was about 16 per cent. The top five group of 1982 contributed 17 per cent in 1982, while the contribution in 1976 was almost 13 per cent from that group.

Almost all branches are represented at the top ten list for Norway. The biggest contributor, Norsk Hydro, has petroleum and other chemicals as their main products. Within this product group are also Norgas and Dyno Industrier. Another important product group is machinery and metal products (Kvaerner Industrier). In 1982, this group contributed almost three and a half per cent of manufacturing value added. Iron, steel and nonferrous metals (Elkem and Orkla Industrier) contributed almost as much. Food processing (Borregaard), Electronics (Elektrisk Bureau) and saw-mills, pulp and paper (the Norske Skogsindustrier Group) are other product groups represented at the top ten list with contributions around one to two per cent in 1982.

Column 5 in Table 3 exhibits the real growth in value added 1976 to 1982. On total value added, only one negative figure is found. This is for Borregaard and is explained by the sale of a foreign subsidiary. Norsk Hydro and Norgas, both operating mainly in chemicals, including petroleum products for Norsk Hydro, show the highest real growth rate. Norsk Hydro increased the number of employees with about 75 per cent, an increase that mainly originated in foreign subsidiaries. The same pattern is applicable to Norgas, with an increase of about 120 per cent. Orkla Industrier exhibits the fastest real

1 Total value added Rank 1982	2 Group	3 Value added in MNOK, 1982 Current prices		4 Value added in Norway Rank 1982 (Rank 1976 within top group 1982)	5 Real growth ^a value added % 1976-82		6 Value added contribution to manufacturing part of the Norwegian GDP %		7 ISIC	8 Main products branches
		Total;	of which in Norway		total	in Norway	1982	1976		
1.	Norsk Hydro	7 087	3 756	1. (1.)	136	49	7.2	4.5	3512, 3513 3530, 3720 2200	Petroleum products, chemicals, non-ferrous metals
2.	Kvaerner Industrier	1 831	1 794	2. (3.)	49	47	3.4	2.2	3819, 3821 3824, 3841 6122	Machinery, metal products
3.	Elkem	1 659	1 261	3. (2.)	2	-15	2.1	2.7	3710, 3720 3900, 3215 3811	Iron, steel, ferroalloy, non-ferrous metals, metal products
4.	Norcem	1 161	987	5. (5.)	47	27	1.9	1.4	3411, 3560 3690, 2900	Chemicals, bricks, cement
5.	Borregaard	1 085	1 074	4. (4.)	-21	- 2	2.1	2.0	3115, 3122 3121, 3411 3412	Food processing, pulp and paper
6.	Elektrisk Bureau Group	884	787	6. (6.)	56	40	1.5	1.0	3832	Electronics
7.	Norgas	653	359	9. (9.)	128	26	0.7	0.5	3511, 3522 3811	Chemicals, metal products
8.	Norske Skogsindustrier	635	629	7. (7.)	24	24	1.2	0.9	3311, 3411 3412, 6122	Saw mills, pulp and paper
9.	Dyno Industrier	563	512	8. (8.)	18	10	1.0	0.8	3529, 3560 6123, 6131 6270	Chemicals (trading)
10.	Orkla Industrier	402	358	10. (10.)	625	546	0.7	0.1	3710, 3720 2309, 5021	Iron, steel, non-ferrous metals
Total for the top ten group		15 960	11 517		61	28	22.1	16.1		
The total contribution to Norwegian GDP from the manufacturing industries in Norway. (Current prices.)			52 276 ^b				100.0	100.0		
Real growth in total domestic manufacturing value added in Denmark						- 5.4				

^a Deflated with indices for wholesale prices

^b Preliminary figures

growth of more than 600 per cent. However, this was from a very low nominal level so their value in 1982 only corresponds to position ten on the list.

Looking at real growth in domestic value added, the highest negative figure is noted for Elkem – minus 15 per cent. For the period the group has carried through a slight reduction of the number of employees in Norway and expanded abroad. Elkem which is now the leading company in the world in ferro-alloys is bringing an important contribution to the Norwegian manufacturing value added by exporting more than 90 per cent of its total sales out of Norway. This is also the case for Norsk Hydro (84 per cent). Norsk Hydro is growing faster abroad than at home and has increased the percentage of employees abroad from 16 per cent 1976 to 47 per cent in 1982. In 1982, Elkem belonged to the big losers⁷ in the Nordic countries, and on a ranking of all categories of companies it was ranked 11 in this capacity, while Norsk Hydro was ranked 10 on a correspondent list of companies with the biggest profits⁷ in 1982. Looking at a ranking of the 25 biggest losers in the Nordic countries, three more Norwegian iron, non-ferrous metals and steel companies⁸ are found. These companies are state-owned.

The real growth in domestic value added for the top ten group was 28 per cent in 1982, which should be compared to a decline since 1976 of more than five per cent in the total contribution to Norwegian GDP from the manufacturing industries in Norway.

Norway has a heavy and rapidly expanding top five group. The tendency towards concentration is obvious from the table and as obvious seems a tendency towards internationalization to be. Only two companies out of ten did not increase the percentage of employees abroad in combination with an increase in the total number of employees within the group.

3.4 Swedish Manufacturing Companies

In 1982, the top ten group of Swedish companies had a total value added that corresponded to 62 per cent of manufacturing value added in Sweden. In 1976, the figure was 40 per cent. The figures for the top five group were 43 and 27 per cent respectively.

From Table 4, column 6, it can be seen that in 1982 the top ten group contributed almost 33 per cent of the domestic part of value added in Swedish manufacturing companies. In 1976, the contribution was only 22 per cent. The top five contributors in Sweden (Volvo, ASEA, Saab-Scania, Ericsson, Electrolux) contributed more than 25 per cent in 1982 and the same companies accounted for slightly more than 16 per cent in 1976. Thus, this top five group accounts for almost the whole increase in the contribution from the top ten group to Swedish GDP.

Looking at a ranking according to the domestic value added contribution some other companies must be considered. Thus, Svenska Cellulosa (SCA) and Bofors replace

Table 4 Ten largest Swedish manufacturing companies according to value added in 1982

1 Total value added Rank 1982 1976	2 Group	3 Value added in MSEK, 1982 Current prices		4 Value added in Sweden Rank 1982 (Rank 1976 within top group 1982)	5 Real growth ^a value added % 1976-82		6 Value added contribution to manufacturing part of the Swedish GDP %		7 ISIC	8 Main products branches
		Total;	of which in Sweden		total	in Sweden	1982	1976		
1. (1.)	Volvo	13 653	10 239	1. (1.)	42	48	8.2	4.7	3840	Transport equipment
2. (5.)	Electrolux	12 187	4 485	5. (7.)	96	106	3.6	1.6	3810, 3820 3710, 3720	Machinery, iron, steel
3. (2.)	Ericsson	10 751	4 623	4. (4.)	36	44	3.7	2.3	3830	Electronics
4. (4.)	ASEA	9 772	6 352	2. (2.)	47	19	5.1	3.9	3830	Electronics
5. (3.)	SKF	7 780	1 735	10. (12.)	6	14	1.4	1.1	3820, 2301 3710, 3810	Machinery, metal products
6. (6.)	Saab-Scania	6 837	5 606	3. (3.)	16	10	4.5	3.5	3840, 3850	Transport equipment
7. (8.)	Sandvik	4 896	2 007	8. (8.)	24	3	1.6	1.4	3710, 3810	Metal products iron, steel
8. (9.)	Skånska Cementgjuteriet	4 312	3 622	6. (5.)	27	35	2.9	1.8	3690, 5012	Construction, bricks, cement
9. (13.)	Alfa Laval	3 510	1 369	12. (13.)	28	31	1.1	0.7	3810, 3820	Machinery, metal products
10. (12.)	Atlas Copco	3 256	951	15. (14.)	15	- 1	0.8	0.7	3820	Machinery
Total for the top ten group		76 954	40 989		29	26	32.9	21.7		
The total contribution to Swedish GDP from the manufacturing industries in Sweden. (Current prices.)			124 976				100.0	100.0		
Real growth in total domestic manufacturing value added in Sweden						- 7.7				

^a Deflated with indices for producer prices within categories according to ISIC.

Atlas Copco and Alfa Laval from the top ten group according to total value added in 1982. With this scaling, the new top ten group accounts for 34 per cent of domestic manufacturing value added in 1982. In 1976, those companies contributed with 23 per cent. The list of 1976 was almost the same as this list of 1982. The only change was that Stora Kopparberg replaced SKF in 1976. With rank 12 that year, SKF was also behind Swedish Match in size.

Stora Kopparberg and Swedish Match were members of the top ten list measured by total value added in 1976. Like the circumstances for the list concerning domestic value added, these two companies – built up around saw-mills, paper and paper products – have been passed and replaced by companies within the machinery group. Without discussing causality, it should be noted that Swedish Match has reduced their number of employees with 27 per cent since 1976, which has strongly affected the value added. From a proportional point of view the reduction has been slightly larger in Sweden than abroad. The reduction from 1976 to 1982 (44 per cent) was even larger in Stora Kopparberg.⁹

The main products represented in the top ten group exhibit the following pattern. Transport equipment (Volvo and Saab-Scania) contributed almost 13 per cent to domestic manufacturing value added in 1982. Electronics (Ericsson and ASEA) in 1982 added another 9 per cent. Slightly less or 7 per cent was accounted for by the third major product category – machinery (Electrolux, SKF, Alfa Laval and Atlas Copco). To complete the list – the remaining product groups to be mentioned are building materials (Skånska Cementgjuteriet) and iron and steel and metal products (Sandvik).

Surprisingly, the forest, pulp and paper industries are no longer represented in the top ten ranking according to total value added. In 1976, the sector for wood products was represented by Stora Kopparberg and Swedish Match. In 1982, that sector had a representative next to the top ten list. Thus, Svenska Cellulosa was ranked 11, a position that the group defended from 1976.

Electrolux and ASEA show the largest real growth in value added. From 1976 to 1982, Electrolux almost doubled its total value added in real terms. With a real increase in total value added of 42 per cent, Volvo defended its leading position. The pattern for ASEA was almost the same.

In terms of real growth in domestic value added, Electrolux, Volvo and Ericsson displayed the highest figures. Ericsson has replaced ASEA among the fast growing companies mentioned above. As an intermediary explanation it should be noted that ASEA has increased the relative size of its number of employees outside Sweden from 20 to 35 per cent, while Ericsson has gone the other way and decreased the relative size of foreign employment, from 60 to 57 per cent.

Negative real growth figures for the period and according to total value added are not found in the top ten group. But just below that group such figures can be found for

companies previously mentioned. These companies are Svenska Cellulosa, Bofors, Swedish Match and Stora Kopparberg. A common trait is that their products are based on wood or chemicals. Negative figures in real growth in domestic value added are exhibited for the same groups but also for Aga, with a decrease of 17 per cent, and Atlas Copco, with only a slight decrease.

How much of the real growth in value added – both total and domestic – can be explained by expansion due to gains in competitiveness power or to mergers is difficult to estimate. A study of the increase in the number of employees – with an increase of 40 per cent in Electrolux and with 31 and 20 per cent for ASEA and Volvo, respectively – reveals that these companies¹⁰ have been the most expansive among the members in the top ten group, measured by that variable.

The main conclusion concerning the Swedish top ten companies is that companies based on wood and chemicals have suffered in their positions as important contributors to the manufacturing part of Swedish GDP. The top ten companies from 1982 have strengthened their positions since 1976 and increased their share of domestic manufacturing value added with 11 per cent. Looking at the five largest contributors it can be seen that these companies account for almost the whole increase in the manufacturing contribution from the top ten group. They exhibit a very high rate of real growth, while the total manufacturing contribution to Swedish GDP has decreased with 8 per cent in real terms from 1976 to 1982. Their major products are transport equipment and electronics. However, these products tend to have a decreasing importance within the top five companies, potentially as a result of ambitions of diversification and integration in the groups. Thus, the companies at the top exhibit a tendency to transform into conglomerates.¹¹

4 STRUCTURAL DIFFERENCES – A COMPARISON

In Table 5, the top ten companies in the Nordic countries have been grouped by main activities. We find that ISIC-group 38 (machinery, metal products and electronics) is represented with nine companies in Sweden. A similar activity concentration is seen for Finland with seven firms in ISIC-groups 33 and 34 (products based on wood) and with the remaining three in group 38. The top ten group in Denmark exhibits a more diverse pattern, but four out of ten are in ISIC-group 35 (chemicals). Even less pronounced is the manufacturing pattern in Norway. As in Denmark most companies are found in group 35, but except for ISIC-group 32 (textiles and apparels) and 39 (other kinds of manufacturing) the Norwegian top ten list has representatives in all activity groups.

Among the top ten groups, those in Sweden and Norway exhibit the largest real growth in domestic value added compared to the rest of the manufacturing industries – indicating a growing relative importance of these groups as GDP contributors. The real growth figures are put together in Table 6. It can be seen that the Finnish top ten group has had the highest real growth in domestic value added, but the gain in share is

Table 5 The top ten companies of 1982 separated into activity groups

Main activity (activity code-ISC)	Number of companies in			
	Denmark	Finland	Norway	Sweden
Food processing (31)	2		1	
Textiles & apparel (32)				
Saw mills, pulp and paper (33, 34)		7	1	
Chemicals (35)	4		3	
Goods from minerals (excl. metal) (36)	1		1	1
Iron, steel and nonferrous metals (37)			2	
Fabricated metal products, machinery and equipment (38)	3	3	2	9
Other kinds of manufacturing (39)				
Total	10	10	10	10

Table 6 Real percentage growth* in value added, 1976–82

Country	Real growth in total value added for top ten group	Real growth in domestic value added for top ten group	Real growth in value added in local manufacturing industries
Denmark	18	17	10
Finland	32	30	10
Norway	61	28	- 5
Sweden	29	26	- 8

* Calculated with reservations for potential deficiencies due to the lack of published corporate data to be used.

Table 7 Decrease in the share of value added as percentage of total sales, 1976–82

Country	Number of top ten companies with a decrease in the share of value added in total sales: Percentage change in ratios		
	> 10 %	0–10 %	< 0 %
Denmark	5	3	2
Finland	4	5	1
Norway	5	3	2
Sweden	6	2	2

reduced, due to a high real growth (almost 10 per cent) for the rest of Finnish manufacturing industries. The highest real growth in total value added is displayed for the Norwegian top ten group. This real growth is mainly explained by the immense real growth abroad in Norsk Hydro and Norgas during the period.

The highest relative contribution to domestic value added in total manufacturing is found in Sweden with the top ten group accounting for almost 33 per cent. The Finnish and Norwegian top ten groups have a contribution each about 23 per cent, while the Danish top ten group contributed 14 per cent in 1982.

Value added as a share of total sales seems to have diminished for the top ten groups in all Nordic countries (Iceland excl.). The decreases are exhibited in Table 7. Six to eight companies out of ten have diminished their share from 1976 to 1982. This systematic tendency could partly be explained by cyclical factors. In Sweden, however, the pattern is very pronounced. Volvo, for instance, has halved its share, while ASEA, Electrolux and Ericsson have reduced their relative share with 20–25 per cent. Finland exhibits the same pattern with decreases of between 25 to 30 per cent for Rauma Repola, Kymi Kymmene and for Tampella. For Sweden with almost the whole top ten group based on high technology products this observation is consistent with other facts, namely the decreasing share in total activities of production, the increasing importance of assembling production based on purchased components, and the increasing importance of trade and other service activities.¹²

The relative sizes – both within and between countries – in terms of total sales are illustrated in Table 8 for the top ten companies. The Swedish companies are found to be giants. Because of a few extremely large companies in some countries, both average total sales and median total sales are presented. In Sweden, for instance, Volvo because of its large trade volume, is pulling up the sales average to more than 23,000 MSEK in 1982. Only two companies, both Swedish, (Electrolux and ASEA) have a size comparable to that figure. The small difference between the median and the average total sales for the Finnish top ten group indicates the absence of such outliers in Finland.

As previously noted the pattern of concentration is most pronounced in Sweden, which is also indicated in a ranking of all Nordic companies according to their total sales in 1982. Figures from such a ranking are also exhibited in Table 8. Volvo is by far the largest group in the Nordic countries – twice as big as Electrolux, which is the second largest. Furthermore, in such a ranking, eight of the companies at the Swedish top ten list are represented among the 25 largest Nordic companies – all categories – in 1982. Among those 25, Norsk Hydro is the only representative from the top ten lists in the other Nordic countries.

The question to be raised here is, of course, which companies are excluded by the definitions used in this study. Differences among the Nordic countries according to the owner structure will potentially affect the representativity of the top ten companies presented as the main manufacturing value added contributors. Looking at a ranking of

the 200 biggest Nordic companies according to total sales provides some information about differences in ownership between the Nordic countries. Such a ranking indicates that the structure in Sweden and Finland in 1982 seems to be the same with almost 80 per cent of the companies privately owned. What remains is almost equally distributed between cooperatives, state-owned companies and subsidiaries of foreign groups. In Denmark, slightly more than half of the companies on such a list are privately owned, while almost 30 per cent are cooperatives. Denmark also has a relatively high percentage of foreign subsidiaries. In Norway, with around 70 per cent privately owned companies, there are few cooperatives, while – more than twice as many companies as in Sweden – are state-owned.

In what sense will these differences in ownership affect the result presented concerning the main domestic manufacturing value added contributors? In answering that question let us start with Denmark. As a trading company, the by far biggest Danish company according to total sales, Det Østasiatiske Kompagni, is excluded from this study. However, with more than 26,000 employees, which is almost twice the number of employees in the largest top ten manufacturing company it is of course an important value added contributor. Limiting the study to companies listed on the stock market has excluded some important manufacturing companies from the study. Among those excluded are, as already mentioned, Danfoss, Grundfos, Lego, the Lauritsen Group and the A.P. Møller Group.¹³ These would probably all have rewarded a rank among the top ten had it been possible to include them.

Table 8 Relative size of the top ten companies in 1982

		Denmark	Finland	Norway	Sweden
Average total sales in the top ten group	MSEK	3 000	5 200	4 600	23 300
Median total sales in the top ten group	MSEK	1 700	4 600	2 800	16 600
The highest and the lowest ranking – among all industrial companies in the country – for the top ten companies presented in the material	HIGHEST	4.	2.	1.	1.
	LOWEST	34.	22.	37.	26.
The highest and the lowest ranking – among all Nordic groups* – for the top ten companies presented in the material	HIGHEST	66.	35.	8.	1.
	LOWEST	309.	121.	270.	38.

* Banks and subsidiaries are excluded in this ranking according to total sales.

In terms of total sales there are, besides the Lauritzen Group at least two more manufacturing companies in front of the largest value added contributor. However, these (Dansk Esso and Dansk Shell, both subsidiaries of foreign groups) are relatively small value added contributors. Finally, some manufacturing cooperatives as, for instance, Mejeriselskabet Danmark and Tulip Slagterierne are candidates for ranks between five and ten.

Looking at a ranking list over all Finnish companies, such a list will have a state-owned manufacturing company (Neste) at the top followed by four wholesalers (Kesko, SOK, Hankkija-Yhtymä and OTK-ryhmä). Nokia is ranked 6 on that list. The companies in front of Nokia are small value added contributors. Neste, as a manufacturing company, would have been ranked 3 on the Finnish top ten list according to total value added in 1982. Valmet within machinery, Kemira within chemicals and Ahlström within forestry and wood products are qualified for positions at the end of the top ten list, but have been excluded as state-owned or, concerning Ahlström, as not listed on the stock market.

On a list over the largest Norwegian companies – all categories – there are some large companies that are excluded from this study, despite being manufacturing companies. These are oil companies, which are subsidiaries to foreign groups (Elf Aquitaine, Norske Shell, Norsk Agip, Norske Esso and Total Marine) or 100 per cent state-owned (Statoil). However, these groups are relatively small by value added standards and would in case of inclusion be candidates for positions at the end of the top ten list. More important as value added contributors are Årdal og Sunndal Verk (aluminium) and Kongsberg Våpenfabrikk within the machinery sector. These state-owned companies are contributors of a size corresponding to a rank in the middle of the top ten list of Norway.

Considering the Swedish top ten list according to total value added, there are no further candidates for a top position even if all types of companies are open for inclusion. The Axel Johnsen Group, the Statsföretag Group and Svenska Varv are contributors of a size qualifying for a position on the second half of the Swedish top ten list in 1982. These are manufacturing companies. Enlarging the scope to all kinds of companies there are three wholesalers, KF, ICA and SABA, which are candidates for the same positions.

Finally, some other significant features of the companies on the Nordic top ten lists are to be mentioned. A rating of the companies according to their return on total assets, in per cent in 1982, shows Novo at the Nordic top.

A ranking of the forty top ten companies according to total nominal profits – pre-tax income – exhibits three Swedish companies (Volvo, Skånska Cementgjuteriet and Saab-Scania) in front of Norsk Hydro. The Finnish top ten company with the highest total nominal profit in 1982 was Wärtsilä, which is ranked 10. The best Danish Group, Novo, is ranked 12.

A ranking according to the biggest loss – pre-tax income – in nominal terms gives the highest rank to Enso-Gutzeit, with another Finnish company as number three. Elkem is

ranked 2 on such a list. None of the Danish or Swedish top ten companies are showing a loss in 1982.

Electrolux was the biggest employer of the top ten companies in 1982 with more than 100,000 employees. Ranking our 40 top ten companies, the first non-Swedish representative, Nokia, is ranked 9. Norsk Hydro, the largest Norwegian employer, comes in on rank 10. The biggest Danish employer, De Forenede Bryggerier comes in as number 20.

A ranking list according to total export in per cent of total sales exhibits Elkem at the top, with more than 90 per cent on export. Second comes Norsk Hydro. Kymi Kymmene is displaying the highest percentage of the Finnish top ten companies with 74 per cent on export. Novo had in 1982 the highest percentage, 66 per cent, among the Danish companies. The Swedish companies exhibit relatively low figures, with the highest percentage, 42 per cent, for Sandvik.

Looking at the figures for the relative number of employees abroad provides an explanation why the exportation from the Swedish top ten companies exhibits so low figures. The median percentage of employees abroad was in 1982, 57 for the Swedish top ten companies, while it was 17, 11 and 10 per cent for the Danish, Norwegian and Finnish top ten groups, respectively. The activities (machinery, metal products and electronics) in the Swedish companies make it necessary to work close to the foreign market compared, for instance, to the main activities (manufacturing based on wood) for the Finnish companies.

NOTES

- 1 See Eliasson-Sharefkin-Ysander 1983, *"Policy Making in a Disorderly World Economy"*, IUI Conference Volume 1983:1.
- 2 See Eliasson G, 1983, *Det moderna företaget – styrsystem i stora företagsorganisationer*, Working Paper, (forthcoming IUI publication).
- 3 International Standard Industrial Classification of All Economic Activities.
- 4 The results are quite robust concerning the choice of the relative size of the number of employees in the country of the parent company compared to the choice of the relative size of the total amount paid to employees in the same country in the form of wages, salaries and other remunerations. The first mentioned alternative is used because of the difficulties of separating social costs into a foreign and a local part, due to deficiencies in internal company financial reports.
- 5 The AP Möller Group is not included in this comparison, due to the fact that this group does not provide total sales figures. Sales is of course not a good measure of size, especially if we compare manufacturing and trading companies.
- 6 Pre-tax income. *Veckans affärer* nr 27, augusti 1983.
- 7 Pre-tax income.
- 8 Norsk Jernverk, Sydvaranger and the ÅSV Group.
- 9 The mining and steel section was transferred to SSAB January 1, 1978.
- 10 During the period under investigation they have all made major mergers and have incorporated large firms. Volvo has incorporated the Beijer Group, ASEA has incorporated the Fläkt Group and Electrolux has incorporated the Gränges Group.
- 11 Due to this fact the "pure" contribution from manufacturing will be overestimated. In Volvo, for instance, the trading part was high in 1982. The energy sector and other trading parts did account for almost 50 per cent of total sales that year.
Another potential source of error concerns the effect of price changes on inventories. These changes can affect the time distribution of value added. In an investigation (See: Statistiska Meddelanden, SERIE N 1982:2.5 appendix, pp. 51–52) for 1979 and 1980 the Swedish Central Bureau of Statistics estimated these effects to correspond to an increase of the contribution to GNP from the manufacturing industries of about 5 per cent those years.
- 12 See Eliasson, G., 1983, *Det moderna företaget – styrsystem i stora företagsorganisationer*. IUI Working Paper (forthcoming).
- 13 In 1982 this group – with several hundred companies with more than 20 000 employees and with shipping and oil prospectation as main activities – had a roughly estimated value added in Denmark equivalent to 4–5 per cent of the Danish manufacturing value added.

NORDIC ENGINEERING INDUSTRIES AND THE NORWEGIAN OFFSHORE MARKET

– Production Capacity, Demand Prospects and Nordic Economic Co-operation

by Ole Berrefjord and Per Heum, IØI.

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NORDIC ENGINEERING INDUSTRIES AND THE NORWEGIAN OFFSHORE MARKET

– Production Capacity, Demand Prospects and Nordic Economic Co-operation *

1 TRADE POLICY ON THE INTRA-NORDIC SCENE

The general question raised in this article concerns the relationships between:

- a. business firm adjustments within a national industry,
- b. the consequent effects on aggregate production capacity,
- c. the character of foreign competition in the markets towards which this production is directed, and
- d. the development of corresponding industrial policies at the national level.

Hence, the study focuses on the formulation of industrial policies in the light of the market situation that firms face.

To be more specific, we want to investigate how different foreign trade policies at the national level arise, using the Norwegian offshore market for engineering products as a case. By way of theoretical arguments we attempt to predict which industrial policy that is most likely to be pursued by the Norwegian government on the intra Nordic scene: Will the trade policy be liberalistic, or is a protectionistic strategy more likely?

The question discussed thus relates to the co-operative work amongst the Nordic countries to increase the efficiency and the development of Nordic industries. In addition to geographical and cultural proximity, the political relationships between the Nordic countries are relatively strong. This co-operation includes economic issues, as the question of industrial co-operation. For instance, a working plan was agreed upon in 1982 between the Nordic Ministers of Manufacturing Industries. According to the Norwegian government (St.meld. nr. 30 (1982–83), p. 9), this working plan

“...primarily aims at strengthening the international competitiveness of the Nordic manufacturing industries. Among other things one shall ease the possibilities of industrial co-operation between the Nordic countries in order to develop the Nordic area as a home market for the Nordic manufacturing industries”. (Our translation)

The Norwegian government holds a central position in the Norwegian offshore market. Thus, Norwegian foreign trade policies in this field is related to the question of whether the Norwegian government will use its control of this particular market to promote the idea of a “Nordic home market”. Or to put it differently: What is the realism of the general intentions quoted above concerning the policies of this market?

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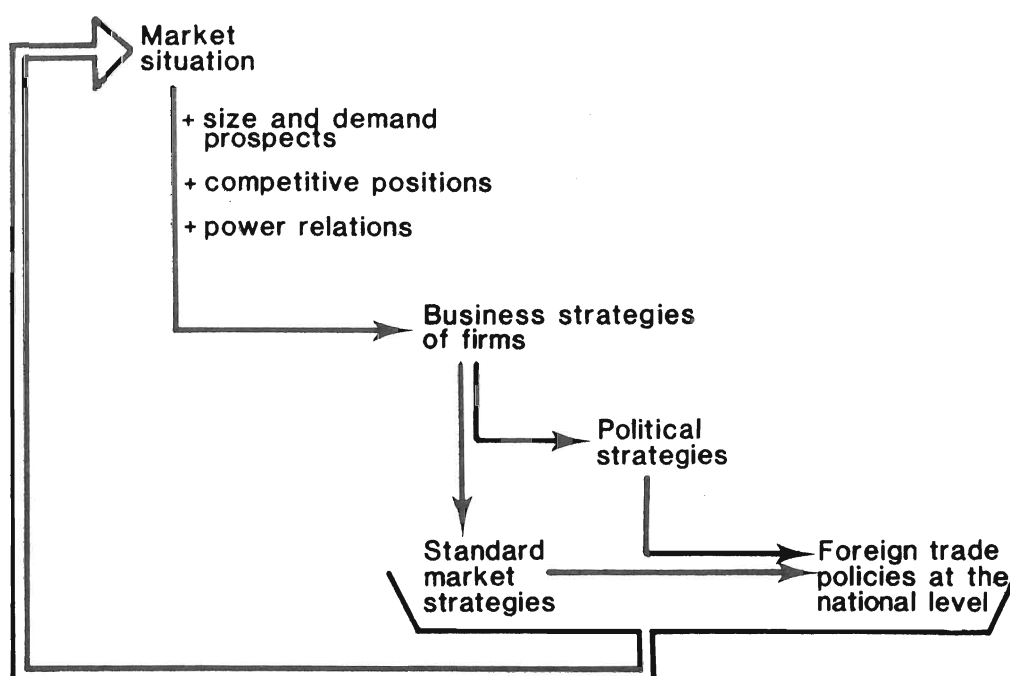
2 A MODEL FOR POLICY FORMULATION

Business strategies governing firm adjustments aim at reaching the profit goals of the companies. Briefly we assume that firms adjust according to this in the context set by the market situation they experience, a situation which is characterized by the size and growth prospects of different markets and by competitive positions of the firm. One important factor is how transactions in markets come about, reflecting the central power relations within the market.

Two kinds of strategies are considered. First, standard market strategies, including different efforts like changes of product scope, product development, or campaigns directed towards the customers in the market. Second, political strategies directed towards public agencies which wholly or partly control factors important for the market actors. Such political strategies, for instance lobbying, may either be acted upon directly by the companies or indirectly through their trade associations (NOU 1982:3, chapter 5).

Our point is that no matter how the business strategies of companies are pursued, they will, directly or indirectly, affect the atmosphere within which the industrial policy of the nation in question, including its foreign trade policy, is formulated and decided. Here we focus on the effects of business strategies alone, leaving the influence on policy formulation from other factors out of the model. Thus, the line of thought guiding our discussion may be illustrated as in Figure 1.

Figure 1 Business strategies and industrial policy formulation



The range of policies that may be decided upon, is very wide. For the purpose of this article we have chosen to distinguish between three:

1. A liberalistic or free trade strategy, being the one that is most solemnly praised at main occasions. It is also the guiding idea of the multilateral trade agreements of the post war period.
2. A bilateral strategy, establishing mutual rights and duties for business firms of two countries. Such strategies occur at different occasions and in different forms. The proposed Volvo agreement, involving Norway and Sweden, which was turned down by the Volvo stockholders, represents one example. The recent Norwegian/Swedish military procurement contract which includes clauses of repurchasing is another.
3. A protectionistic strategy, establishing preferences of different kinds for domestic producers. As tariff barriers to foreign trade are almost nonexistent in intra Nordic trade, non tariff barriers of different types may become prevalent, and consequently most relevant for this study.

The focus of this exercise is to argue which of these policies is most likely to be chosen with respect to the Norwegian offshore market, given the current economic situation and the business strategies adopted by companies. It should be pointed out, however, that the market situation changes and thus the context within which companies and governments make their adjustments. Thus, according to our line of thought, policies are not chosen once and forever. They are part of an ongoing process of adaptation (Berrefjord, 1983).

The issue raised concerns the question of Nordic economic co-operation in general, even though we address it by only looking at the engineering industries of Finland, Norway, and Sweden. These are, however, the three Nordic countries whose industrial composition is most relevant for supplying the market we study. Thus, the empirical base should be sufficient to catch the processes of importance to understand the Nordic question lined out.

To summarize, the central elements in this article is to describe the market situation, and the business strategies adopted by the companies, and to analyze how strategies match current and future realities. Thus, we shall discuss each of these elements and how they relate to each other in some more detail.

3 THE NORWEGIAN OFFSHORE MARKET

3.1 The Demand of Offshore Goods and Services

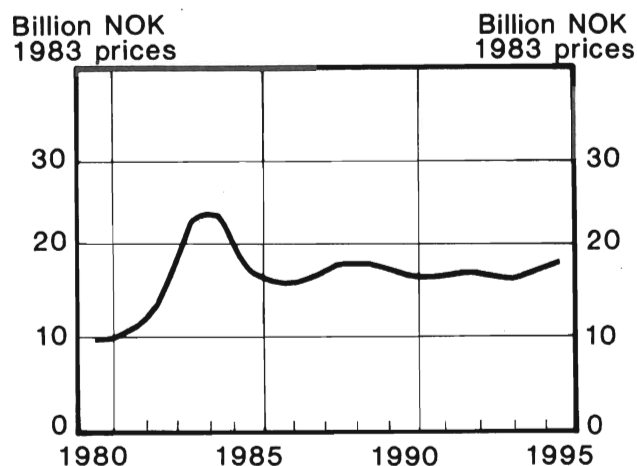
The size of the offshore market in Norway depends on the level of activity on the Norwegian continental shelf. Goods and services are demanded in connection with the

exploration for oil and gas, the development of fields declared commercially exploitable, and the production of oil and gas. Of these, most goods and services are needed in relation to the investments necessary to develop a field of petroleum (including the transportation equipment, constructions on-shore, and the like), and in connection with the production itself.

Since a substantial part of the goods and services needed to produce oil and gas are supplied within the oil companies, it is the development of the petroleum fields that generates the largest demand for products from other business firms.¹ This demand is mostly directed towards goods and services produced within the metal and engineering industry. We will therefore concentrate on this part of the offshore market.

The investments associated with the development of oil and gas fields amounts at present to some 20 billion NOK annually (close to 3 billion USD). This demand rose considerably in the early 70s, reached a peak in 1976, and then fell until 1980 (St.meld. nr. 40, 1982–83) from which it once again has risen tremendously (see Figure 2). Many companies were involved. For instance, to build and equip one platform (Statfjord B) 200

Figure 2 Planned Investments on the Norwegian Continental Shelf, 1980–95
Billion NOK in 1983 prices



Source: Statoils Perspektivanalyse, 1983, Figures 5.3 and 7.2

orders averaging 6 million NOK were placed, involving altogether some 2,000 firms as subcontractors (de Presno, 1982).

The size of the future demand depends largely on the level of production chosen by the Norwegian authorities. If the exploitation of oil and gas is to be kept constant, the demand associated with the phase of development will fluctuate quite a bit. However, the trend of Norwegian policies seems to be to keep the investments constant, and rather let the annual production vary.² No matter which of these options that are chosen, there is no reason to believe that this part of the offshore market will grow as in the previous years. On the contrary, in the near future, i.e. up to 1987, the annual average is not likely to exceed its present level to any significant degree.

3.2 Nordic Suppliers of Offshore Deliveries

The growth that has taken place in this market, has attracted domestic as well as foreign engineering firms, especially since other European market opportunities have been and still are, gloomy. Besides, growth prospects globally for offshore deliveries are reckoned to be good. This has motivated engineering firms to go for this market.

The North Sea furthermore represents a tough environment for offshore oil activities. Therefore suppliers of goods and services have found it important to demonstrate the quality of their products in this area (see also Cook and Suttey, 1983). This implies that the Norwegian offshore market in many respects will gain particular attention from engineering firms trying to get a favorable position in the international business of offshore deliveries.

As indicated above, the Nordic firms most relevant for this market are the companies engaged in the metal and engineering business, particularly the shipyards, as the market for new ships has been reduced. The characteristics of these companies differ quite a lot between the three countries: Finland, Norway, and Sweden, both in terms of size and with respect to international orientation (see the Special study 1 by Oxelheim in this volume).

Swedish metal and engineering companies are on the average larger than the Finnish and the Norwegian firms, and their operations are significantly more directed towards international markets, featuring substantial exports and production in foreign countries. This especially holds for corporations like ASEA, Ericsson, and SKF. Among the shipyards Svenska Varv is larger than any of its Nordic competitors.

Also the Finnish metal and engineering companies like Wärtsilä, Rauma-Repola, and Valmet are larger than any of the corresponding Norwegian firms, though industry structure measured by average firm size does not differ much between the two countries. Nevertheless, the dominant Nordic metal and engineering companies are

Swedish, and they have to a larger extent than their Finnish and Norwegian competitors proved successful in advanced and sophisticated production.

Despite these differences, the metal and engineering industries of the Nordic countries have faced similar challenges through the international recession. Thus, the firms in these industries are all in a position that make them look for other market opportunities, the offshore market obviously being one that is easily hit upon. Besides, the attractiveness illustrated by the characteristics mentioned earlier, the Norwegian offshore market is located close to any of the Nordic countries, and the culture of the Norwegian society is familiar to the companies that might get involved.

3.3 Excess Capacity

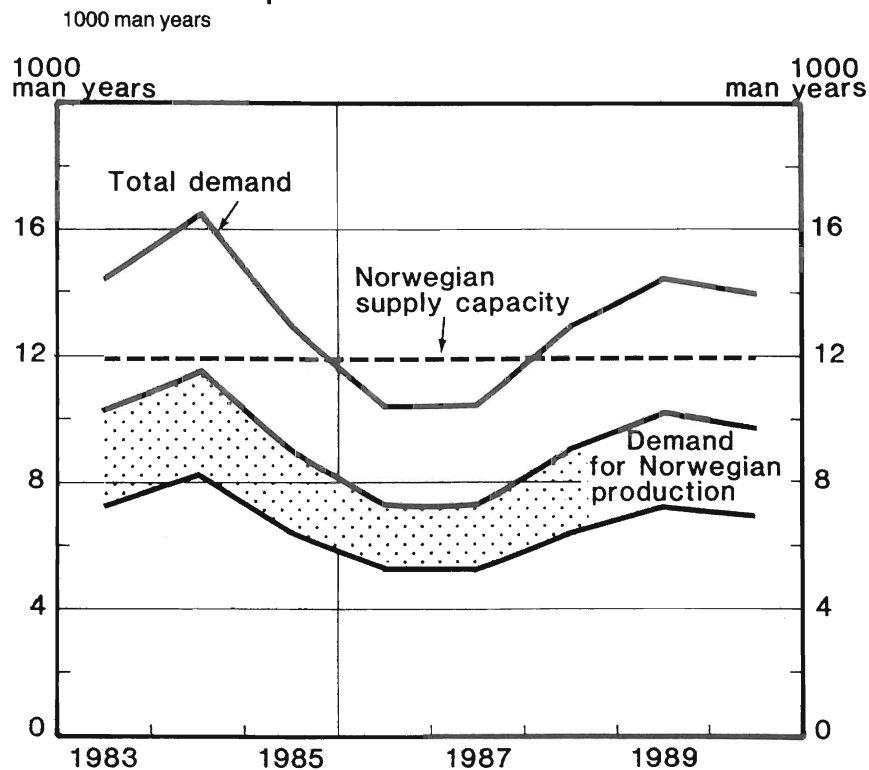
The growth in Norwegian offshore investments (Figure 2), the prospects for the offshore markets on a world scale, and the unique challenges that the offshore activities of the North Sea represent, are all factors that have contributed to draw the attention of potential suppliers to the Norwegian part of this market. This interest is indicated by the deliveries that already have taken place for such activities. The offshore deliveries from Norwegian companies has risen by 20–30 per cent annually so far in the 80s. Most of this has been supplies for the Norwegian offshore market (Norges Industriforbund, 1982 and 1983). Swedish companies doubled their offshore deliveries from 1981 to 1982 (Swedoccean, 1983), while Finnish producers have not yet had a significant market share.

As already mentioned, offshore deliveries are identified as a business with unique growth prospects globally. This implies that new production capacity in the Nordic countries is continually being adjusted to this market.

- Almost all Norwegian companies already in this business, expect that their deliveries for this market will increase during the coming years. Though, they are still focussing mainly on the domestic offshore market, and exports, so far, have been of minor importance (Industriforbundet, 1983). At the political level, the Norwegian government has encouraged the shipyards to participate in the offshore business (St.prp. nr. 97 (1981–82), s. 9).
- On the Swedish side the suppliers of engineering goods and services for the offshore market and the companies interested in this market, coordinate their efforts through an organization established for this purpose, Swedoccean; A recent Swedish trade delegation to Norway, with business leaders and political representatives, indicate their interest in this market.
- The Finnish producers have, through their trade association, identified this market as an option they are considering, partly with the assistance of Finnish authorities.

The demand situation is illustrated by Figure 3. The demand for engineering goods and services from the Norwegian offshore market, will not grow significantly in the 80s. The growth has already taken place. At the same time, aggregate production capacity for such deliveries on the Norwegian side is already at a level large enough to satisfy total demand. The aggregate capacity is estimated to be 12,000 manyears in 1982 (Statoils perspektivanalyse, 1982). Taking into consideration that the production structure of Norwegian engineering industries is not sufficiently diversified to supply all kinds of products included in the total demand, and secondly, that most of their attention and production are directed towards the domestic market, an excess capacity on this field exists within the Norwegian economy. This is especially true if the share of Norwegian deliveries that might be possible to achieve, remain at the level of 50–70 per cent of total demand, i.e. not much more than what has been normal since the late 70s.

Figure 3 Aggregated demand for engineering products and services from the Norwegian offshore market, the Norwegian share of such supplies, and the aggregated production capacity of Norwegian engineering firms for offshore related products 1983–90



Source: Statoils perspektivanalyse, 1982 and 1983

3.4 Power Relations

The petroleum resources of the continental shelf of Norway belongs to the Norwegian society, the government being responsible for its management. This is mainly done through a concessionary procedure, giving oil companies a time limited ownership of well defined areas. If petroleum is found, the oil companies have a right to exploit it. In fact, the government's oil policy may be said to be implemented by the oil companies, and the company which is chosen to be the operator of the owner group is of particular importance in this respect. This is not the whole truth, however. The implementation of Norwegian oil policies has to take place within the framework agreed upon in the concessions, and according to the government's point of view as to how these conditions are met. In other words; most of what is happening within this market is due to considerations done by the government or the oil companies. They are the two central power holders. In the following we shall look briefly into this situation.

The oil companies are the main customers of the offshore market. They decide what to buy and from whom. Certain rules governing the procurement procedures is, however, enforced by the government. The purchases shall in general be put out on a bid, securing competition between potential suppliers. In principle the most competitive offer is to be chosen, provided Norwegian producers have been given a fair chance to compete. All larger purchases, i.e. of more than 1 million NOK at present, shall be reported to the government before the final deal is settled, giving the government a chance to make sure that the conditions agreed upon are fulfilled.

The specifications made by the oil companies depend partly on how the petroleum field is planned to be developed. Such development plans, that have to be confirmed by Norwegian authorities, are partly based on technological and organizational know-how, partly on the characteristics of the petroleum field that is to be exploited, e.g. the geological structures, depth of water, and the like. The plans do not specify exactly how things are to be done, however. Much has to be settled throughout the planning and construction process that follows. The knowledge of the oil companies as to how things may be done and their traditional way of doing things, will therefore influence the relative competitiveness of different sellers in the market.

The challenge of the suppliers is to make their products known to the oil companies. They have to convince the oil companies about the usefulness of their products. But, this is only part of the job, especially in connection with the large and complex products ordered for the development of an oil field. In addition the oil companies must have confidence in the supplier, relying on the organization of the supplying companies to be able to stick to the time table and to fulfill other specified conditions. Altogether, this implies that the oil companies usually play the dominant role behind the transactions taking place in the offshore market. Particularly in times of scarce market opportunities for potential suppliers, i.e. in a buyer's market situation, this position is quite powerful.

The Norwegian government also holds a central position. The government chooses which of the interested oil companies that will take part in the petroleum activities, and negotiates the terms on which this participation is to take place. Through such decisions the government may influence the conditions that regulate the offshore market. Besides, being in the position to choose what fields to be handed out and which ones to be developed, it also to some extent influences what kinds of equipment the license holders will need. In addition, by deciding how many field developments that will take place, the government more or less determines the aggregate level of demand in this market.

It should be pointed out that the effects of exercising this influence varies in time and strength. As far as the aggregate level of demand is concerned, the effects of particular decisions on future demand tend to occur by longer lags than what is normal in industrial markets, because oil and gas exploration, as well as the preparations needed to go ahead with the development of a field, are very time consuming. The strength of the government's influence in this market, of course, also depends on factors outside its control: If petroleum is not found in sufficient quantities to be commercially exploited, there are no fields to develop for oil production. And even if petroleum resources are expected to be found, the interest of the oil companies to take part in new concessions may change, for instance due to reductions of the oil price, or due to better opportunities on other continental shelves.

This rough presentation suggests that the Norwegian offshore market to a large extent is a political market. This is primarily due to the power position of the state. The government can decide on central factors influencing the demand situation of the market. But the political character of this market also stems from the fact that the demand side is operated by the oil companies, implying that their huge administrative power is exercised within traditional market mechanisms. Thus, the governing of this market includes standard market processes, administrative procedures within and between large organizations, negotiations, as well as public procedures. This mixture of governance principles and practices is of importance for the development and design of business strategies in this field.

4 BUSINESS STRATEGIES OF NORDIC ENGINEERING COMPANIES

To get an idea of the business strategies developed by the Nordic engineering companies we have interviewed representatives of the national trade associations of these companies in Finland, Norway, and Sweden. The purpose of these conversations was twofold. First, we wanted to check whether the general interest for offshore deliveries was as expected, and to what extent this was reflected in the work of the national trade associations. Second, we wanted to know how strategies developed in relation to the Norwegian offshore market varied according to the competitive position of the national engineering companies, i.e. whether business strategies reflected different combinations of political and standard market strategies.³

The competitive position of a company depends on both its business competence (technical, commercial, etc), and on its access to the central decision makers of the market. Whereas the Swedish engineering companies have been more successful in the international markets than the companies of Finland and Norway, the Norwegian companies have a more direct access to the Norwegian government than the companies of the other two countries. This line of thought led us to expect that the business strategies also would vary between the companies of the three countries, and thus between the national trade associations in question.

The conclusions drawn from our empirical work are still tentative. Nevertheless, we believe we have captured the main trends of the business strategies through our conversations. The main characteristics appear to be:

- A. The business of offshore deliveries is a business of prime interest for a substantial number of engineering firms in all three countries.
- The Norwegian engineering companies have already completed a substantial number of offshore deliveries, the gross sales amounting to 13–15 billion NOK in 1983 (Norges Industriforbund, 1983). Expectations are that this engagement will result in product development to secure future production. Their trade association is heavily involved in this work, striving to organize the conditions so as these activities may continue.
 - The Swedish companies have supplied the Norwegian offshore business with a substantial volume of deliveries, but not nearly to the same extent as the Norwegian companies (total exports of ocean technology amounted to 3.5 billion NOK in 1982). The growth of Swedish deliveries is, however, considerable: Exports rose by almost 120 per cent in one year (from 1981 to 1982). The interest of the Swedish engineering companies in this market is supported by the establishment of Swedocean within the national association of Swedish metal and engineering companies in 1979, organizing "companies engaged in the development, manufacturing and marketing of products and services in the field of Ocean Technology or in the exploitation of natural resources in the ocean and under the ocean floor" (Swedocean, 1982).
 - Offshore deliveries from Finnish engineering companies are not large, even though they amounted to approximately 1.5 billion NOK in 1982. The business of offshore supplies is, however, identified as one of the possible growth sectors for Finnish engineering companies, currently being considered under the direction of their national trade association. The interest for this market is enforced by the

future offshore activities outside the coast of the USSR, implying that Finnish companies might get involved through the bilateral trade agreement between these two countries, mainly on the assumption that the Finnish companies possess the necessary competence.

B. The Norwegian offshore market is of particular interest to the Nordic engineering companies.

- For Norwegian engineering companies, the Norwegian offshore market is a domestic market, and, hence, of prime importance. It allows them to influence the business transactions taking place through political strategies towards the government as well as through standard market strategies.
- As the Finnish and Swedish companies are concerned, their particular interest is partly due to the geographical closeness to this market, partly to the socio-cultural closeness to the Norwegian society. This is one of the two markets that currently presents the most demanding technical and commercial challenges for offshore activities. The suppliers interested to get into this business very much like to demonstrate their ability to cope with the tough environments of the North Sea. The other market is the North Sea activities in the British sector. This market does not have the same growth prospects as the Norwegian, due to the fact that the major British petroleum resources already have been, or are being, exploited.
- Regarding the Swedish companies, their particular interest is partly expressed through the strategies of Swedish owned companies in Norway. Further, Swedish trade delegations to Norway, seminars in order to inform Swedish businessmen about opportunities and obstacles in the Norwegian offshore market, and studies on business opportunities done by Swedish authorities and research institutions (SIND 1983:6), illustrate this particular interest.
- The particular interest of Finnish engineering companies for the Norwegian offshore market is among other things indicated by the fact that a representative of Finnish industry for some time has been in Norway to evaluate this market. The Finns also plan to increase the number of Finnish export campaigns to Norway by 70 per cent from 1982 to 1984 (34 compared to 20), while the total number of Finnish export campaigns around the world is scheduled to increase by 18 per cent (Finnish Business Report, No. 7-8, 1983).

- C. The business strategies of the engineering companies and their trade associations with respect to the Norwegian offshore market differ somewhat between the three Nordic countries, reflecting the differences of competitive positions.

The Norwegian and Swedish strategies represents to some extent the opposites. The Norwegians put greater efforts on a political strategy, the Swedes rely more on standard market strategies. Both types of strategies are of course represented in the business strategies of both countries, as is the case with the Finns, whose strategy mix is between the other two.

This picture may be described somewhat further:

- The Norwegian engineering companies try to move the government to establish national preferences in the domestic offshore market through political strategies. The purpose of these political strategies is to keep the companies alive in the short run, hoping to take advantage of the product development resulting from these engagements on the international scene in the long run. The fact that an offshore market has developed in Norway is considered a unique opportunity for Norwegian offshore related industries, an opportunity that one should make the most of. Thus, efforts on political strategies are currently founded on the assumption that the jobs performed for this market contain a potential for succeeding in the future through standard market strategies internationally, no matter how the jobs are achieved today.
- The Swedish engineering companies are definitely more concerned with standard market strategies to obtain a foothold in the Norwegian offshore market. This strategy is based on getting their products known to the customers in the market, relying on what they so far have been able to accomplish on the international scene, and on the basic interests of the oil companies to get the best products at competitive prices. On the other hand, the Swedish companies have quite consciously tried to avoid political strategies in Norway, fearing that this may create forces that will put a pressure on the Norwegian government and the oil companies to take other than pure market considerations into account.
- The Finnish engineering companies have not yet concluded their current work on a business strategy. So far the efforts have been initiated at the company level. Thus, standard market strategies have been prevailing up to now. But there is work going on to develop a strategy for Finnish engineering companies in a broader sense than just the offshore market, under the direction of their national trade organization. The group responsible for this work features the top executives of the major engineering companies in Finland and of their trade association. In this work the market for offshore deliveries is selected as one of a few to receive special attention. Besides basing the business on the comparative advantage of Finnish industries, the strategies acted upon will also feature more

political elements. For instance, if Finnish companies could qualify for offshore deliveries to the USSR through deliveries to the Norwegian offshore sector, Norwegian companies could be subcontracted for offshore deliveries under the bilateral trade agreement between Finland and the USSR in return.⁴ Such trilateral exchanges may be effectuated either at the company level or at the national policy level, the first being the most likely.

Altogether, we think that the business strategies pursued on the Nordic scene may create increasing tension between Nordic engineering companies, partly expressed through their associations. The attention that the market for offshore deliveries is gaining, and the fact that this attention is concentrated to the Norwegian offshore market, implies that the present excess production capacity for such supplies is becoming even more prevalent. Thus, the growing tension will result from the zero-sum game situation facing each of the engineering companies aiming for the Norwegian offshore market.

5 POLICY IMPLICATIONS

The discussion so far implies that business firms pursue their self interests not only in the market, but on the political scene as well. And this, in turn, implies that any government is urged by firms to activate the control it holds to the advantage of domestic business firms, i.e. the ordinary political control, as well as the control it might hold directly in particular markets.

Such situations are not unique. In the same way as the Norwegian government is in control of matters of importance to foreign business firms in the offshore market, governments of other countries are in a position to influence factors which affect the interests of Norwegian companies in other markets. Hence, there exists a situation where nations may find it in their interest to negotiate in order to reach agreements of mutual benefits to the domestic producers of these countries. The agenda for such negotiations is not limited to issues concerning market transactions. Most often it includes questions about how these transactions are to take place, in other words: central institutional economic factors.

As to the Norwegian offshore market, the question of what policies the Norwegian government will choose, may be elaborated by looking at how different industries find their interests served by different policies. Norwegian shipowners advocate the view of free entrance for foreign companies to the Norwegian market. They are in favor of the liberalistic option because their revenues rely more on their access to the markets of other countries than to be protected at home. Second, there are companies that see their interests best taken care of through bilateral trade agreements. These are companies that to a large extent supply markets in which the governments of different countries are important buyers, as for instance companies in the electronics business

oriented towards telecommunications or defence equipment. Finally, we have the protectionistic option, used for instance towards the farmers for several decades, and which currently to some extent is favored by the shipyards.

These illustrations serve the purpose of pointing out that the chances of companies to realize their interests largely depend on the policy option chosen by their own as well as by other governments, and that the interests of different companies are best taken care of by different policy efforts, depending on their market position. There is no single policy option which serves the interests of all business firms. It all boils down to what the power base of the company is: If it thinks it will succeed in open competition, it will be in favor of liberalistic trade policies. If not, it will support efforts to protect its business in the domestic market.

There is, of course, no reason for any government to formulate its industrial policies by strictly reflecting the interests of the companies or industries in question. A broad range of considerations has to be made. Thus, this article only argues that the business interests of the companies concerned is a very heavy factor when the government formulates its policies. As far as Norway and the offshore market is concerned, the question of vulnerability of the Norwegian economy is one that should be seriously considered (see Chapter V in this volume). However, in the current economic situation we assume that the interests of the dominant companies in question will paramount all other considerations. Then, the question is which of the policy options is most likely to be chosen for the Norwegian offshore market, as far as engineering products and services are concerned?

- No country has implemented a liberalistic policy for its offshore market. Such a strategy is not very likely in Norway either. Excess production capacity among Norwegian suppliers for the domestic market, and limited growth prospects in other markets for these suppliers, almost rule out such a policy even on the Nordic scene. A liberalistic strategy limited to the Nordic countries would be hard to justify: Why should engineering firms of the Nordic countries be included, and not the ones of The Federal Republic of Germany, The Netherlands, France, Spain, the U.K., and Italy, to mention some?
- The bilateral version features a negotiating situation as to the conditions for different markets, as well as the exchange of specific products. The question is: What areas should be picked out to be negotiated? Even if these are agreed upon, the question of how this bilateral option can be implemented still remains: Through agreements included in the common framework of these areas, or through more specific settlements as the setting of rules for mutual repurchasing?
- The protectionistic option may be implemented in many different forms. The most rigid form, stating that foreigners are not allowed to take part, is currently not getting much support. Thus, the form chosen will be more subtle than this, even though the results may be more or less the same.

As far as the three options and Nordic economic co-operation are concerned, the bilateral is a most likely compromise in at least two aspects. First, it works more in favor of the domestic suppliers than the liberalistic one, while it is more acceptable to foreigners than a pure protectionistic strategy. This holds for the relations between Norway and foreign countries in general, and not only amongst the Nordic countries. Second, it makes it possible to give some content to the ongoing co-operative work between the Nordic countries. Liberalism these days is mainly a question of rhetorics for all of these countries in different respects.

As far as Norway is concerned, there is no reason to believe that the government will renounce much in the name of Nordic co-operation. If Norwegian companies are to sacrifice their advantages in the domestic offshore market, it either has to imply that intra Nordic co-operation will increase the possibilities for succeeding at the offshore markets of other countries, or that the offshore deliveries are replaced by about the same amount of deliveries to the markets of these co-operating countries. If not, measures will continue to be taken in order to prefer domestic suppliers.

6 CONCLUSION

The main issue of this paper concerns the realism of the general intention to develop "a Nordic home market". Our judgement of the offshore market and the policies of the Norwegian government, is that the content of Nordic economic co-operation at the national level most likely will be limited to efforts encouraging co-operation at the firm level. If this kind of work does not succeed, or if the co-operation at the firm level should turn out to be fictitious, the protectionistic option in some form or another, is more likely than the liberalistic one. This means frustration for proponents of Nordic economic co-operation at the political level. Co-operation at the firm level cannot, however, be ruled out. Protectionism will, most likely, only strengthen the power base of the domestic firms when they negotiate with foreign companies. If the interests of the foreign companies are sufficiently strong, this may even promote inter-firm co-operation across national borders on a scale that would not have been the result of free trade arrangements.

The point is that the self interests of the market actors are the brick stones of the market, and that they are pursued in politics as well. Hence, if a country follows a liberalistic policy, this implies that the domestic producers do not have to renounce much as far as the domestic market is concerned. And most likely they need guarantees that similar policies will be implemented in other countries, too.

As far as this holds true, a situation with stagnating economies almost all over the world, does not encourage liberalistic policies. The dilemma is that liberalistic trade policies, which by many are expected to lead to economic growth, requires economic growth to be implemented. This is part of the reason why the offshore markets, which have been

emerging during the last decade of economic recession, are greatly influenced by political considerations. The governing of these markets is constituted by market processes combined with administrative procedures (within and between large organizations), negotiations, as well as public procedures. This character of the offshore market is also important for the future organization and functioning of these markets, not only in Norway, but all over the world. As institutional and organizational forms are likely to prevail, fundamental changes cannot be expected to take place in the immediate future. Thus, we believe that the political characteristics of the offshore markets will last.

In this paper we have only discussed policy formulation related to the Norwegian offshore market. The processes sketched out, however, have general relevance to the understanding of industrial policies. Industries in all countries appear to have "national backyards" they want to keep for themselves. Hence, perhaps a paradox to many, the political characteristics of markets as we have described here, are to a great extent caused and reinforced by business strategies adopted by firms. In other words: Trade policies do not solely reflect the "pure will" of politicians. Rather they reflect the self interests of market actors so brilliantly described by Adam Smith in his classical works.

NOTES

- 1 The supply situation is discussed in more detail in Berrefjord and Heum, 1983.
- 2 The two options are thoroughly described, discussed and compared in Statoils Perspektivanalyse, 1982. Figure 2 in this paper is based on the second of these options. However, in the current medium term perspective the difference between the two is not large.
- 3 As far as the foreign companies are concerned, the strategies followed in the Norwegian offshore market may differ from the strategies pursued at home. A standard market strategy in the offshore market may for instance be based on subsidies obtained domestically.
- 4 Finland's trade attaché to Norway, Raimo Hyttinen, presents a similar view in a interview in Teknisk Ukeblad (nr. 42/1983) stressing the experience of Norway from offshore business and of Finland when it comes to arctic conditions and marketing in relation to the USSR.

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INDUSTRIAL SUBSIDIES IN THE NORDIC COUNTRIES

by Bo Carlsson, IUI

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1 BACKGROUND AND PURPOSE *

In the process of restructuring of world industry which was precipitated by the oil crisis of 1973/74, considerable attention has been given to the question what the proper role of the government should be. As could be predicted, the degree of government intervention has varied widely among countries. So have the types of measures used. But, generally speaking, most government actions have been designed to delay rather than speed up industrial restructuring. In some countries, especially those in which exports play a relatively minor role, various forms of protection have been the primary means used. These include the whole spectrum of tariff and non-tariff trade barriers, particularly import quotas, "voluntary" trade restrictions, and minimum pricing schemes. Government procurement policies have often been used to prevent foreign firms from competing for domestic contracts. Many purely domestic policies have also been used to deal with restructuring problems, particularly various types of labor market intervention ranging from general unemployment compensation programs to highly specific wage subsidies to particular industries, firms, and job categories. Regional support programs have often become euphemisms for subsidies to particular firms and industries. When all else has failed, governments have sometimes felt compelled to take over the whole responsibility for restructuring through direct ownership.

But in countries such as the Nordic ones which are heavily export oriented and where restructuring problems have been particularly severe in large export industries, the most important element of industrial policy for dealing with restructuring problems has been subsidies, in varying combinations with other types of measures already mentioned. However, import restrictions have been used to a smaller extent in the Nordic countries than elsewhere, precisely for the reasons just indicated.

The purpose of the present study is to compare the industrial subsidy programs in the Nordic countries in terms of magnitude and orientation. In analyzing industrial subsidies it is important to keep in mind that the degree to which government industrial policy relies on subsidies varies from country to country. This compounds the problems of interpretation which exist already because of the lack of internationally comparable data. The virtual absence of international comparative studies of industrial subsidies is an indication of the difficulties involved. Data on subsidies is one type of information which most governments are not eager to divulge. Even when information is available, the transparency of the data leaves a lot to be desired. Therefore, the attempt made in this study to compare industrial subsidies in the Nordic countries must be recognized for what it is, namely one of the first attempts to make such an international comparison. However, the comparison is facilitated by the fact that the Nordic countries are more similar in most relevant aspects than are industrial countries in general: size of the economy, international orientation, industrial structure, etc. Perhaps even more

* I would like to thank Niels Chr. Sidenius, University of Aarhus, for helping me collect and interpret the Danish material. Without his help, it would not have been possible to include Denmark in this study except in a very cursory manner. Similarly, I am heavily indebted to Pekka Ylä-Anttila, ETLA, Helsinki, for furnishing both data and the comments and suggestions necessary to overcome the language barrier in interpreting the Finnish material. Thanks also to Per Heum, IØI, Bergen, for furnishing me with Norwegian data, and to Timo Summa, Finnish Federation of Metalworking Industries; Arne Mikkelsen, Danish Economic Council; and Anders Bjerre, Institute for Futures Studies, for insightful comments on earlier drafts. For all remaining errors and omissions, I am of course solely responsible.

important here is the fact that the legal and institutional arrangements are probably more similar among the Nordic countries than among any other group of small industrial countries.

2 DEFINITION OF SUBSIDIES

There are four main categories of subsidies considered here. The first category is *grants*. Conceptually, this should be fairly straightforward, but in practice the distinction between grants and loans is not always clear. In the Swedish case, according to the procedure used by the Ministry of Industry, so-called depreciation loans, some conditional loans, and value guarantees are classified as grants. Depreciation loans are given under the provision that they be written off in a certain way. Conditional loans have been granted to reduce the beneficiary's risk, e.g. in connection with a development project. Reconstruction loans have been granted to the shipbuilding industry. A portion of these will probably be repaid, but it is difficult to determine how much. (Ministry of Industry, 1982, p. 14.)

The second category contains the *subsidy elements of loans* issued by various government bodies. These are computed as the difference between the average cost of government borrowing and the interest actually received, multiplied by the outstanding debt at the end of the year. Depreciation in the value of loans (due to losses or "forgiving" of loans) is also included.

The third category is the *net cost of guarantees* which is equivalent to guarantees fulfilled less guarantee fees received.

The fourth category is the *net cost of equity capital*, computed as the difference between the cost of government borrowing (as a proxy for a reasonable yield requirement) and dividends on shares, if any. Reductions in the value of share capital are also included. In the Swedish case, some equity capital which the government has bought in companies so heavily debt-ridden that the stock has had no market value and has not been expected to yield any future dividends, is also included as an immediate cost, i.e. equivalent to grants.

All the material presented here includes only direct costs to the government's budget. No account is taken of indirect effects, e.g. in the form of reduced need of unemployment compensation or increased revenue from the corporate profits tax due to subsidies. Nor has any attempt been made here to evaluate the macro-economic effects of industrial subsidies. Such an attempt was made in an earlier IUI study (Carlsson, Bergholm, Lindberg, 1981).¹

In presenting data on industrial subsidies, a distinction is made between general and specific subsidies. General subsidies refer to schemes under which the subsidy is given under certain standard rules of procedure to determine the eligibility of applicants and

within those rules is available to all comers. Export subsidies and support given to small firms or to all firms in certain regions are examples of general subsidies. By contrast, specific or tailor-made subsidies are given to particular firms for particular purposes, e.g. for restructuring or for maintaining employment at a certain level in an unprofitable operation.

3 NORDIC COMPARISON

The available data on industrial subsidies in the Nordic countries are summarized in Table 1 A–D. But before any interpretation of the data is attempted, the following remark needs to be made. The data for Sweden, Norway and Finland have been obtained from a single official government publication for each country. Thus, there is at least some reason to believe that the definitions and procedures used are internally consistent. The general approach taken, namely the calculation of the net cost to the government of various support measures, is also very similar across the three countries. However, in the Danish case there is no such official calculation. The Danish data reported here have been obtained from several sources. The Danish figures in the table should therefore be viewed as distinctly less reliable than those for the other countries. In addition, for reasons stated below, there is reason to believe that the level of industrial subsidies in Denmark in 1982, as calculated here, was extraordinarily high.²

Table 1 A Direct net costs to the government of industrial subsidies in Sweden 1981/1982

	Sweden, fiscal year 1981/82, million SEK			
	Net cost of grants and loans	Guarantee losses incurred	Net cost of equity capital	Total
General subsidies				
Export promotion	762	284	15	1 061
R & D	601 ^a		10	611
General investment subsidies				
Small firm support		52	8	60
Regional policy	..	..	..	601
Employment subsidies				
Total general subsidies	..	..	..	2 333
Selective subsidies				
Sectoral subsidies	..	17	..	314
Rescue and structural policy	..	..	..	8 323
Total selective subsidies	..	..	..	8 637
Total subsidies	..	..	..	10 970
General subsidies as % of MVA				1.6
Selective subsidies as % of MVA				6.1
Total subsidies as % of MVA				7.8

^a Incl. 184 million SEK in tax concessions related to R & D expenditures

MVA = Value added in mining and manufacturing

Sources: Ministry of industry, 1982

The first conclusion to be drawn is that the total amount of subsidies is very large indeed in all four countries, ranging from 1.3 billion FIM in Finland (corresponding to 3.9 per cent of value added in mining and manufacturing in 1981) to 11 billion SEK in Sweden in 1982 (7.8 per cent of value added). The Danish industrial subsidies amounted to 4.4 billion DKK in 1982, representing 5.3 per cent of value added. In Norway, the total amount of subsidies was less than half of that in Sweden (4.7 billion NOK), but in relative terms the subsidies were larger than in Sweden, namely 8.4 per cent of value added in mining and manufacturing. Thus, whereas in previous studies (Carlsson, 1983a and 1983b) Norwegian subsidies appeared to be considerably smaller than those in Sweden, they are now found to be larger. This reflects primarily the rapidly increasing level of subsidization in Norway in recent years – more than doubling between 1980 and 1982 – but to some extent also different definitions used.³

Another conclusion is that both Swedish and Norwegian subsidies are dominated by highly selective programs (over 75 per cent of total subsidies), while in Finland the subsidies are of a more general type. In Denmark, the general subsidies appear to be somewhat smaller than in Finland, but the selective subsidies are considerably larger, thus making total Danish subsidies relatively greater than those in Finland.

Table 1 B Direct net costs to the government of industrial subsidies in Norway 1982

	Norway, 1982 million NOK				
	Grants	Net cost of loans	Guarantee losses incurred	Net cost of equity capital	Total
General subsidies					
Export promotion	211		2		213
R & D	137	22			159
General investment subsidies					
Small firm support		5			5
Regional policy	404	210	24		638
Employment subsidies					
Total general subsidies	752	237	26	0	1 015
Selective subsidies					
Sectoral subsidies	80	36			116
Rescue and structural policy	1 512	134	393	1 273	3 312
Total selective subsidies	1 592	170	393	1 273	3 428
Total subsidies	2 344	407	419	1 273	4 443
General subsidies as % of MVA					2.0
Selective subsidies as % of MVA					6.4
Total subsidies as % of MVA					8.4

Sources: Finance Ministry, 1983

The sectoral subsidies in Denmark are given exclusively to the shipyards. In Sweden and Norway, the shipyards are also the main beneficiaries of selective measures, although not the only ones. The Finnish shipyards do not seem to have received any public support.

Even though it has not been possible to show the distribution of the Swedish subsidies on forms of support, it is known from earlier studies that grants are by far the most common form of subsidy in Sweden. Grants are clearly the dominant form of support in Finland and Norway as well, but less so in Norway, where equity capital plays a larger role than in Sweden and Finland. In Denmark, subsidized loans constitute the main form of support both to shipyards and to industry in general. The size of such subsidies in 1982 reflects the fact that in 1982 the cost of government borrowing was extremely high – the yield on government bonds was 20.39 per cent – while the rates charged on subsidized loans were 7–12 percentage points lower. As the interest rates have fallen dramatically in Denmark since the last quarter of 1982, the amount of subsidies should also have been reduced significantly. Subsidies via equity capital play a very minor role in Denmark; at the end of 1983, the Danish government held equity in only a handful of industrial companies, the 3 largest of which had a combined total of less than 4,000 employees (*Management*, No. 9, 1983, p. 12.).

Table 1 C Direct net costs to the government of industrial subsidies in Finland 1981

	Finland, 1981, million FIM				
	Grants	Net cost of loans	Guarantee losses incurred	Net cost of equity capital	Total
General subsidies					
Export promotion	90		243		333
R & D	171				171
General investment subsidies		66			66
Small firm support	4				4
Regional policy	320				320
Employment subsidies	158				158
Total general subsidies	743	66	243	0	1 052
Selective subsidies					
Sectoral subsidies	66	2			68
Rescue and structural policy			4	162	166
Total selective subsidies	66	2	4	162	234
Total subsidies	809	68	247	162	1 286
General subsidies as % of MVA					3.2
Selective as % of MVA					0.7
Total subsidies as % of MVA					3.9

Sources: Ministry of Finance, 1983

Among the general subsidies, export promotion schemes constitute the largest expenditures in Sweden and Denmark, whereas regional policy measures dominate in Norway. In Sweden, R&D support also plays a relatively significant role.

In earlier studies (Carlsson 1983a and b) it was found that Sweden and Finland had extremely large industrial subsidy programs in 1979 compared to other West European countries. However, those comparisons were based on "gross" subsidy figures which did not permit distinction between loans and grants, i.e. loans were counted as nominal amounts rather than as the fraction thereof which can properly be regarded as the subsidy element. That is the reason why Finland, where loans at only slightly subsidized rates have played a dominant role, appeared to have such a large subsidy program. When only net subsidies are counted, the Finnish figures become decidedly more modest. On the other hand, the results obtained here indicate almost the opposite for Denmark: Denmark is generally perceived as having a hands-off policy towards business. Yet, because of the extremely high interest rates in recent years, the net cost to the government of Danish industrial subsidies appears surprisingly large. But it should be borne in mind that even though the Danish subsidies were extraordinarily large in 1982 and comparatively heavily directed to the shipyards, it still holds true that firm specific subsidies to firms in acute financial need similar to those in Sweden and Norway are practically unknown in Denmark.

Table 1 D Direct net costs to the government of industrial subsidies in Denmark 1982

	Denmark, 1982, million DKK				
	Grants	Net cost of loans	Guarantee losses incurred	Net cost of equity capital	Total
General subsidies					
Export promotion	217	731	90		1 038
R & D	510				510
General investment subsidies		400			400
Small firm support		49			49
Regional policy	56	31			87
Employment subsidies					
Total general subsidies	783	1 211	90	0	2 084
Selective subsidies					
Sectoral subsidies		2 246			2 246
Rescue and structural policy				58	58
Total selective subsidies	0	2 246	0	58	2 304
Total subsidies	783	3 457	90	58	4 388
General subsidies as % of MVA					2.5
Selective subsidies as % of MVA					2.8
Total subsidies as % of MVA					5.3

Sources: For information on sources and calculation of Danish subsidies, see Appendix

Thus, the present study further underlines the need for data which are internationally comparable. It also brings out the fact that industrial subsidies cannot be properly understood in isolation from other aspects of government policy, e.g. monetary and fiscal policy, trade policy, etc. There is clearly a need for further research in this area before more definitive conclusions can be drawn.

NOTES

- 1 Subsidies can be regarded as an extreme form of negative taxes which lock resources into their present uses, thereby raising factor prices to non-subsidized firms or industries and thus retarding growth in the economy as a whole. This is one of the main results of the Carlsson-Bergholm-Lindberg study. See also Eliasson-Lindberg (1981).
- 2 For an overview of Danish industrial policy and industrial subsidies, see Sidenius (1982), Hansen, Jensen & Nielsen (1981), and Management Erhvervspolitiske Forum (1982 and 1983).
- 3 Calculations based on data from the Revised National Budget show that the total amount of industrial subsidies in Norway in 1981 was 3,975 million NOK, corresponding to 7.9 per cent of value added in mining and manufacturing.

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APPENDIX: Notes on the calculation of Danish industrial subsidies

All amounts in thousand DKK.

Export promotion

Sources:

Grants: Danmarks Erhvervsfond (1983), p. 19.

Loans: Danmarks Nationalbank (1983), p. 88

Guarantees: Danmarks Erhvervsfond, *op.cit.*, p. 3 (The figure refers to losses written off in 1982).**R&D**

Grants:	Technological service	314,976	Source: Teknologistyrelsen (1982) pp. 28, 10, 10, 14, 13, and 30, respectively
	Consulting services	48,200	
	Productivity promotion	15,200	
	Product development	103,738	
	Development Fund (grants)	500	
	Development Fund (losses)	15,096	

	Technical dev. of data processing, etc.	10,000	Source: MEF (1983), p. 20.
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	D:o concerning energy	0	
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	Technological forecasting	2,000	
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Loans:	Technological service	11,569	Source: Teknologistyrelsen, <i>op.cit.</i> , pp. 28 and 13. Assumed interest rate: 8.75 % (<i>ibid.</i> , p. 30).
	Development Fund	142,800	

(The figure in Table 1 D refers to interest charges on the above amounts at 11.25 % (20.0–8.75 % interest).

General investment subsidiesLoans: Source: MEF, *op.cit.*, p. 19. (The figure refers to so-called "K-låneordningen".)**Small firm support**

Loans: Source: Direktoratet for Egnsudvikling (1982), p. 16. Remaining debt at the end of 1982: 416,400; interest rate for 1982: 9 %. The figure in Table 1 D refers to 11 % (20–9 %) on remaining debt, plus incurred losses of 3,287 thousand DKK.

Regional policy

Grants:	Investment and moving grants	54,000	Source: Direktoratet for Egnsudvikling, <i>op.cit.</i> , p. 7.
	Grants for special expenses	875	
	"Grundlagstilskud"	1,000	

Loans:	Plant loans at 7.5 % p.a.	216,000	Source: <i>Ibid.</i> , p. 7.
	"Industrihuslån, 7 % p.a.	28,600	

Sectoral subsidiesLoans: Source: Danmarks Nationalbank, *op.cit.*, p. 88. See also EMF, *op.cit.*, p. 19.**Rescue and structural policy**

State financial contributions to the Danish steel rolling mill:

1978: Equity capital contribution 108,000.

1980: Equity capital contribution 108,000.

1981: Purchase of preferential stock 54,000 and contribution of equity capital 162,000. The equity capital contributions of 1978 and 1980 are written down by 144,000, i.e. to 72,000.

Thus in 1982 the total state capital invested was 288 million DKK. At 20 % interest, the cost to the government was 58 million DKK (72+54+162). Source: Bill presented to the Danish Parliament in 1981.

TRENDS IN TOTAL FACTOR PRODUCTIVITY IN FINNISH AND SWEDISH INDUSTRIES

by Geoffrey J. Wyatt, Heriot-Watt University and ETLA

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particular level of sales. Or equivalently that sales are maximised for a given budget of costs. Accordingly, in this study the measure of output was taken to be sales or gross output, and inputs included materials and intermediate products.

The second input was labour, measured as man-hours per year. It would have been preferable to have adjusted the labour variable to take into account changes in quality such as occur when the labour force becomes more highly educated or when the mix of skilled and unskilled labour changes. Unfortunately the necessary data were not available to make this kind of adjustment, which implies that any changes in the quality of labour inputs are attributed to the residually measured index of total factor productivity.

The third input in this study was the flow of capital services from structures, equipment, machinery and so on. A somewhat unorthodox measure of capital services was adopted, namely a weighted average of the official gross stock and capital consumption figures. This was chosen because it was considered to give a reasonable approximation to a service price aggregate of the capital stock. Official capital stocks are estimated synthetically, often from a perpetual inventory model, as asset price aggregates, and this is inappropriate for an historical study of production. On the other hand, what applied researchers have often done is to re-estimate the stock of capital, eschewing the depreciation assumptions adopted in official measures in favour of the assumption that depreciation for any asset is proportional to the stock of that asset. But in the present study it was assumed that the depreciation profiles of assets assumed in official estimates are more realistic than the "radioactive decay" assumption, and that a suitable mixture of the official gross stock and capital consumption figures would recover, to an adequate approximation, the required service price aggregate implicit in the official depreciation assumptions.

3 EMPIRICAL RESULTS

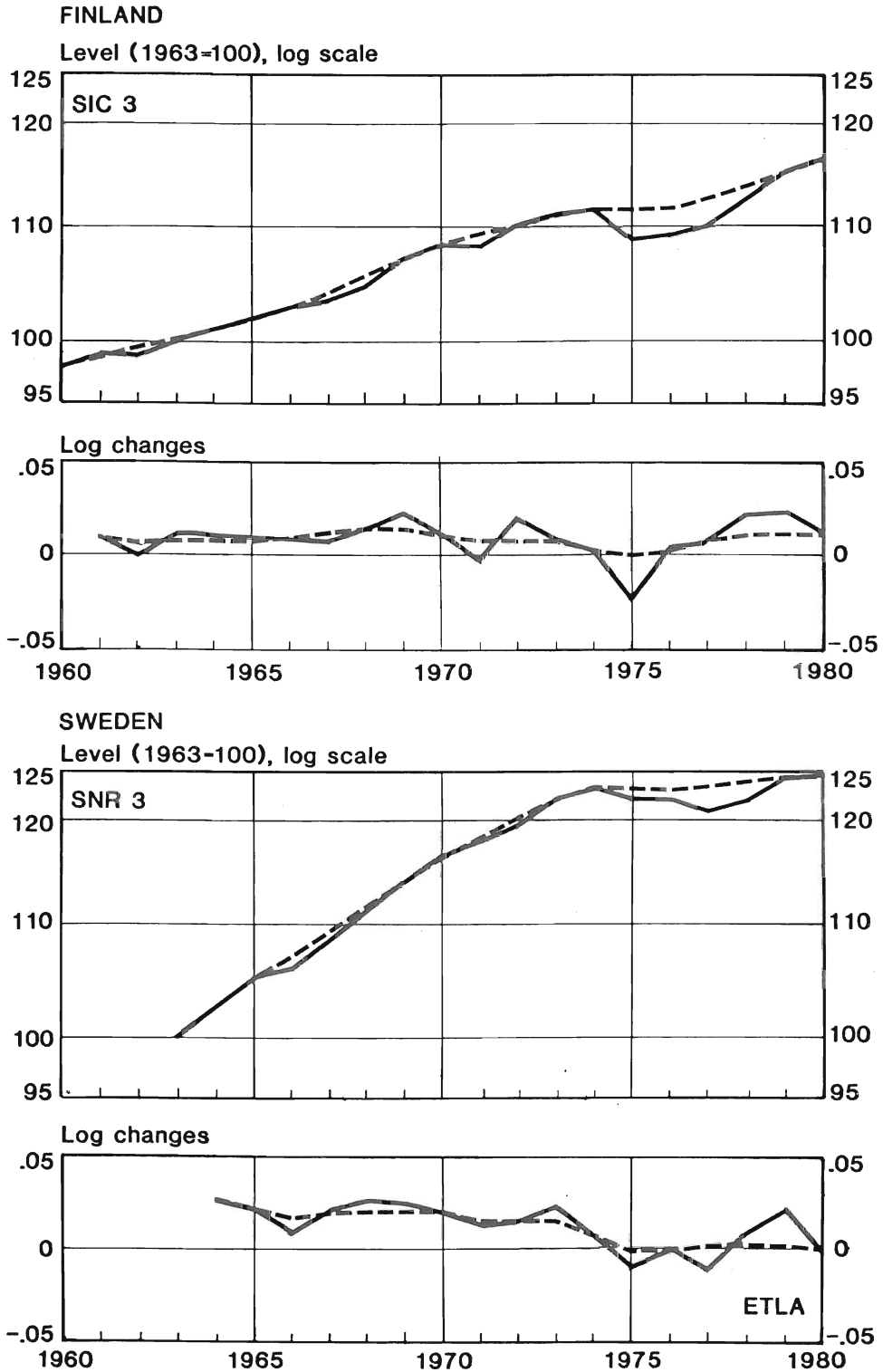
Turning now to the results of the productivity-measuring exercise, at the risk of oversimplifying they can be summarised thus: first, in line with experience elsewhere, it seems that most industries in both countries experienced some kind of slowdown or turning point in the mid-1970s; secondly, before the turning point, productivity growth had been faster in Sweden, but has subsequently been faster in Finland; and thirdly, the industrial pattern of productivity change is remarkably similar in both countries, both in the trend and in the variation around the trend. The first two points are illustrated in Figure 1, which shows the development of total factor productivity for manufacturing industry taken as a whole in the two countries. It can be seen from this diagram that up to 1974 the growth in productivity in manufacturing in both countries was steadily positive, and nearly twice as fast in Sweden as in Finland. Productivity actually fell in 1975 in both

countries, and quite sharply in Finland. Thereafter a recovery took place in Finland, but apparently not in Sweden – at least not until the end of the decade. The level of productivity in Swedish manufacturing industry was not much higher, if at all, in 1980 than it had been in the peak year of 1974.

There are, as might be expected, considerable differences in the productivity experiences of the various industries included within manufacturing, and of course the overall picture shown in Figure 1 is strongly influenced by the largest among the manufacturing industries. A different way of examining the data is to give equal weight to the ten component industries that make up manufacturing and to ask what is the productivity experience of the typical industry within manufacturing. This can be done by splitting the detailed dataset into systematic “epoch” and “industry” effects on the one hand, and unsystematic residuals on the other, using John Tukey’s method of repeated median extraction.³ We can then ask, for each epoch, what is the productivity experience of the typical or median industry. A diagram plotting the experience over time of the typical industry in the two countries is presented in Figure 2. It can be seen that this way of analysing the data results in broadly the same inferences as the foregoing Figure 1. Note that if the dip in productivity growth which occurred in both countries in the mid-1970s is ignored, Figure 2 implies that productivity growth in the typical Swedish industry started high but has been decelerating throughout the period. In Finland, by contrast, productivity growth started comparatively low in the early 1960s, but has been accelerating slowly since then and had overtaken the typical Swedish industry by the late 1970s.

The patterns that have been identified in the charts deserve some explanation, or at least rationalisation. First of all the dip in productivity growth that took place in the mid-1970s coincides with the first great oil recession. It is tempting to speculate that this may have been a causal factor in some way. A possible explanation along these lines is connected with the capital variable which, as always, is measured by imputation rather than direct observation. It is possible that the imputation procedure has something to do with the dip and the apparent subsequent slowdown. One of the strongest assumptions in the imputation is that the depreciation parameters, which include an allowance for normal obsolescence, are constant. But in a changing environment, with factor prices changing in particular, it is highly probable that there were in reality changes in obsolescence not taken into account in the officially measured figures. It seems likely that the massive increase in energy prices which occurred in 1973–74 made a non-negligible fraction of the capital stock obsolete. This could in part account for the widely experienced dip in the level of total factor productivity in the mid-1970s since no allowance for that obsolescence had been made in the estimates of the capital stock. As a consequence there appear to have been greater factor inputs in the mid-1970s than in actuality was the case, with a resultant decline in measured total factor productivity. In the cumulative productivity diagram of Figure 1 this appears as a downward step in the mid-1970s. The same error in the imputation for the capital stock can also bias the calculations of productivity growth for the subsequent period upwards as the volume of capital is now overestimated and hence, with a given investment volume, the

Figure 1 Annual level and log-changes of total factor productivity (solid lines) in manufacturing, and envelope curve of level and corresponding log-changes (dashed lines), 1960–80



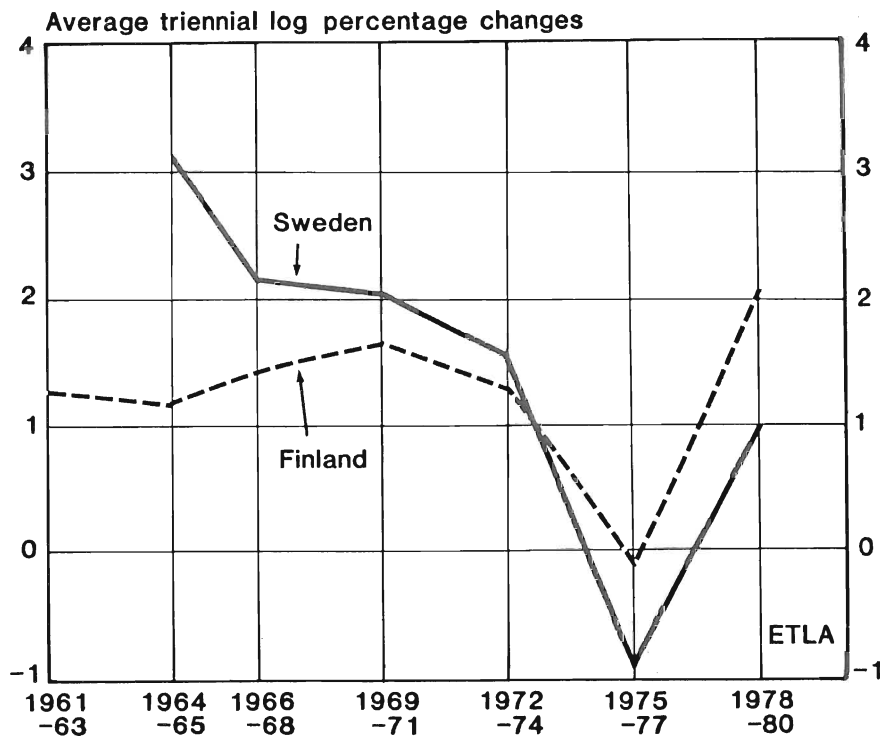
The "envelope", y_t , of the cumulative level index, x_t , is calculated from two iterations of the formula:
 $y_t = \max(x_{t-1}, x_t, (x_{t-1} + x_{t+1})/2)$

proportional rate of change of the capital stock is underestimated. This problem is inherent in the way that capital is estimated and there is no solution to it short of estimating total factor productivity and the flow of capital services simultaneously. In practice it implies that any average of productivity changes spanning the mid-1970s should be treated with caution.

The other interesting feature of the charts that could do with an explanation is the relative acceleration of productivity growth in the typical Finnish industry, and the corresponding slowdown in the typical Swedish industry. It is of course well known that the absolute level of labour productivity is considerably higher in Sweden than in Finland. In part this is because the Swedish worker has more capital cooperating with him in production, but in all likelihood another important factor is that Swedish industries taken as a whole are nearer to the "technological frontier" than their Finnish counterparts. Hence the potential for productivity improvement may simply be greater in Finland. Thus it might be expected that there would be some convergence in the level of productivity between the two countries, and this may be reflected in the long-run trends shown in Figures 1 and 2.

Figure 2 Systematic productivity changes, 1961–80

Average triennial log percentage changes



The log percentage change of X_t is defined as $100 (\ln X_t - \ln X_{t-1})$. It takes values close to the normal percentage change for small relative changes, but has the desirable property that sums and differences are consistent.

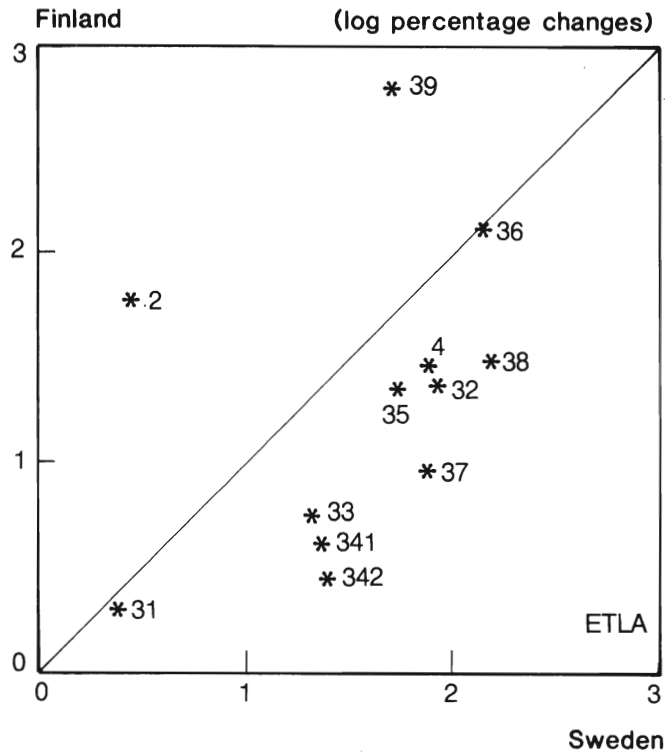
Two other factors should be acknowledged in the inter-country comparison. First is the fact that final aggregate demand was stronger in Finland than in Sweden in the latter half of the 1970s. This may have been due to the fact that, with oil imports organised on a basis of bilateral trade, the rise in energy prices had less of a direct deflationary impact, and also less of an indirect deflationary effect through the balance of payments. But whatever the source of the more stable aggregate demand picture, it implies that Finnish enterprises were faced with less adjustments and, since such adjustments are costly, with lower overall costs per unit of output. If this is so it might account for part of the measured typical difference in productivity movement in this period. The second factor, not unrelated to the first, is that government was more prone to shield industry from the effects of the prolonged weakness in aggregate demand in Sweden than in Finland. Hence in Sweden inputs were not adjusted as fully to the lower level of output.

Figure 3 compares the performances of the various industries between the two countries for the period as a whole. The plotted data show the mean annual productivity changes in each industry after removing the systematic epoch effects. With only two clear exceptions, productivity growth has tended to be faster in Swedish industries. The exceptions are mining and quarrying (SIC2) and "other manufacturing" (SIC39). For the remaining industries there is an evident correlation in their productivity experience between countries, and a certain degree of clustering of the forest-based industries: wood products (SIC33), paper and pulp (SIC341) and printing and publishing (SIC342). These features of correlation and clustering possibly reflect the differential "technological opportunity" between industries, which is to say that the technological basis for a given industry is the same whichever country it is located in, but it differs considerably between industries.

Technological opportunity is no doubt the most important factor behind the industrial pattern of productivity change depicted in Figure 3. It might be conjectured that associated with this, either as cause or effect, is the industrial pattern of research and development activity. The productivity data allow such a notion to be explored. Making use of a commonly applied model,⁴ it is possible to estimate the social rate of return to research and development capital. The model postulates a relationship between the "level of technology" and the stock of "research capital" in an industry. The stock of research capital is simply assumed to be representable by the sum of all past spending on research and development. Then, assuming the rate of return to this form of capital is the same in all industries, the model implies that there should be a linear relationship between the rate of productivity change and the ratio of research and development spending to the value of gross output. The slope of this linear relationship should then estimate the rate of return.

This model was estimated in a number of different versions using the productivity data supplemented by data on R & D expenditures. It was found that the rate of return to research and development capital implied by the model is rather high: of the order of 20 to 30 per cent per annum. This is actually in line with previous studies which mainly use data on United States industries. Moreover the present dataset seems to imply that the

Figure 3 Systematic productivity changes by industries, average 1961–80
log percentage changes



The industrial classification:	SIC
Mining and quarrying	2
Food, drink and tobacco	31
Textiles, clothing and leather	32
Wood products incl. furniture	33
Paper and pulp	341
Printing and publishing	342
Chemicals	35
Non-metallic mineral products	36
Metal industries	37
Engineering industries	38
Other manufacturing	39
Electricity, gas and water	4

rate of return is somewhat higher in Finland than in Sweden, though in both countries it seems to have been declining over time. These results are tentative and should not be taken too literally; to avoid this it is perhaps worth pointing out some caveats to this analysis. In the first place the results are contingent on a particular model, the assumptions of which are rather speculative. Secondly, the implied rates of return are not estimated with great accuracy, as indeed is implicit in the 10 percentage point range quoted above; and thirdly, the rates of return vary considerably depending on the precise specification of the estimating equation. However, supposing the high rates of return are taken to be correct, what might explain them? One factor of course is that R&D activity is very uncertain in outcome. Another is that the supply of R&D resources might be rather inelastic. Yet another is the fact that what is estimated is a social rate of return, which could be substantially in excess of the private rate of return because the results of R&D activity in the form of new knowledge or information are difficult to appropriate by the organisation incurring the cost of the activity.

NOTES

- 1 See G.J. Wyatt (1983): Multifactor productivity change in Finnish and Swedish industries, 1960 to 1980, ETLA B 38, Helsinki.
- 2 See W.E. Diewert (1976): "Superlative and exact index numbers and consistency in aggregation", *Econometrica*, 46.
- 3 See J. Tukey (1977): *Exploratory Data Analysis*, Addison-Wesley, Reading, Mass.
- 4 See Z. Griliches (1980): "Returns to R&D expenditure in the private sector" in J.W. Kendrick and B.N. Vaccara (eds.): *New Developments in Productivity Measurements and Analysis*, NBER Studies in Income and Wealth No 44, Univ. of Chicago Press.

APPENDIX

Productivity change in Finnish and Swedish industries 1961–80

mean annual log percentage change

(i) Finland

Period	F2	F3	F31	F32	F33	F341	F342	F35	F36	F37	F38	F39	F4
61–63	4.77	0.69	-0.03	1.07	-0.19	0.24	-0.73	3.11	2.37	1.14	1.57	3.19	2.05
64–65	2.27	1.02	0.16	0.77	1.13	0.93	-0.66	1.74	3.58	1.10	0.98	3.91	0.97
66–68	-0.25	0.95	0.44	1.75	1.40	0.55	-0.02	1.39	1.72	0.11	1.59	3.36	1.51
69–71	-1.82	1.03	0.57	1.56	1.13	0.19	2.02	1.65	3.58	-0.40	2.16	5.34	3.46
72–74	1.44	1.03	0.13	1.38	0.38	1.18	1.82	0.12	1.28	1.86	2.34	0.02	1.45
75–77	1.25	-0.41	-0.33	1.30	-1.30	-1.76	-0.20	-0.06	-0.51	-0.14	0.22	0.43	-0.69
78–80	3.22	1.93	0.97	1.50	2.48	2.74	0.70	1.30	2.54	2.87	1.28	3.05	1.18

(ii) Sweden

Period	S2	S3	S31	S32	S33	S341	S342	S35	S36	S37	S38	S39	S4
64–65	2.35	2.47	-0.19	2.15	2.58	3.08	2.25	3.18	4.21	3.18	3.16	6.09	2.90
66–68	2.82	1.88	0.54	2.89	1.64	1.50	-0.44	2.71	2.42	1.89	2.66	4.04	1.01
69–71	1.35	1.96	0.43	2.76	2.22	1.27	2.56	1.74	2.92	1.20	2.88	-7.40	2.53
72–74	0.39	1.47	0.13	2.15	1.05	1.82	0.31	1.79	1.80	1.78	1.63	1.79	0.35
75–77	-7.77	-0.67	-0.03	-0.13	-1.72	-2.79	2.24	-0.96	-1.29	-1.06	-0.50	2.13	1.21
78–80	1.67	0.95	-0.42	-0.02	0.34	1.48	-0.35	0.18	1.00	2.47	1.55	1.84	1.52

Note: For industrial classification, see the note in Figure 3

A COMPARISON OF THE EXTERNAL VALUES OF NORDIC CURRENCIES 1970–83

by Paavo Suni, ETLA

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1 INTRODUCTION

This paper describes the movement of the external value of four Nordic currencies: the Finnish markka (FIM) and the Swedish (SEK), Danish (DKK) and Norwegian (NOK) kronas. Especially the movements of the real external values of the Nordic currencies is depicted. Figures are drawn to reflect these movements from different perspectives. These Figures show the movement of real bilateral as well as effective exchange rates. The bilateral nominal exchange rates are relative prices of various currencies. Thus with the nominal exchange rates we are in fact describing the values of Nordic currencies in the foreign exchange markets – and, on the other hand with the real exchange rates, the competitiveness of the Nordic countries in the goods markets.

The paper starts with a short essay in which these various aspects of the external value of a currency are described and the numerous problems met in this kind of comparison are highlighted. In section 3 the definitions used in the calculation of various indices are introduced, and the movement of the real external values of the currencies concerned is analysed both on a yearly and on a monthly basis. In section 4 some conclusions are drawn about the development of the Nordic currencies in the 70s and early 80s.

2 SOME ASPECTS OF THE EXTERNAL VALUE OF A CURRENCY¹

2.1 General Considerations

During the period of fixed exchange rates, the external value of any one currency was often announced as a relation to the U.S. dollar. In the late 60s and early 70s, the rise of the Eurocurrency market, the increased mobility of capital and the large and persistent deficit in the U.S. balance of payments contributed to the breakdown of the fixed exchange rate system.

The measurement of the external value of a currency by its relation to the dollar was not strictly correct during the fixed rates, either, but during the flexible rates it became impossible because the relative prices of various currencies began to fluctuate widely.

The external value of a currency is often measured with the so-called effective exchange rate, which is a weighted average of bilateral exchange rates. It is possible for a central bank to stabilize fluctuations in the nominal effective exchange rate by intervening in the foreign exchange market. If the aim is to keep the effective exchange rate constant it is said that the central bank pegs the effective exchange rate of the country. The bilateral exchange rates may vary a lot in spite of pegging, because a small country cannot affect any bilateral exchange rates between third countries. Finland, Sweden and Norway adopted the pegging to a basket in the 70s.² Denmark, however, has cooperated mostly with other European countries, at first in the currency “snake” and later in the European

Monetary System (EMS). In the EMS the countries have set the central rates against the European Currency Unit (ECU), which means that the EMS-currencies can fluctuate bilaterally only within certain limit (usually $2\frac{1}{4}\%$) against each other. Thus the stability among the participating currencies increases and the fluctuations against other currencies increase.

The construction of the effective exchange rate index raises many problems. In measuring the effective exchange rate, we have to choose³

- the list of currencies
- the weighting system and the type of average
- the base year
- the index formula
- the deflator to be used to calculate the real effective exchange rates

All these factors affect the behaviour of the “external value” of the currency as measured by the index in question. The list of the bilateral exchange rates included is usually chosen according to a formal criterium. When we choose the weighting system, we also choose, e.g., the market places. For example the export weights stress bilateral competition in our export markets without taking account of, e.g., competition in domestic markets. The base year can be selected more flexibly, in accordance with the aims of presentation.

In terms of nominal bilateral and effective exchange rates, we can describe the course of the value of a certain currency in the foreign exchange markets. When we compare the real effective exchange rates of Nordic countries, we are, in a sense, comparing the development of price competitiveness by comparing the real prices of baskets in the commodity markets of various countries.

2.2 The Interpretation of the Real Exchange Rate

The interpretation of the measures of the real external value of a currency is complicated. The real effective exchange rate is closely related to the concept of the price competitiveness and also to the doctrine of the purchasing power parity (PPP). In the short-run country's competitiveness is impaired if its export prices in the world market rise faster than the prices of other tradable goods (importables), with the nominal exchange rates unchanged. Other goods are substituted for the goods of the country, and the country will lose market shares. This is the demand side perspective to price competitiveness. This example demonstrates that an exogenously determined improvement in the terms of trade may also have harmful consequences.

A country may also lose some of its competitiveness if exports are sold in the world market at unchanged relative prices but wages and consumer prices rise faster than in the rest of the world. In this case market shares are lost because the domestic

production of tradable goods becomes less profitable at given world market prices. This is the supply side perspective to price competitiveness.

This distinction is important because it gives a clue about how to interpret differences between various measures of a real exchange rate.⁴ The demand side perspective emphasizes the relationship between the terms of trade and the real exchange rate, whereas the supply side perspective emphasizes the relationship between competitiveness and the profitability of export industries. The supply side perspective has traditionally been dominant in the Nordic economic policy discussion.

These two kinds of measures of a real exchange rate need not be in conflict with each other. A rise in the world market prices of our exports relative to those of other tradable goods may, because of demand pressure on wages in the labour market, result in an increase in our unit labour costs relative to those in other countries. On the other hand, given a sufficient market power of our export industries, an exogenous increase in domestic costs may lead to a rise in our export prices as firms pass these cost increases on to prices, in order to maintain profitability.

Very few countries are sole producers of their respective export products. None of the Nordic countries are in such a position, although their exports are very specialized according to both countries and commodities (see the Special study 6 by Horwitz). Many firms, however, are able to control the market prices of their products, to some extent, at least temporarily. This may be because of certain distinctive characteristics of their products or because production is 'tailored' according to the buyer's requirements. If a country predominantly produces these kinds of goods, or tradables I as they are called by McKinnon (1979, pp. 74–75), it is more likely that domestic costs relative to those in other countries dominate the fluctuations in the real exchange rate with unchanged nominal exchange rates.

Other types of tradable goods, called tradables II by McKinnon, are more homogeneous without any distinctive country specific characteristics. Consequently, their prices tend to fluctuate together with the fluctuations of supply and demand in the world market. If these types of goods form a major proportion of the country's production, it is likely that an exogenous increase in domestic costs will lead to the deterioration of profitability and, hence, to a loss of market shares. On the other hand, if there is excess demand for tradables II in the world market, this pulls up the relative price of our goods, and our firms will receive extra income. Our demand side competitiveness, however, deteriorates, and this results in a decrease in the volume of our exports, which erodes part or all of the gain brought about by the price increase. If the gain also pulls wages up, and if, which is likely, the relative price of these goods returns to its earlier level once the boom is over, then our export firms find themselves in a situation where the supply-side competitiveness has worsened.

In the long run, according to the popular doctrine of the PPP the equilibrium real exchange rate is constant because of, for example, commodity arbitrage. Real

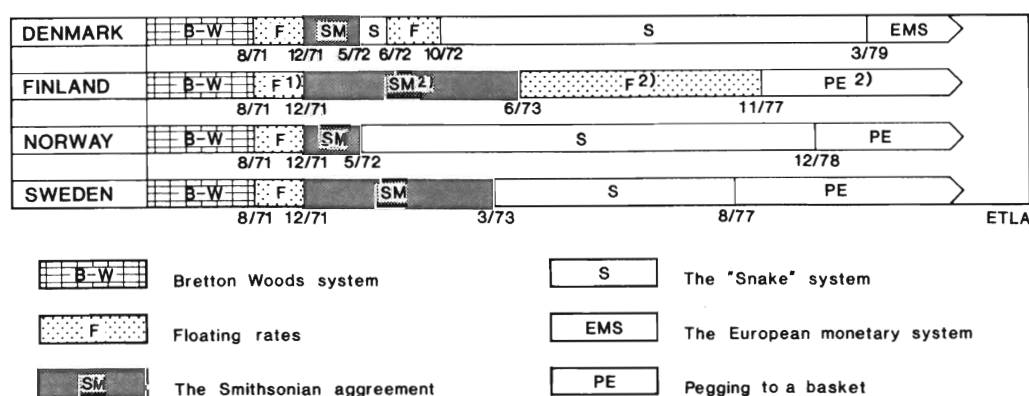
exchange rate indices are often used as indicators of pressures in the foreign exchange markets during the fixed exchange rate period, e.g., in Finland in the 40s and 50s (Suvanto 1978 pp. 225–226). According to Katseli-Papaefstratiou (1979 p. 27), the PPP doctrine is valid only during purely monetary disturbances in the economy and even then very restrictive assumptions are needed. In any case, real shocks change the long run equilibrium level of the effective exchange rate. In the case of real shocks, deviations from the PPP may be large and, in the short run, monetary shocks may also cause large fluctuation (overshooting) in real exchange rates under flexible rates. Frenkel (1981) argues that the PPP only reflects the underlie economic circumstances, instead of being caused by them. The wide experience gained of large fluctuations in exchange rates also suggests that the PPP doctrine cannot be used as a theory of short-run exchange rate determination. In any case the PPP can be thought of as a long-run real equilibrium exchange rate, which is constant if there are no real shocks in the economy.

3 THE MOVEMENT OF THE EXTERNAL VALUE OF NORDIC CURRENCIES IN THE 70S AND EARLY 80S

3.1 The Development of the Exchange Rate Regimes

In the early 70s many changes occurred in the Nordic exchange rate systems. As can be seen from Figure 1, the Nordic countries, except Denmark have sooner or later chosen the system of pegged effective exchange rates. As a matter of fact, in Finland the pegging system was already adopted in 1972, and this practice was confirmed by law in 1977 (Puro p. 21). Sweden adopted it in 1977 and Norway in 1978, after a lively debate on the advantages of joining the EMS or staying outside it and adopting the pegging system (Skånland 1983 p. 59–60). Denmark chose cooperation with the European monetary system (EMS) in March 1979.

Figure 1 The Exchange Rate Regimes of the Four Nordic Countries in the 70s



¹⁾ In practice the Bank of Finland kept the USD parity nearly constant.

²⁾ The pegging system was already unofficially adopted in Finland in 1972.

Source: See appendix 2

After the breakdown of the Bretton Woods agreement system in 1971, Finland kept the USD/FIM parity unchanged until June 1973, except for a few small devaluations. Other Nordic countries allowed their currencies to appreciate against the USD. As a consequence the Finnish markka depreciated against other Nordic currencies and the DEM while other Nordic currencies nearly kept their former parities against each other and the DEM.

The situation in the foreign currency markets was new and unstable, and during the unsuccessful Smithsonian agreement period the six European countries created the currency "snake" in April 1972 to stabilize their exchange rates. Denmark and Norway joined the "snake" in May 1972 and Sweden in March 1973. Finland tried to peg the value of the markka against a currency basket. This meant in practice that the value of the Finnish markka followed the value of the snake currencies because of their dominating position in the basket.

Norway left the "snake" in December 1978 and Denmark joined the successor of the "snake", the European Monetary System (EMS), in March 1978. During the last years of the "snake" Denmark did not follow the exchange rate policy measured of other Nordic countries and has not followed them during the EMS years either, and thus the parities between the DKK and other Nordic currencies have fluctuated a lot since 1977. Denmark has mainly followed the DEM, excluding the realignments within the EMS which have meant the depreciation of the DKK vis-à-vis the DEM. The wild behaviour of other Nordic currencies against the DEM is mainly based on the administrative changes in the value of these currencies but also on the sharp strengthening of the U.S. dollar from the end of 1980 until the autumn of 1983.

3.2 The Measurement of the External Value of a Currency

The nominal bilateral exchange rate of our currency vis-à-vis a foreign currency is denoted by S_{hi} and is defined as follows:

(1) one unit of our currency $h = S_{hi}^t$ units of a foreign currency of country i in period t

The nominal effective exchange rate is defined so that it tells us the price of one unit of our currency in terms of other currencies. With the exception of central bank indices and IMF's effective exchange rates, all indices are defined as Laspeyres indices according to (2):

$$(2) I^t = \sum_i w_i (S_{hi}^t / S_{hi}^0)$$

I^t = The nominal effective exchange rate index

w_i = The weight for the nominal bilateral exchange rate index,

The real bilateral exchange rate is defined as the nominal bilateral exchange rate adjusted for the inflation cumulated from a given period;

$$(3) R_{hi}^t = \left(S_{hi}^t / S_{hi}^0 \right) \cdot \left(P_h^t / P_i^t \right)$$

P_h^t, P_i^t = The price indices of countries h and i in period t, the base period is 0.

The real effective exchange rate is defined so that it tells us the price of a certain basket of our goods in terms of the baskets of our competitors' goods.

$$(4) RI^t = \sum_i w_i \cdot R_{hi}^t$$

RI^t = The real effective exchange rate

In all indices the base year is 1980 and all the calculated effective exchange rates are Laspeyres indices. The bilateral exchange rates are calculated from the dollar quotations of different currencies as crossrates. Nominal effective exchange rates have been calculated from bilateral exchange rates with four different weighting system. Central bank indices for Sweden and Norway have been calculated by using the published trade weights.⁵ The IMF's MERM-weighted indices were obtained from the International Financial Statistics (IFS). The export weights are calculated for each country from OECD's foreign trade statistics, where the trade flows are measured in dollars. The commodity market weights are calculated at the two digit SITC-level on a dollar basis. The commodity market index tries to take account of competition in each of the commodity markets in the world, each weight being calculated from formula (5):

$$(5) w_{ij} = \frac{\sum_k (x_i^k / \sum_j x_j^k) \cdot (x_j^k / \sum_{j \neq i} x_j^k)}{\sum_{j \neq i} w_{ij}} = 1$$

x_i^k = the value of exports of country i to the world by different two digit SITC-categories (k), in USD (i=1..4, k=1..64)

j = 18 OECD countries

The commodity market index can be calculated by using different geographical markets, e.g., instead of exports to the whole world we could take into account exports to Europe only.⁶ It would also be useful to be able to take the geographical distance somehow into account in the calculation. Transport costs are certainly an important trade barrier, especially in the case of distant countries, but their importance varies a lot according to the sort of commodity group considered. They are of special interest in the case of tradables II – in the case of homogeneous commodities.

The real effective exchange rates are calculated by using three different deflators: wholesale prices (REXP, RMAR), export unit values (EUV) and unit labour costs (ULC). Export unit values and unit labour costs are used in order to highlight demand – and supply-side competitiveness. As weighting schemes we have used export weights (REXP), commodity market weights (RMAR) and MERM-weights (XUV, ULC).⁷

3.3 Changes in the External Values of Nordic Currencies from 1971 to 1982

Table 1 presents a comparison of the external values of the Nordic-currencies from 1971 to 1982, in nominal and real terms. All the currencies, except the Norwegian krone, have depreciated over this period nominally. The external value of the Finnish markka has risen in real terms according to all the measures. Especially from the point of view of the demand side, competitiveness as measured with relative export unit values has decreased. The relative export prices of Finnish commodities have increased fastest over these years (17.9 %) in common currency, compared with other Nordic countries. Both the unit labour costs and relative export unit values have simultaneously risen. In the Swedish case, competitiveness has improved in terms of all the measures, except the demand side measure. In Denmark the relative wholesale prices have risen and the other two measures have fallen. Especially supply side competitiveness has improved markedly in Denmark from 1971 to 1982. In Norway all measures indicate an appreciation of the external value of the Norwegian krone. The relative labour costs increased fastest (about 29 %) in Norway, compared with other Nordic countries.

These indicators should be read, however, with caution. First, it should be remembered that we have compared nominal and real exchange rates for 1982 to those for 1971, and there is no justification for the assumption that 1971 is an appropriate year of reference, in the sense that exchange rates and the competitive position were then in equilibrium. Indeed, there is reason to believe that this was not the case. The USD was probably overvalued against the West European currencies in 1971, and the development since the breakdown of the Bretton Woods – especially the nominal depreciation of the USD

Table 1 Nominal and real effective exchange rates of Nordic currencies

Nominal appreciation from 1971 to 1982				
According to index	FIM	SEK	DKK	NOK
Central Bank ¹	-16.9	-16.8	- 7.1	18.8
IMF ⁴	-10.8	-15.3	- 6.7	8.3
Export weights	-11.0	-14.8	- 4.8	27.7
Market weights	- 7.6	-16.2	- 7.3	16.3
Real appreciation from 1971 to 1982				
Relative wholesale prices ²	11.8	- 3.6	5.0	0.3
Relative wholesale prices ³	18.3	- 0.9	5.9	6.5
Relative unit labour cost ⁴	21.8 ⁵	- 9.2	-16.3	29.3
Relative export unit values ⁴	17.9 ²	+ 6.3	- 3.8	0.6

¹ Trade weights

² Export weights

³ Commodity market weights

⁴ Merm weights, manufacturing industry

⁵ Inverse of ETLA's competitiveness indicator (Sihtola 1978), import weights, manufacturing industry

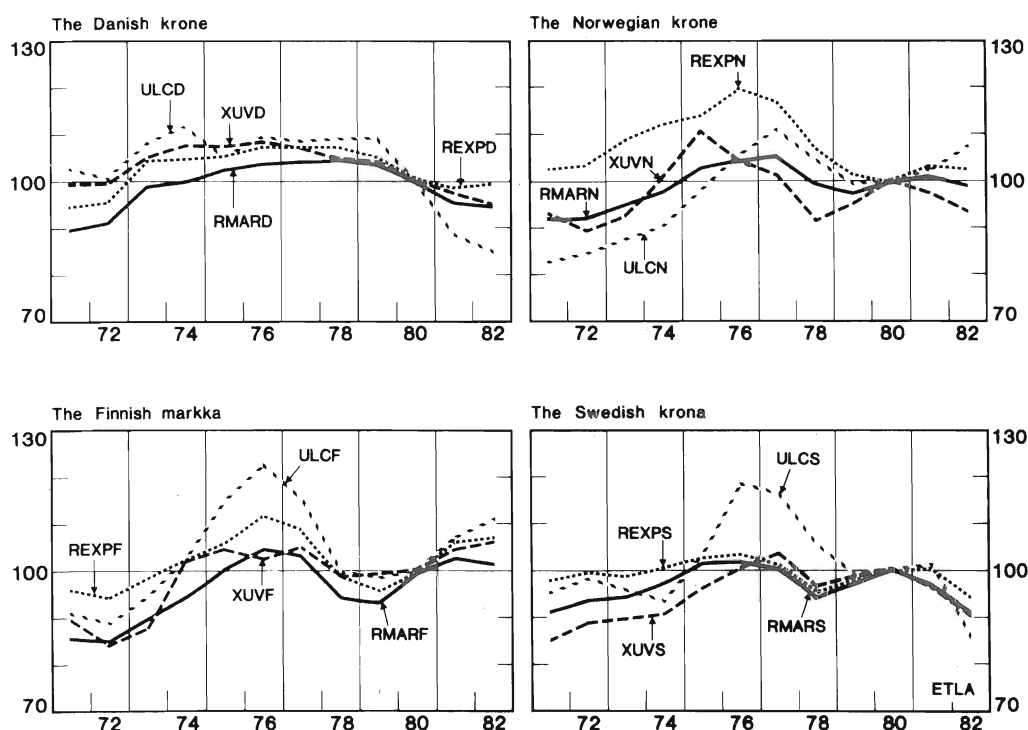
Source: see appendix 3

against the major European currencies from 1971 to 1973 – brought the real exchange rates more into balance, also. However, the USD appreciated again during 1980–83. Secondly, during the floating exchange rate period wild, short-term fluctuations have taken place in nominal bilateral exchange rates, which, of course, also affect real effective exchange rates. Therefore on the basis of a measure of the real exchange rate for a given year, we should not draw conclusions, since we cannot be sure whether or not this has been temporarily out of trend.

3.4 The Development of the Competitiveness in the Nordic Countries

In Figure 2 the course of the real effective exchange rates is described on a yearly basis with four indices. The monthly description of the behaviour of the real effective exchange rates in Figure 3 is done with two indices: an export weighted index (REXP) and a commodity market weighted index (RMAR). In the Finnish case, three measures show the same general pattern of a rapid real effective appreciation from 1972 to 1976 and a rapid depreciation thereafter until 1978. However, there are interesting differences

Figure 2 The real effective exchange rates of Nordic currencies 1971–82
Index, 1980=100



Source: See appendix 3

between the measures. Using the measures based on export prices it is seen that the appreciation took place mainly in 1974. This was the time of the first oil shock when the terms of trade of most Western countries deteriorated considerably, whereas in Finland, by contrast, then improved owing to a rapid rise in the prices of forest industry products, which accounted for 57 per cent of Finnish exports outside the CMEA countries in 1974. These products belong mainly to the tradables II category, to use the terminology introduced in Section 2. Exports of Finland's major trading partners mainly consist of manufactured goods, or tradables I. When the prices of major Finnish exports rose, relative to the prices of exports of other industrialized countries, Finland's demand side competitiveness deteriorated. This was already reflected in 1975 as a 17 per cent decline in the volume of exports (a 28 per cent decline in exports of forest industry products). Domestic price and wage inflation had started to accelerate even in 1973 and continued to accelerate through 1975–76. This is seen in Figure 2 as a rapid rise in the real effective exchange rate of FIM measured by relative unit labour costs. The deterioration of supply side competitiveness continued after demand side competitiveness had already started to improve slightly in 1976, and this trend was not reversed until the deep recession had begun to bite into inflation and when the FIM had been devalued twice in 1977. Since then the relative export unit values have been quite stable but the relative unit labour costs started to rise again in 1980.

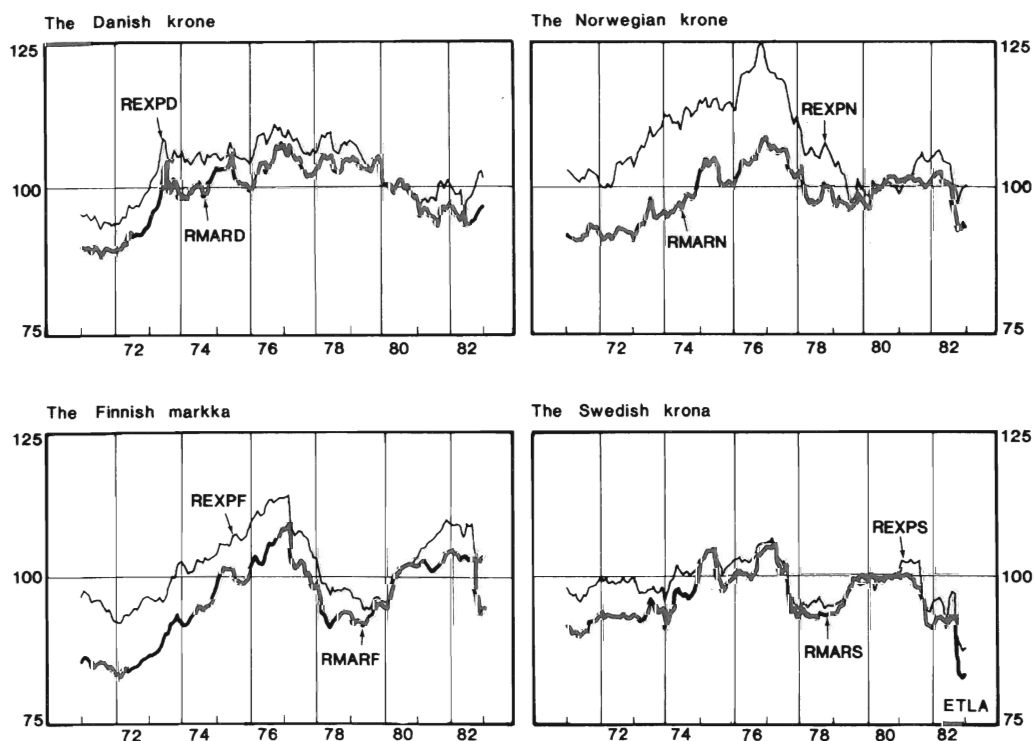
A comparison between Finland and Sweden is interesting. Like the FIM, the SEK was appreciating effectively in real terms during the period from 1972 to 1976, as measured by relative wholesale prices or by relative export prices, but unlike the FIM, it depreciated in real terms in 1973 and 1974, as measured by relative unit labour costs. In other words Sweden, like Finland, was losing demand side competitiveness of her exports in those critical years, but she was gaining in supply side competitiveness. Supply side competitiveness was then impaired very rapidly in 1975 and 1976, but it was almost restored over the period 1977–79. At the end of 1981, Sweden gained from the devaluation if measured with relative export unit values or commodity market weighted wholesale prices, but lost slightly in terms of supply side competitiveness. With the devaluation of 1982, Sweden gained a lot according to all the measures.

In Norway all indices indicate a real appreciation of the Norwegian krone 1972–75. All other indices, except the relative export unit values (oil excluded) and the export-weighted index rose for two years. According to Skånland, the appreciation of the Norwegian krone in the snake during that time was the result of a conscious policy designed to reduce inflation. Norway did not follow the exchange rate arrangements of other countries, and so the NOK appreciated about 10 per cent between the first quarter of 1973 and the first quarter of 1977. Only 5 per cent of this was due to revaluation of the krone while 11.5 per cent was due to price movements. The 5 per cent revaluation was effected in November 1973 because of the increased prospective oil earnings due to the first oil shock. (Skånland, 1982 p. 58). Thus the weakening external value of the Norwegian krone was mainly due to Norwegian economic policy. Later on, the policy was changed and during 1977–79 the NOK depreciated back to the level of the beginning of the 70s, as a result of the devaluations of 1977 and 1978 and a general

price and wage freeze that was in force from September 1978 to the end of 1979. After that the cyclical variation seems to have been more limited. Demand side competitiveness thus improved by about 17 percent during 1976–78. The export weighted index also markedly dropped during 1977–80, by about 16 per cent altogether. In 1982 all yearly indices, except relative unit labour costs, slightly fell because of formal devaluation(s).

The behaviour of the real external value of the Danish krone differs from that of the others currencies concerned. In the Danish case there is not so much cyclical fluctuation as in the other cases. During 1974–79 all measures were quite stable, while in 1973 DKK appreciated, and 1980–81 were years of depreciation judging by all measures. Supply-side competitiveness has improved a lot, about 21 per cent, during 1979–82. Demand side competitiveness has, in addition, improved since 1976 by about 12 per cent.

Figure 3 The real effective exchange rates of Nordic countries 1971/01–1983/01
Index, 1980:1–12=100



Source: See appendix 3

4 CONCLUSIONS

The experience of the 70s and early 80s clearly shows that both nominal and real exchange rates have been volatile. Especially the real bilateral exchange rates of the Nordic currencies against the DEM show a cyclical pattern around the base year level.

Consideration of the real effective exchange rates reveals that especially Finland's and Sweden's supply-side competitiveness was impaired in the mid-70s. Following stringent economic policies, supply-side competitiveness was almost restored after two years in Finland and after three years in Sweden. Since 1980, Finland's supply-side competitiveness has had a tendency to deteriorate. But Sweden gained a lot especially from the 1982 devaluation according to all the annual measures employed. On a monthly basis, the competitiveness of industry has fluctuated more in Finland than in Sweden. The price competitiveness of Sweden is at an unusually good level after the 1982 devaluation.

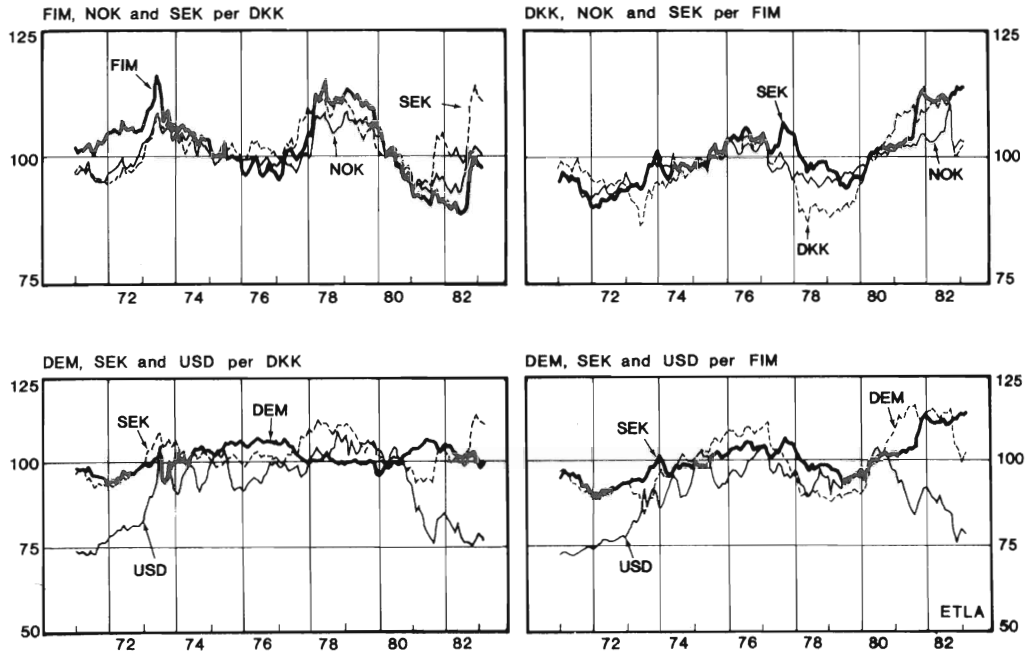
In Denmark all of the competitiveness measures have been remarkably stable, but they were well above the 1980 level during the "snake" cooperation. On a yearly basis, the competitiveness of Danish industries has had a tendency to improve since 1980. In Norway the mid-70s were also bad period for competitiveness, as it was in the other Nordic countries. During 1973–75 both demand side and supply side price competitiveness worsened owing to deliberate policy and to increasing prospective oil earnings. Supply side competitiveness continued to deteriorate during the following two years, but demand side competitiveness improved during 1976–78. The measures started to diverge again in 1981–82. Short-term fluctuation in the real effective exchange rates as measured with relative wholesale prices have been quite stable in Norway since 1979.

The charts clearly show that the PPP – the constancy of the real exchange rate – does not hold in the short run in the Nordic countries. However, in all these countries there have been rather long periods, it seems, during which the short term rates have fluctuated fairly little. Especially, in Denmark the period 1973–79 in the snake appears surprisingly stable. Since Denmark joined the EMS, the DKK has depreciated and fluctuations have continued to be quite slight. The real effective exchange rate of the Swedish krona has been quite stable, except in the years 1977, 1981 and 1982 of great devaluations.

Real exchange rates have shown a tendency to return to the level determined by the underlying inflation differentials. Even though various measures of the real exchange rate generally move together, there are considerable divergencies between them. Therefore, no single measure can be taken as an accurate indicator of the real external value of a currency and, hence, as a guide for exchange rate policy.

Appendix 1 A The real bilateral exchange rates of the Danish krone (DKK) and the Finnish markka (FIM) 1971/01 – 1983/01

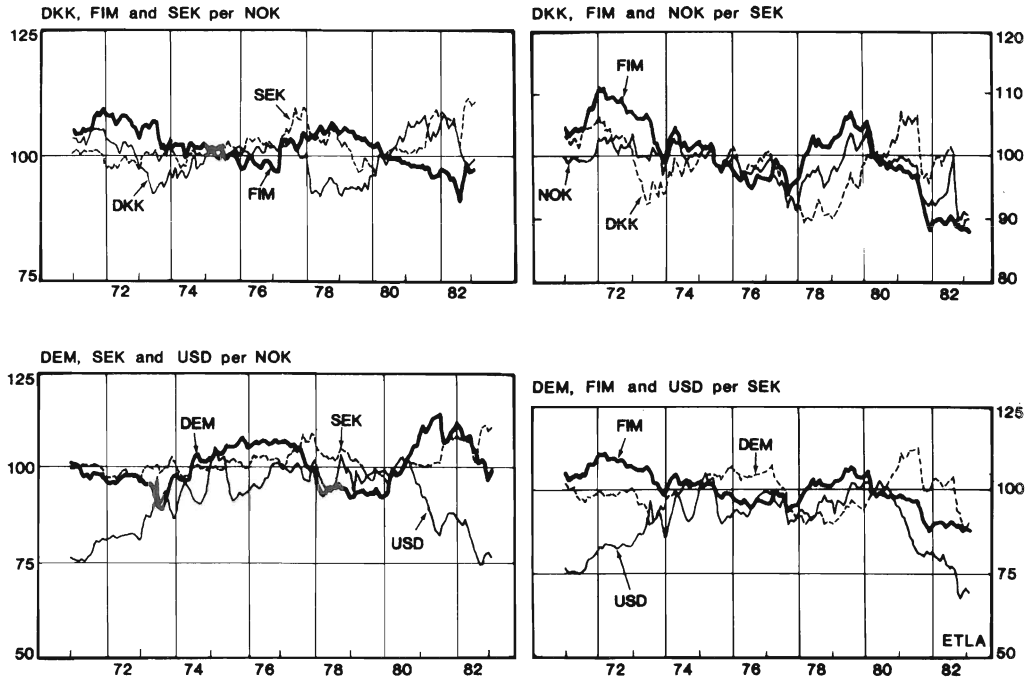
Index, 1980: 1–12=100



Source: See appendix 3

Appendix 1 B The real bilateral exchange rates of the Norwegian krone (NOK) and the Swedish krona (SEK) 1971/01 – 1983/01

Index, 1980: 1–12=100



Source: See appendix 3

Note: Scales differ slightly

APPENDIX 2 Main administered exchange rate changes 1971–83 – an overview

Nordic countries

1971

15 Aug.

20 Aug.

18 Dec. According to Smithsonian agreement Danish krone is revalued 7.45 %, Finnish markka is revalued 2.44 %, Norwegian krone devalued 7.49 % and Swedish krona revalued 7.49 % against U.S. dollar from May 1 1971.

1972

24 Apr.

1 May Denmark joins snake

23 May Norway joins snake

23 June

27 June Denmark withdraws from snake

10 Oct. Denmark rejoins snake

1973

22 Jan.

12 Feb. Swedish krona and Finnish markka devalued by 5 %

19 Mar. Sweden joins snake

4 July Bank of Finland abandons margins for U.S. dollar

17 Sep.

16 Nov. Norwegian krone revalued by 5 %

1974

19 Jan.

21 Mar.

1975

10 July

1976

15 Mar.

The rest of the world

Dollar convertibility suspended: dollar depreciates against sterling and most other currencies

Two-tier French franc rates established

Smithsonian agreement, established parities with wider ($\pm 2 \frac{1}{4}$ %) margins, entailing U.S. dollar devaluation against all currencies other than Canadian dollar (still floating)

European "snake" agreement by six European Community countries comes into effect

United Kingdom and Ireland join snake

United Kingdom and Ireland float their currencies

Swiss franc floated

U.S. dollar devalued by 10 %, yen floated commercial lira floated (two tier market had been established in Jan)

German mark revalued 3 % against gold snake currencies abandoned margin for U.S. dollar

Dutch guilder revalued by 5 %

French franc floated

Commercial French franc withdrawn

French franc rejoins snake

French franc floated

18 Oct.	Danish krone devalued by 4 % Swedish and Norwegian kroner devalued by 1 %	German mark revalued by 2 %
1977		
4 Apr.	Danish and Norwegian krone devalued by 3 % Swedish krona devalued by 6 %	
5 Apr.	Finnish markka devalued by 5.5 %	
29 Aug.	Danish and Norwegian krone devalued by 5 % Sweden leaved snake and devalued by 10 % and krona was pegged to a trade weighted basket of certain currencies	
1 Sep.	Finnish markka devalued by 4 %	
28 Oct.	Pegging system of Finnish markka since 1972 put into law by the currency act	
1978		
12 Feb.	Norwegian krone devalued by 8 %	
17 Feb.	Finnish markka devalued 7.5 %	
16 Oct.		German mark revalued by 4 % Dutch guilder and Belgian (and Luxembourg) franc revalued by 2 %
1 Nov.		Co-ordinated stabilization measures by U.S., Japan, West Germany and Switzerland
11 Dec.	Norway withdraws from snake, krone being pegged to a trade-weighted basket of currencies	
1979		
13 Mar.	Denmark joined EMS	Snake replaced by European Monetary System (EMS), with a $\pm 1 \frac{1}{8}$ band and eight participating countries: Ireland, Belgium, Luxembourg, Denmark, West Germany, Italy, the Netherlands and France
21 Sep.	Finnish markka revalued by 2 %	
24 Sep.	EMS realignment: Danish krone devalued by 3 %	EMS realignment: German mark revalued by 2 %
30 Nov.	Danish krone devalued by 5 %	
1980		
25 Mar.	Finnish markka revalued by 2 %	
1981		
23 Mar.		Lira devalued by 6 %
14 Sep.	Swedish krona devalued by 10 %	
4 Oct.		EMS realignment: German mark and Dutch guilder revalued by 5 $\frac{1}{2}$ %. French franc and lira devalued by 3 %
1982		
22 Feb.	Danish krone devalued by 3 %	Belgian and Luxembourg franc devalued by 8.5 %

6 Sep.	Norwegian krone devalued by 3 %	
6 Oct.	Finnish markka devalued by 4.3 %	
8 Oct.	Swedish krona devalued by 16 %	
11 Oct.	Finnish markka devalued by 6 %	
1983		
21 Mar.	Danish krone revalued by 2.5 %	EMS realignment: German mark, Danish krone, Dutch guilder, Belgian and Luxembourg francs revalued 5.5, 2.5, 3.5 and 1.5 % respectively. French franc, Lira and Irish pound devalued by 2.5, 2.5 and 3.5 % respectively
1984		
1 Jan.	New effective exchange rate index for Finnish markka brought into use. Bank of Finland excludes the Soviet rouble from the currency basket and the method of calculations is also changed.	

APPENDIX 3 THE DATA

The data was been taken mainly from the International Financial Statistics (IFS).

1. Bilateral exchange rates

Bilateral nominal exchange rates against the dollar (IFS: serie rf) were used as the basic series. Other bilateral nominal exchange rates were calculated as cross rates from these dollar quotations.

The real bilateral exchange rates are deflated by wholesale prices (IFS: serie 63)

2. Effective exchange rates

A. The nominal effective exchange rates are the following:

a) Central bank indices with trade weights:

Denmark: Det Økonomiske råd (The Danish Economic Council)

Finland: Bank of Finland Monthly Bulletin

Norway: The central bank index is calculated with the aid of published weights. For the years before the pegging system, the first published weights have been used.

Sweden: Same as Norway

b) IMF's effective exchange rates with MERM-weights are taken from IFS (serie amx)

c) Export weighted indices.

In the case of Denmark, Norway and Sweden there are 15, and in the case of Finland 11 most important export countries.

d) Commodity market weights

For all countries, 17 competitors in the commodity markets are taken into consideration.

B. Real effective exchange rates

a) Relative wholesale prices

Export weighted as 2Ac but deflated by wholesale prices. Commodity weighted indices as 2Ad but deflated by wholesale prices

b) Relative unit labour costs

Finland: ETLA's competitiveness indicator, import weights (see Sihtola 1978)

Other Nordic countries: IMF's Relative unit labour costs. MERM-weights (IFS)

c) Relative export unit values

Finland: as 2Ac but deflated by export unit values total industry (IFS:74)

Other Nordic countries: IMF's relative export unit values, MERM-weights (IFS)

NOTES

- 1 This chapter draws heavily on the paper by Suvanto and Pietarinen (1981).
- 2 See Appendix II.
- 3 For a general discussion, see Rhomberg (1976), see also Vartia (1976) and Vartia-Vartia (1980).
- 4 This distinction is taken from Cardoso and Dornbusch (1980).
- 5 The Bank of Denmark index was obtained from The Danish Economic Council (Det Økonomiske Råd in Denmark).
- 6 In Finland indices of the same kind are used in income agreement negotiations as indicators of competitiveness.
- 7 MERM-Multilateral Exchange Rate Model (see Artus-McGuirk, 1981). In the of Finland, XUV is calculated with export weights and ULC with import weights.

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EXPORT PERFORMANCE OF THE NORDIC COUNTRIES 1965–82

A CONSTANT-MARKET-SHARES ANALYSIS

by Eva Christina Horwitz, IUI

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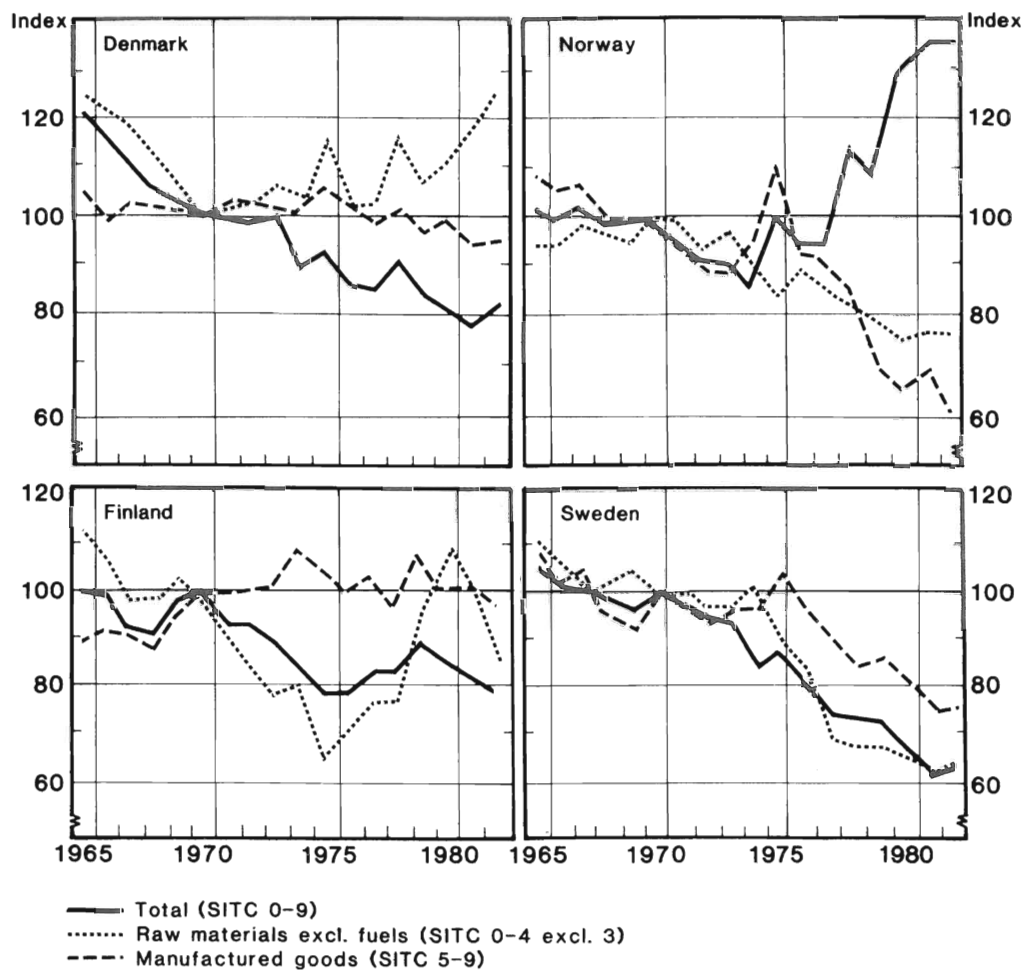
1 INTRODUCTION

This paper describes and compares the export market shares over the 1965–82 period for the four Nordic countries; Denmark, Finland, Norway and Sweden. We measure export performance as the market shares in imports to a selection of OECD countries and bring out the differences between the Nordic countries in commodity specialization and market dependencies.

By applying a so called constant-market-shares technique we investigate to what extent the change in the Nordic share in world trade during the 70s, roughly illustrated by Figure

Figure 1 Nordic countries shares of imports to the OECD market 1965–82³

Index 1970=100



1, can be explained by the particular commodity or country composition of that export. The analysis is based on yearly figures covering the 1965–82 period of each country's exports to 14 OECD countries. A detailed breakdown into commodity groups has been used.

The justification for a market shares analysis along these lines as compared to a measure of market shares from more aggregate figures is that a country's commodity composition of exports influences the results of conventional market shares calculations. A country whose exports increase less than the average increase in world trade can lose market shares in overall trade even if it doesn't lose in the markets for its own exports. In the same way a country that has a geographical concentration of exports to slowgrowing markets might also increase its exports less than the average without losing market shares in a stricter sense.

We compare the export performance of the four Nordic countries starting from the assumption that they should show similarities in export performance. However, at all levels of the analysis we find that the four Nordic countries show quite individual patterns of market shares in international trade. Aggregate market shares have continuously declined for Sweden and Denmark during the 70s whereas exports from Finland and Norway have increased faster than total imports in the latter half of the 70s.

In the detailed analysis i.e. when we calculate the growth of the total market based on the commodity and country composition of exports from each country, we find that these so called structural factors account for most of the changes in market shares. In the case of Norway, Finland and Denmark the actual increase in exports has been above the increase implied by the constant market share assumption. Sweden is the only Nordic country to have made substantial losses in export market shares between 1970 and 1980.

The constant market shares are certainly not an uncontested method of describing a country's export performance (see Richardson, 1971). One default in particular is the dependency of the results on the period chosen. The analysis of changes between the two checkpoints 1970 and 1980 therefore only constitutes a way of getting an overview of the results. In the more detailed analysis we calculate yearly changes in export performance between 1965 and 1982. The latter exercise summarized in Figure 2 largely confirms the results for the 1970–80 period.

The yearly data obviously bring out more information about the changes that have occurred during the period. In the case of Denmark we find largely unchanged export performance in the 70s although yearly fluctuations have been important. The substantial improvement in the Finnish export performance from the mid-70s, found also in aggregate data in Figure 1, is supported also by the yearly calculations. The Norwegian export performance has been much above the growth of the markets mainly due to the increase in oil exports. And finally Swedish exports increase substantially below the growth of the Swedish export markets during the latter part of the period.

2 THE DATA AND COVERAGE OF THE STUDY

For the purpose of this paper the world market for each country is represented by imports to 14 OECD countries. Exports to these markets from the Nordic countries are assumed to be identical to imports from Denmark, Finland, Norway and Sweden respectively as reported by the importing countries.¹

The data cover the dollar-value of imports to each of the 14 other markets from the four Nordic countries for 41 commodity groups listed in Appendix 2. The level of aggregation has been chosen so that commodity groups should be as homogenous as possible. A two-digit SITC classification has been used, except in the case of SITC 0–1 (foodstuff etc.), SITC 3 (mineral fuels, lubricants and related materials), SITC 4 (animal and vegetable oils, fats and waxes) and SITC 9 (unclassified goods) where one-digit data are used. Data for 1978–82 published in SITC Rev. 2 have been crudely reclassified to be compatible with the longer series.²

This study consequently covers all commodity groups in exports from the Nordic countries but a limited number of geographical markets accounting for about 75 per cent of total exports.

The aggregated market share developments obtained in this study (Figure 1), however, closely follow the pattern obtained for market shares of each of the four countries in total world exports. Due to the method of calculation and the need for detailed breakdown by commodity and country a more limited market than total world trade had to be chosen. We have concentrated on the traditional export markets in Western Europe, the U.S., Canada and Japan. The study consequently leaves out trade with the Eastern European countries, of particular interest to Finland and trade with newly industrialized countries etc., that could be of particular interest in an assessment of recent trends in foreign trade.

3 MARKET SHARES OF THE NORDIC COUNTRIES IN OECD IMPORTS 1965–80

When we look at the aggregates we find that the four Nordic countries show substantial differences as to the patterns of total import market shares to the OECD countries. Market shares have continuously declined for Sweden and Denmark during the 1970s, whereas exports from Finland and Norway have increased faster than OECD imports in the latter half of the 70s.

Figure 1 shows the Nordic countries' share in total OECD imports as well as the shares of imports of raw-materials excluding fuels etc (SITC 1, 2 and 4) and of imports of manufactured goods (SITC 5–59).

The heterogeneity of the Nordic countries export performance is evident already at this simple disaggregation. The Norwegian increase in import market shares by 30 per cent between 1970 and 1980 is entirely due to the very rapid increase in oil exports. From a very modest level in the mid 70s they made up 55 per cent of the Norwegian export value in 1980. When we exclude oil exports, Norwegian market shares have declined substantially i.e. by about 25 per cent in the 70s.

The Norwegian and the Swedish losses of market shares in the OECD-area for raw materials as well as for manufactured goods are contrasted by the development of Danish and Finnish exports. Danish export market shares have increased for raw-materials and the share in manufactured goods has remained about constant in the 70s. Finnish market shares in raw-materials declined dramatically, by over 30 per cent, during the first half of the 70s but have since recovered. Exports of manufactured goods from Finland have also increased more than the average growth of imports of these commodities.

4 THE COMMODITY AND MARKET MIX OF EXPORTS FROM THE NORDIC COUNTRIES AS COMPARED TO THE ONE OF FOREIGN DEMAND IN 1970 AND IN 1980

Countries that have specialized in commodities for which the increase in world trade is above the average growth are in a position to gain market shares at the very aggregated level of the previous section. We will now use a further breakdown by commodities to see whether the more favorable market share development for Denmark and Finland can be attributed to a concentration in exports into products, the demand for which increases relatively fast.

4.1 The Commodity Composition of Exports

Tables 1–4 give the commodity composition of total exports from the Nordic countries as compared to the commodity distribution of total imports to the OECD countries.

The changes in commodity composition of OECD imports between 1970 and 1980 are heavily influenced by the increased value of oil imports. For this reason we look at the commodity distribution of OECD demand in 1970 and 1980, excluding mineral fuels etc (SITC 3). In the table for Norway, however, we present the figures including oil since oil exports constitute more than 50 per cent of total Norwegian exports to the markets included in this study.

Tables 1–4 should be read as follows. Col. 1 gives the distribution of the share of the 41 selected commodities in OECD imports. The commodity distribution of each Nordic

Table 1 Commodity specialization of Denmark's exports and commodity pattern of demand growth
(excl. SITC 3 mineral fuels etc.)

SITC classification of commodities	1970			Growth in OECD demand (1970=100) ^c	1980		
	OECD demand ^a % 1	Denmark's exports % 2	Special ratio (2/1) ^b 3		OECD demand % 5	Denmark's exports % 6	Special ratio (6/5) ^b 7
0+1	16.3	39.6	2.4	410	13.3	34.0	2.5
21	0.6	1.7	3.1	363	0.4	2.0	5.1
22	1.0	0.1	0.1	403	0.8	0.8	1.0
23	0.7	0.0	0.0	388	0.5	0.0	0.0
24	2.4	0.6	0.2	461	2.2	0.4	0.2
25	1.2	0.3	0.3	378	0.9	0.2	0.3
26	2.0	0.1	0.0	239	1.0	0.1	0.1
27	1.1	0.8	0.7	389	0.9	0.4	0.4
28	4.4	0.5	0.1	369	3.3	0.9	0.3
29	0.7	3.0	4.2	444	0.6	2.8	4.4
3	—	—	—	—	—	—	—
4	0.8	1.3	1.6	352	0.6	0.8	1.5
51	2.8	1.3	0.5	437	2.4	1.2	0.5
52	0.0	0.0	0.0	..	1.3	0.1	0.1
53	0.5	0.6	1.1	480	0.5	0.6	1.4
54	0.8	1.4	1.8	546	0.9	2.0	2.3
55	0.4	0.8	1.9	562	0.5	0.7	1.5
56	0.3	0.0	0.0	679	0.5	0.1	0.1
57	0.0	0.0	0.0	314	0.0	0.0	0.1
58	1.4	1.1	0.8	691	1.9	1.3	0.7
59	0.9	1.0	1.2	583	1.0	0.9	0.9
61	0.4	0.3	0.7	513	0.4	0.2	0.5
62	0.7	0.5	0.7	654	0.9	0.4	0.5
63	0.7	1.0	1.4	476	0.7	1.6	2.2
64	2.0	0.9	0.4	507	2.0	1.3	0.6
65	3.9	3.4	0.9	451	3.5	2.7	0.8
66	2.5	1.4	0.6	705	3.5	1.9	0.6
67	5.4	1.4	0.3	394	4.2	2.2	0.5
68	5.4	0.7	0.1	408	4.4	1.0	0.2
69	2.1	2.1	1.0	583	2.5	2.8	1.1
71	11.3	11.9	1.0	528	11.9	12.8	1.1
72	5.8	7.0	1.2	564	6.6	5.3	0.8
73	10.2	2.2	0.2	573	11.6	2.9	0.3
81	0.3	0.5	2.0	473	0.3	0.5	2.1
82	0.6	2.2	4.0	844	0.9	3.1	3.3
83	0.1	0.2	1.1	906	0.3	0.1	0.5
84	2.5	3.7	1.5	714	3.6	2.5	0.7
85	0.8	0.4	0.5	692	1.1	0.5	0.4
86	2.0	1.2	0.6	737	2.9	2.5	0.8
89	3.4	3.9	1.1	543	3.7	5.0	1.3
9	1.6	0.9	0.6	558	1.8	1.4	0.8
Total	100.0	100.0		502	100.0	100.0	

^a Defined as imports to the 14 OECD countries.

^b This ratio is higher (lower) than the unity whenever a product weighs more (less) in the countries exports than it weighs in OECD demand.

^c See footnote 2 concerning SITC Rev 1 and 2.

Table 2 Commodity specialization of Finland's exports and commodity pattern of demand growth
(excl. SITC 3 mineral fuels etc.)

SITC classification of commodities	1970			Growth in OECD demand (1970=100) ^c	1980		
	OECD demand ^a %	Finland's exports %	Special ratio (2/1) ^b		OECD demand %	Finland's exports %	Special ratio (6/5) ^b
	1	2	3	4	5	6	7
0+1	16.3	3.8	0.2	411	13.4	2.0	0.2
21	0.6	2.6	4.7	378	0.4	4.7	11.2
22	1.0	0.0	0.0	397	0.8	0.0	0.0
23	0.6	0.0	0.0	387	0.5	0.0	0.0
24	2.4	13.0	5.7	458	2.2	13.0	5.8
25	1.2	13.6	11.4	377	0.9	7.4	8.3
26	2.0	0.3	0.2	238	1.0	0.2	0.3
27	1.1	0.3	0.3	386	0.8	0.4	0.5
28	4.4	0.5	0.1	366	3.2	0.5	0.1
29	0.7	0.1	0.2	441	0.6	0.1	0.1
3	—	—	—	—	—	—	—
4	0.8	0.2	0.3	354	0.6	0.1	0.2
51	2.8	0.8	0.3	433	2.4	1.3	0.5
52	0.0	0.0	0.0	..	1.3	0.5	0.3
53	0.5	0.2	0.4	478	0.5	0.3	0.7
54	0.8	0.1	0.1	547	0.9	0.2	0.2
55	0.4	0.2	0.4	561	0.5	0.2	0.4
56	0.3	0.0	0.0	665	0.5	0.1	0.2
57	0.0	0.1	3.0	312	0.0	0.0	1.6
58	1.4	0.4	0.3	687	1.9	1.5	0.8
59	0.9	0.3	0.4	583	1.0	0.4	0.4
61	0.4	0.2	0.5	507	0.4	0.4	0.9
62	0.7	0.2	0.4	641	0.9	0.3	0.4
63	0.8	6.6	8.8	471	0.7	4.4	6.3
64	2.0	25.4	12.5	504	2.1	22.9	11.2
65	3.9	2.1	0.5	446	3.5	1.6	0.5
66	2.5	0.7	0.3	700	3.5	1.2	0.3
67	5.4	4.0	0.7	394	4.2	5.1	1.2
68	5.4	3.4	0.6	407	4.4	3.8	0.9
69	2.1	1.3	0.6	578	2.5	1.8	0.7
71	11.3	4.9	0.4	524	11.8	6.5	0.6
72	5.9	2.6	0.4	558	6.5	3.4	0.5
73	10.2	3.6	0.4	569	11.6	2.8	0.2
81	0.3	0.3	1.2	465	0.3	0.4	1.6
82	0.6	0.8	1.3	832	0.9	1.3	1.4
83	0.1	0.1	0.4	904	0.3	0.1	0.4
84	2.5	4.5	1.8	710	3.6	6.3	1.7
85	0.8	0.7	0.9	686	1.1	0.8	0.7
86	2.0	0.1	0.1	728	2.9	0.7	0.2
89	3.4	1.6	0.5	541	3.7	2.8	0.8
9	1.6	0.3	0.2	566	1.8	0.4	0.2
Total	100.0	100.0		499	100.0	100.0	

^a Defined as imports to the 14 OECD countries.

^b This ratio is higher (lower) than the unity whenever a product weighs more (less) in the countries exports than it weighs in OECD demand.

^c See footnote 2 concerning SITC Rev 1 and 2.

Table 3 Commodity specialization of Norway's exports and commodity pattern of demand growth
(excl. SITC 3 mineral fuels etc.)

SITC classification of commodities	1970			Growth in OECD demand (1970=100) ^c	1980		
	OECD demand ^a % 1	Norway's exports % 2	Special ratio (2/1) ^b 3		OECD demand % 5	Norway's exports % 6	Special ratio (6/5) ^b 7
0+1	14.6	11.2	0.8	411	9.8	5.3	0.5
21	0.5	1.3	2.6	380	0.3	0.5	1.5
22	0.9	0.0	0.1	396	0.6	0.0	0.0
23	0.6	0.0	0.0	388	0.4	0.0	0.0
24	2.2	0.5	0.2	463	1.6	0.8	0.5
25	1.1	5.3	5.0	375	0.7	0.9	1.4
26	1.8	0.4	0.2	239	0.7	0.2	0.3
27	1.0	1.8	1.8	387	0.6	0.7	1.1
28	3.9	4.5	1.2	368	2.3	1.2	0.5
29	0.6	0.3	0.5	442	0.5	0.1	0.3
3	10.5	2.0	0.2	1554	26.7	55.3	2.1
4	0.7	1.7	2.4	360	0.4	0.5	1.1
51	2.5	2.8	1.1	441	1.8	0.4	0.2
52	0.0	0.0	0.4	..	1.0	1.0	1.0
53	0.4	0.5	1.1	477	0.3	0.2	0.6
54	0.7	0.1	0.2	544	0.6	0.2	0.3
55	0.4	0.1	0.4	563	0.3	0.2	0.5
56	0.3	2.2	7.0	663	0.3	1.1	3.1
57	0.0	0.0	0.4	300	0.0	0.8	1.9
58	1.3	1.5	1.2	686	1.4	1.8	1.3
59	0.8	0.4	0.5	584	0.7	0.3	0.4
61	0.4	0.3	0.8	509	0.3	0.1	0.5
62	0.6	0.5	0.8	641	0.6	0.2	0.3
63	0.7	0.6	0.9	471	0.5	0.3	0.5
64	1.8	6.5	3.5	503	1.5	3.0	2.0
65	3.5	1.5	0.4	447	2.6	0.6	0.3
66	2.2	0.8	0.3	702	2.5	0.4	0.1
67	4.8	7.0	1.4	392	3.1	4.2	1.4
68	4.9	22.9	4.7	408	3.2	8.6	2.7
69	1.9	2.2	1.2	576	1.8	1.1	0.6
71	10.1	5.1	0.5	524	8.7	3.4	0.4
72	5.3	3.4	0.6	558	4.8	1.6	0.3
73	9.0	8.1	0.9	579	8.5	2.5	0.3
81	0.2	0.3	1.2	465	0.2	0.1	0.7
82	0.5	0.7	1.5	827	0.7	0.5	0.7
83	0.1	0.0	0.1	910	0.2	0.0	0.1
84	2.2	0.7	0.3	713	2.6	0.4	0.1
85	0.7	0.2	0.3	685	0.8	0.1	0.1
86	1.8	0.3	0.1	728	2.1	0.5	0.3
89	3.1	1.8	0.6	540	2.7	0.9	0.3
9	1.4	0.7	0.5	566	1.3	0.9	0.7
Total	100.0	100.0		611	100.0	100.0	

^a Defined as imports to the 14 OECD countries.

^b This ratio is higher (lower) than the unity whenever a product weighs more (less) in the countries exports than it weighs in OECD demand.

^c See footnote 2 concerning SITC Rev 1 and 2.

Table 4 Commodity specialization of Sweden's exports and commodity pattern of demand growth
(excl. SITC 3 mineral fuels etc.)

SITC classification of commodities	1970			Growth in OECD demand (1970=100) ^c	1980		
	OECD demand ^a %	Sweden's exports %	Special ratio (2/1) ^b		OECD demand %	Sweden's exports %	Special ratio (6/5) ^b
	1	2	3	4	5	6	7
0+1	16.4	2.3	0.1	413	13.5	1.9	0.1
21	0.6	0.4	0.8	381	0.4	0.4	1.0
22	1.0	0.1	0.1	396	0.8	0.1	0.1
23	0.7	0.1	0.1	391	0.5	0.0	0.1
24	2.5	7.6	3.1	453	2.2	5.3	2.4
25	1.2	9.2	7.5	376	0.9	5.5	6.0
26	2.1	0.2	0.1	240	1.0	0.1	0.1
27	1.1	0.4	0.4	389	0.9	0.4	0.4
28	4.4	5.3	1.2	370	3.3	3.0	0.9
29	0.7	0.2	0.3	445	0.6	0.2	0.3
3	—	—	—	—	—	—	—
4	0.8	0.1	0.2	358	0.6	0.2	0.3
51	2.8	1.3	0.5	439	2.4	0.7	0.3
52	0.0	0.0	0.6	..	1.3	1.0	0.7
53	0.5	0.2	0.4	484	0.5	0.3	0.6
54	0.8	0.5	0.6	548	0.9	1.1	1.3
55	0.4	0.3	0.7	566	0.5	0.3	0.6
56	0.3	0.1	0.1	674	0.5	0.0	0.1
57	0.0	0.1	1.9	305	0.0	0.1	2.0
58	1.4	1.2	0.9	694	1.9	2.1	1.1
59	0.8	0.6	0.6	589	1.0	0.7	0.7
61	0.4	0.3	0.8	516	0.4	0.3	0.8
62	0.7	0.9	1.4	646	0.9	0.9	1.0
63	0.7	0.9	1.2	473	0.7	1.3	1.8
64	2.0	9.0	4.4	506	2.1	11.0	5.3
65	3.9	1.6	0.4	453	3.5	1.3	0.4
66	2.5	0.9	0.4	707	3.5	1.3	0.4
67	5.4	8.8	1.6	394	4.2	8.2	2.0
68	5.4	2.7	0.5	412	4.4	2.9	0.7
69	2.1	3.5	1.6	582	2.4	4.3	1.8
71	11.2	15.9	1.4	526	11.8	17.8	1.5
72	5.8	5.7	1.0	566	6.5	5.8	0.9
73	10.2	13.0	1.3	571	11.6	13.2	1.1
81	0.3	0.8	3.0	465	0.3	0.5	2.1
82	0.6	0.9	1.6	831	0.9	2.0	2.1
83	0.1	0.1	0.6	912	0.3	0.0	0.1
84	2.5	1.4	0.6	721	3.6	1.0	0.3
85	0.8	0.2	0.3	695	1.1	0.2	0.2
86	2.0	0.9	0.5	741	2.9	1.7	0.6
89	3.4	1.7	0.5	544	3.7	2.4	0.6
9	1.6	0.8	0.5	563	1.8	0.8	0.5
Total	100.0	100.0		502	100.0	100.0	

^a Defined as imports to the 14 OECD countries.

^b This ratio is higher (lower) than the unity whenever a product weighs more (less) in the countries exports than it weighs in OECD demand.

^c See footnote 2 concerning SITC Rev 1 and 2.

country's exports to this market (col. 2) is then compared to the distribution of total imports. This ratio (col. 2 divided by col. 1) indicates the degree of specialization in the country's exports (col. 3). The specialization ratio is higher than the unity whenever a product weighs more in the country's exports than it weighs in total demand for imports to the OECD countries. Specialization ratios are calculated for 1970 and 1980.

Col. 4 gives the market increase, i.e. the change in OECD imports, for each commodity over the period. We find from the bottom row in col. 4 that the value of total imports has increased fivefold over the period. Including oil imports the value of total OECD imports in 1980 was six times the value in 1970. The difference in definition of commodity markets in this table between Norway and the three others is evident from the difference in the sum of col. 4. Other differences in col. 4 are due to the slight difference in geographical markets due to the Nordic countries' trade among themselves.

A detailed study of Tables 1–4 shows that the four Nordic countries differ substantially as to the commodity pattern of trade. If we look at the five most important commodities in the trade of each country in the sense of a high specialization ratio, they are in no way identical. Finland, Sweden and Norway have in common that exports from the forest sector are important. But, apart from this group of commodities, specialization ratios differ even at this comparatively high level of aggregation.

When we look closely at all commodity groups for which the specialization ratio exceeds one we find that the Nordic countries have in general specialized in exports of goods, the demand for which increases less than the average increase in OECD imports.

The Swedish pattern of specialization is, however, more favorable than the commodity pattern of exports from the other Nordic countries, in the sense that about 50 per cent of the Swedish export value in 1980 was covered by groups of commodities with a specialization factor above one and growth rates between 1970 and 1980 above the average. Only 20 per cent of the export value was made up of commodities with a specialization ratio of more than one and growth rates below the average.

An examination of the tables shows that the success of Denmark and Finland as compared to Sweden in maintaining market share is not explained by their commodity composition. They have "specialized" in slowgrowing commodities in the 70s but nevertheless showed a better overall export-market performance.

The export value for Denmark is dominated by exports from the agricultural sector. The demand for food and related products increases less than world trade over the period. But the table also shows that Danish exports are specialized in some fastgrowing chemicals (SITC 54 and 55) as well as consumer goods like furniture and clothing, demand for which has increased substantially above the increase in exports in general. These fastgrowing commodities, however, only make up about 20 per cent of total Danish exports as compared to 50 per cent for fastgrowing commodities in Swedish exports.

The Finnish pattern of specialization also has a heavy weight for slowgrowing products. Exports from the forest industry made up over 50 per cent of the export value in 1980. Less than 10 per cent of exports with a specialization factor above one were in products that grew more than average imports. Like in Denmark these were consumer goods, furniture and clothing. In general Finnish exports are concentrated to slowgrowing product markets but the export performance in the latter half of the 70s has been so much better than the average that overall markets shares have been gained.

If we exclude the 50 per cent of Norwegian exports that are now made up of oil exports we find a concentration to slowgrowing products in exports. About 45 per cent of the important commodities in exports increase less than the average in the 70s. Only 5 per cent are products with a specialization ratio above one and an increase in demand above the average. Market shares have been lost in all categories during the 70s. The losses for the manufacturing sector as a whole have been even bigger than the Swedish losses since 1975. They are particularly pronounced for the engineering sector where market shares were increasing until 1978 but have since been halved.

The reason for the difference between Swedish export performance and that of Denmark and Finland is that exports from the engineering sector (SITC 69, 71, 72 and 73) weigh more heavily in Swedish exports and that Swedish exports have not kept up with the rate of growth of total imports of these products. About 20 per cent of the market share has been lost between 1975 and 1980. The share of the engineering sector in the country's total trade is much less in Denmark and Finland, but in contrast to the Swedish case they have gained shares in the 70s.

4.2 The Country Composition of Exports

When we look closer into the country distribution of exports from the Nordic countries we find that much of their total exports go to relatively slowgrowing markets. About 30 per cent of exports covered in this study go to the other Nordic countries. Another 30 to 35 per cent are exported to Germany and the UK. The non-European markets included take only a small fraction of the total. It should of course be kept in mind that the data collected for this paper only cover 14 importing countries covering about 75 % of total exports. There are substantial differences between the four countries as to the trade not covered in this analysis, the trade between Finland and the Eastern European countries being the most obvious source of discrepancies as compared to an analysis of total trade in all markets. 1980 figures show that the 14 markets included take 73 per cent of total Swedish exports, 80 per cent of Danish exports, 87 per cent of Norwegian exports (incl. oil) but only 65 per cent of Finnish exports.

Looking at the market mix of the Nordic countries using the same method as for the commodities we find that intra-Nordic trade is important. The market dependence-ratio, i.e. the share of the Nordic countries exports to the other Nordic countries is between 2 and 7. Imports to the UK are about twice as important to the Nordic countries as they are

to other countries on the average. Imports to Germany take about the same share in the Nordic countries exports as they do for other countries. The dependence of the Nordic countries on each other differs between the countries. Sweden is the largest market for Norway and Finland as it takes about 20 per cent of total exports.

The Nordic countries have thus in common that they depend on exports to the relatively slowgrowing Nordic market. A relatively smaller share of their total exports goes to the European countries, that have increased imports faster than the import growth of the whole area. The differences in market mix between the countries will not justify a detailed description. Detailed figures are presented in Appendix 4. In the final section of the paper, the constant market shares analysis, the country as well as the commodity-composition will be included in the market shares calculations.

5 A CONSTANT-MARKET-SHARES ANALYSIS

In this section we proceed the analysis of the Nordic countries' market shares by using all the information in our data i.e. the commodity and the country composition of exports. The method used is based on a constant-market-shares analysis. The norm used is to assume that exports of each good could increase at the same rate as foreign demand of that particular good to each individual market and calculate the "potential" exports growth. The difference between the observed increases and the "estimated" is attributed to changes in competitiveness.⁴

The change in world market shares is divided by a structural component i.e. the part of the total change in exports that can be explained by the commodity and country composition and the competitiveness factor, calculated as the difference between the actual level of exports and a potential export level under the assumption of constant market shares. This method fully takes into consideration that growth rates differ between different kinds of commodities and between different countries. Countries, like the Nordic countries whose exports are specialized in slowgrowing commodities and countries, will then have their export markets adjusted downwards as compared to the growth of total OECD imports.

The results from a constant-market-shares analysis are affected by the selection of a base period and the level of disaggregation of commodity and market groups. Its implications will therefore only apply to the specified time period and the particular break down of commodities and markets.

The problem of choosing an appropriate commodity and market aggregation has been solved in this paper by using a breakdown into 41 commodities which gives substantially more details than other studies in this field (Ponte Ferreira, 1981, Leamer and Stern, 1970, OECD, 1981). The calculations are performed on yearly data for the 1965–82 period.

5.1 A Constant-Market-Shares Calculation for the 1970s

In order to introduce the method of calculation and facilitate some general conclusions we start by presenting results of a constant-market-shares calculation using data for 1970 and 1980. Table 5 gives the summary data for the export performance of the Nordic countries in the 70s.

Lines (1) and (2) are basic data from the trade statistics. They may differ marginally from national export statistics. 1980 exports are the sum of total imports from the country concerned as reported by the 14 other countries in the analysis. Line (3) is the calculated increase in exports between 1970 and 1980 had exports grown at the same rate as world trade in general. (2)–(3), the difference between actual increases in exports and the increase had no market losses occurred, describes essentially the same fact as Figure 1.

Lines (4) to (6) are the results of the constant market shares analysis. Line (4) indicates the extent to which exports are concentrated in commodities with growth rates more (or less) favorable than the world average. A positive sign indicates that exports are concentrated to relatively fast growing commodities. A negative sign indicates a concentration to slowly growing commodity markets.

In a corresponding way line (5) is positive if exports are concentrated to markets that are experiencing relatively rapid growth and negative if important export markets are relatively stagnant. Line (4) and line (5) are, however, not invariant as to the order of calculation. Since we found that the commodity composition differed much more between the Nordic countries than the country composition, the structural effects have been calculated starting by the commodity adjustment.

Finally line (6) shows outcome of the constant market shares calculations, i.e. the difference between the actual level of exports and that that should have been attained

Table 5 The Nordic countries export performance 1970 to 1980
Million U.S. dollars

	Denmark	Finland	Norway	Sweden
(1) Exports 1980	13 479	9 950	16 671	23 815
(2) Actual change 1970–1980	10 768	8 110	14 551	18 195
(3) Calculated increase assuming no market loss	13 884	9 364	10 836	28 838
(2)–(3) Difference actual and calculated	– 3 116	– 1 254	3 714	–10 643
(4) Change due to commodity composition	– 2 446	– 2 107	– 2 615	– 5 649
(5) Change due to market distribution	– 1 307	– 735	– 929	–1 760
(6) Change due to "competitiveness"	637	1 587	7 259	– 3 234

had market shares to every market and every commodity been maintained between 1970 and 1980.

From Table 5, lines (2) and (3), we see, as in Figure 1, that Norway is the only country for which overall market shares have been gained in the 70s. The actual increase in exports is 30 per cent above the increase needed to keep market shares in OECD imports. The other three countries have lost market shares, the actual increase in exports being only 60 per cent of the increase needed to maintain overall market shares for Sweden, 80 per cent for Denmark and 90 per cent for Finland.

From lines (4) and (5) we find that the composition of exports has been unfavorable for all countries. The conclusions from the table are that this structural effect of the export composition is more important than the market losses that have actually occurred for Denmark and Finland, and it makes the gain in Norwegian exports even more impressive. For these three countries the market share developments between 1970 and 1980 have been much better than could have been expected given the composition of their exports.

The magnitude of the gains in markets share is rather small in Denmark where it accounts for 6 percentage points of the increase in exports. For Finland the competitiveness effect accounts for 20 per cent of the increase, and for Norway 50 per cent.

In the case of Sweden there have been substantial losses of competitiveness as well as an unfavorable country and commodity composition. On the basis of this 1970–80 summary one third of the 30 per cent decline can be explained by losses in competitiveness and two-thirds are attributed to an unfavorable structural composition of exports.

5.2 A Constant Market Shares Analysis for Yearly Data 1965–82

In Tables 6 to 9 we present the result of a constant-market-shares calculation for yearly data between 1965 and 1982, in order to remove bias introduced by choosing endpoints that might correspond to different phases of the business cycle in the four countries.

The conclusions from Table 5 are not contradicted by the more detailed analysis. The structural composition of exports has worked in a negative way for most of the years observed. For an occasional year the sum of the commodity and the country effect can be positive, but in general it is negative. Very often, however, one or the other is positive. The commodity composition effect is particularly interesting in the case of Norway where it has been negative throughout the period except for the last two years, obviously a results of the heavy weight given to oil exports in total exports recently. The change in the commodity factor for Sweden from a predominantly positive contribution in the 60s to

a negative contribution in the 70s is also interesting. In the 60s Swedish exports gained overall market shares due to its commodity composition. In the 70s exports were concentrated in more slowgrowing commodities relative to world demand.

The last column indicates the part of the total change in exports that can be attributed to an improvement in competitiveness. When comparing this more detailed analysis with the 1970–80 results we find that, in the case of Denmark, the favorable development over the 1970–80 period is somewhat modified. After 1973 the gains in competitiveness have decreased although one observation, for 1978, indicates an important increase in market shares. We see a reversal of the negative trend of Finnish export performance in the beginning of the 70s. Market shares have only been lost in three years during the period and after 1973 there has been a substantial improvement, the trend of which has however been reversed during the latter part of the period.

Table 6 Danish export performance 1965–82
Million U.S. dollars

	Danish exports ^a	Actual change in exports	Calculated increase, assuming no market loss	Change due to commodity composition	Change due to market distribution	Change due to "competitiveness"
	(1)	(2)	(3)	(4)	(5)	(6)
1966	1 973	123	207	- 10	- 65	- 9
1967	2 027	54	112	- 41	- 14	- 3
1968	2 139	124	264	- 72	- 86	6
1969	2 399	262	330	- 5	- 45	- 22
1970	2 711	312	362	1	25	- 76
1971	2 980	269	307	6	55	11
1972	3 524	544	566	62	-109	25
1973	4 942	1 417	1 310	- 43	- 82	232
1974	6 051	1 109	1 977	-856	213	- 47
1975	6 624	573	79	246	217	31
1976	7 016	393	1 036	-111	-257	-275
1977	7 791	775	973	84	- 53	-229
1978	9 984	2 193	1 378	169	-363	1 009
1979	11 722	1 737	2 829	-640	182	-634
1980	13 479	1 758	2 277	-771	91	161
1981	12 301	-1 178	-570	-128	-618	138
1982	12 077	- 224	-781	274	109	174

^a To 14 countries. Values for 1981 and 1982 estimated without actual data for the Netherlands.

Notes: (1) The calculations in the columns above correspond to the symbols used in Appendix 1 in the following way:

$$\begin{aligned} \text{col. 1 } V_{..} & \quad \text{col. 4 } \sum_i (r_i - r) \times V_i \\ \text{col. 2 } V'_{..} - V_{..} & \quad \text{col. 5 } \sum_i \sum_j (r_{ij} - r_i) \times V_{ij} \\ \text{col. 3 } r \times V_{..} & \quad \text{col. 6 } \sum_i \sum_j (V'_{ij} - V_{ij} - r_{ij} \times V_{ij}) \end{aligned}$$

(²) col. 2 = sum of col. 3–6.

Norway's exports, now made up of oil to 50 per cent, are of course dominated by this one commodity. The improvement in competitiveness during the last years in the table is entirely due to the increase in oil exports.

The export performance of Sweden shows a cyclical pattern over the period. This is brought out more clearly in the diagrammatic presentation of col. (6) of Tables 6 to 9 in Figure 2. In order to facilitate comparisons between the countries, we compare the level of exports actually attained by the potential level to have been reached if market shares to each market and each commodity had been maintained. The figure brings out the differences in the four countries export performance over the period. It also underlines substantial changes in the trends during the period.

Table 7 Finnish export performance 1965-82
Million U.S. dollars

	Finnish exports ^a	Actual change in exports	Calculated increase, assuming no market loss	Change due to commodity composition	Change due to market distribution	Change due to "competitiveness"
	(1)	(2)	(3)	(4)	(5)	(6)
1966	1 143	91	118	- 30	- 48	51
1967	1 145	2	66	- 41	- 20	- 3
1968	1 268	122	150	- 1	- 42	15
1969	1 575	307	195	14	- 23	121
1970	1 841	266	235	- 52	49	34
1971	1 930	89	207	- 77	- 67	26
1972	2 285	355	364	27	- 69	33
1973	3 063	778	856	65	53	-196
1974	4 049	986	1 212	-338	139	- 27
1975	3 786	-263	50	-329	103	87
1976	4 392	606	605	173	-107	- 2
1977	5 281	890	608	-107	- 71	460
1978	6 175	893	936	93	-471	335
1979	8 661	2 486	1 736	43	135	572
1980	9 950	1 289	1 644	-552	168	29
1981	9 140	-810	-423	-357	-318	288
1982	8 249	-891	-578	11	- 31	-293

^a To 14 countries. Values for 1981 and 1982 estimated without actual data for the Netherlands.

Notes: (1) The calculations in the columns above correspond to the symbols used in Appendix 1 in the following way:

$$\text{col. 1 } V_{..} \quad \text{col. 4 } \sum_i (r_i - r) \times V_i$$

$$\text{col. 2 } V'_{..} - V_{..} \quad \text{col. 5 } \sum_i \sum_j (r_{ij} - r_i) \times V_{ij}$$

$$\text{col. 3 } r \times V_{..} \quad \text{col. 6 } \sum_i \sum_j (V'_{ij} - V_{ij} - r_{ij} \times V_{ij})$$

(2) col. 2 = sum of col. 3-6.

Looking at Figure 2 we can see that the cyclical pattern of the Swedish market shares holds fairly well until 1975. Market shares are lost in periods of high capacity utilization in the Swedish economy. The most pronounced losses were in 1969 and 1974 when the Swedish economy was characterized by a high pressure of demand. Losses in export market shares after 1975, however, follow closely the changes in the relative cost position of Swedish industry. There was a sharp increase in the relative unit labor cost index for Sweden in 1975–76. The relation has subsequently been restored by several devaluations but the effect as we see from the figure for Sweden has mainly been to arrest the decline and already in 1980 market shares were lost again.

Table 8 Norwegian export performance 1965–82
Million U.S. dollars

	Norwegian exports ^a	Actual change in exports	Calculated increase, assuming no market loss	Change due to commodity composition	Change due to market distribution	Change due to "competitiveness"
	(1)	(2)	(3)	(4)	(5)	(6)
1966	1 343	106	138	12	- 52	9
1967	1 460	117	74	- 32	- 34	110
1968	1 587	132	191	18	- 38	- 44
1969	1 834	245	248	- 5	- 5	8
1970	2 120	290	273	- 13	25	0
1971	2 237	118	237	-169	- 64	114
1972	2 596	359	426	- 46	- 61	40
1973	3 557	961	970	14	2	- 25
1974	4 670	1 113	1 418	- 89	44	-260
1975	5 515	845	53	-277	251	818
1976	6 005	490	868	- 88	-395	105
1977	6 839	834	822	- 99	-157	268
1978	9 741	2 902	1 238	- 53	-317	2 034
1979	11 897	2 157	2 765	444	372	-1 424
1980	16 671	4 773	2 274	930	-327	1 896
1981	17 296	625	- 712	107	-630	1 860
1982	16 303	-993	-1 103	-647	235	522

^a To 14 countries. Values for 1981 and 1982 estimated without actual data for the Netherlands.

Notes: (1) The calculations in the columns above correspond to the symbols used in Appendix 1 in the following way:

$$\begin{aligned} \text{col. 1 } V_{..} & & \text{col. 4 } \sum_i (r_i - r) \times V_i \\ \text{col. 2 } V'_{..} - V_{..} & & \text{col. 5 } \sum_i \sum_j (r_{ij} - r_i) \times V_{ij} \\ \text{col. 3 } r \times V_{..} & & \text{col. 6 } \sum_i \sum_j (V'_{ij} - V_{ij} - r_{ij} \times V_{ij}) \end{aligned}$$

(2) col. 2 = sum of col. 3–6.

The Norwegian industry has also lost market shares heavily in the latter half of the 70s. The losses in market shares are, however, much less pronounced when we take the country and commodity composition into account as in Figure 2 as compared to the much more aggregate figures in Table 1. The decline between 1975 and 1978 in Figure 1 is entirely due to the structural factors. In 1979 and 1980 we find that Norwegian export growth was weaker than the market growth. Contrary to the case of Sweden this is not directly associated with a deterioration of the relative cost position during these years. The losses that are ascribed to a decline in competitiveness seem to be "related with the inability of fulfilling export orders rather than with a deterioration of the country's cost competitive position". (Ponte Ferreira, 1982).

Table 9 Swedish export performance 1965–82
Million U.S. dollars

	Swedish exports ^a	Actual change in exports	Calculated increase, assuming no market loss	Change due to commodity composition	Change due to market distribution	Change due to "competitiveness"
	(1)	(2)	(3)	(4)	(5)	(6)
1966	3 585	222	384	37	-166	- 33
1967	3 803	218	208	30	- 27	7
1968	4 118	314	494	75	-196	- 59
1969	4 693	574	639	101	4	-170
1970	5 621	928	702	70	144	12
1971	6 100	479	649	-145	-137	112
1972	7 094	995	1 159	- 35	-181	52
1973	9 774	2 680	2 668	- 49	222	-161
1974	12 353	2 578	3 863	-1 037	146	-394
1975	12 789	437	118	-392	543	168
1976	13 869	1 080	2 052	192	-240	-924
1977	14 592	723	1 942	-251	-240	-728
1978	16 861	2 269	2 630	553	-1 063	148
1979	21 438	4 577	4 721	-341	131	66
1980	23 815	2 377	4 123	-935	374	-1 184
1981	21 152	-2 663	-965	-406	-948	-344
1982	20 630	-522	-1 345	327	328	168

^a To 14 countries. Values for 1981 and 1982 estimated without actual data for the Netherlands.

Notes: (1) The calculations in the columns above correspond to the symbols used in Appendix 1 in the following way:

$$\text{col. 1 } V_{..} \quad \text{col. 4 } \sum_i (r_i - r) \times V_i$$

$$\text{col. 2 } V'_{..} - V_{..} \quad \text{col. 5 } \sum_i \sum_j (r_{ij} - r_i) \times V_{ij}$$

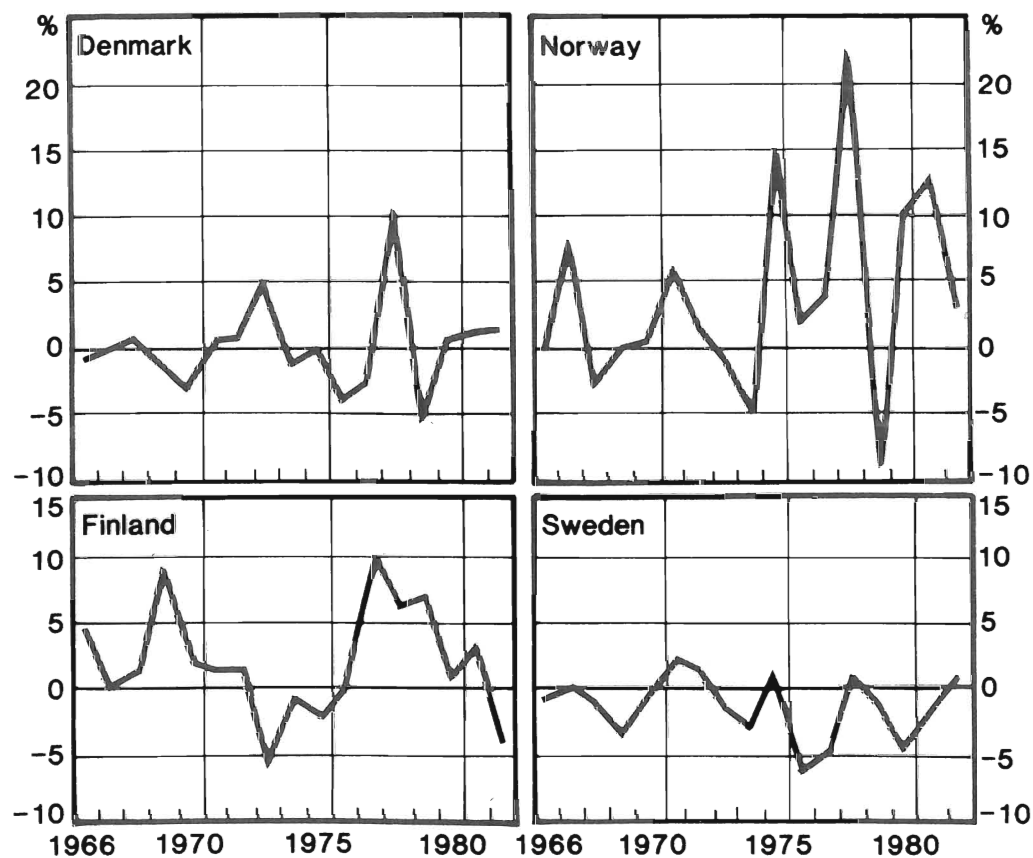
$$\text{col. 3 } r \times V_{..} \quad \text{col. 6 } \sum_i \sum_j (V'_{ij} - V_{ij} - r_{ij} \times V_{ij})$$

$$(^2) \text{ col. 2 = sum of col. 3-6.}$$

A similar non-cost loss of competitiveness occurred in Finland in the mid-70s. Industrial production increased fast relative to the longer term trend during 1973–75. It is likely that export orders had to compete with demand from the domestic market, which illustrates the effects on export market shares of the high internal demand pressure in Finland during this period. The high utilization of capacity was partly due to an investment boom resulting in increased capacity and an ability for Finnish industry to gain substantial market shares in the latter part of the 70s.

It is evident that the constant market shares calculations only indicate a starting point for an analysis of a country's competitiveness. In order to interpret the results we need to study several indicators of price and non-price competitiveness that could explain the differences in export performance between the Nordic countries found in this paper. Tentative efforts to relate the changes in the indicator of competitiveness in this study to changes in relative prices and unit labor costs only show significant relations in the case of Sweden and then only for the latter part of the period.

Figure 2 Measure of competitiveness in the Nordic countries 1966–82



APPENDIX 1: A CONSTANT-MARKET-SHARES ANALYSIS

The starting point for a constant-market-share analysis is that a country's export performance as compared to trade in general depends to a great deal on its specialization in commodities and the destination of its exports. World demand is buoyant for some goods and sluggish for others, and markets differ in respect to the growth rate of imports. Consequently, a country surrounded by slow-growing neighbors is likely to perform less well than the world average.

Differences between countries in export potential can be captured by three distinct factors: The overall export growth factor, The commodity composition export growth factor and The geographic composition export growth factor.

The difference between actual exports and the calculation of the export level had the market share in every commodity in every geographical market been constant will result in an "unexplained" residual which is attributed to changes in the "competitive" position.

Following the method and notation used by Leamer and Stern (1970) the symbols used to describe the actual and "potential" changes being calculated are:

- $V_{..}$ = Exports in base year (period 1)
- $V'_{..}$ = Exports in period 2
- $V_{.j}$ = Exports to country j
- $V_{i.}$ = Exports of commodity i
- r = Increase in total world exports
- r_i = Percentage increase in world exports of commodity i from period 1 to period 2
- r_{ij} = percentage increase in world exports of commodity i to country j from period 1 to period 2.

If we regard exports as a single good destined to a single market and consequently disregard the commodity and market composition the following identity will split the increase in exports into one part explained by the increase in total trade and one unexplained residual due to changes in competitiveness.

$$V'_{..} - V_{..} \equiv r \times V_{..} + (V'_{..} - V_{..} - r \times V_{..}) \quad (1)$$

This is of course a rather crude measure of market shares. Some improvement is obtained by a "second" level of analysis whereby the effect of commodity composition can be singled out. For every group of commodities

$$V'_{i.} - V_{i.} \equiv r_i \times V_{i.} + (V'_{i.} - V_{i.} - r_i \times V_{i.}) \quad (2)$$

Summing over all commodities gives

$$V'_{..} - V_{..} \equiv \sum_i r_i \times V_{i.} + \sum_i (V'_{i.} - V_{i.} - r_i \times V_{i.}) \quad (3)$$

$$V'_{..} - V_{..} \equiv r \times V_{..} + \sum_i (r_i - r) \times V_{i.} + \sum_i (V'_{i.} - V_{i.} - r_i \times V_{i.}) \quad (4)$$

Proceeding to a "third level" analysis we are looking for country as well as commodity effects. In order to get this we start with the identity

$$V'_{ij} - V_{ij} \equiv r_{ij} \times V_{ij} + (V'_{ij} - V_{ij} - r_{ij} \times V_{ij}) \quad (5)$$

and summarize over countries and commodities, leading to

$$\begin{aligned} V'_{..} - V_{..} &\equiv \sum_{ij} r_{ij} \times V_{ij} + \sum_{ij} (V'_{ij} - V_{ij} - r_{ij} \times V_{ij}) \\ &\equiv r \times V_{..} + \sum_i (r_i - r) \times V_{i.} + \sum_{ij} (r_{ij} - r_i) \times V_{ij} \\ &\quad + \sum_{ij} (V'_{ij} - V_{ij} - r_{ij} \times V_{ij}) \end{aligned} \quad (6)$$

This expression divides the increase in total exports into four components.

1. The overall trade growth factor: $r \times V_{..}$
2. The commodity composition factor: $\sum_i (r_i - r) \times V_{i.}$
3. The market factor: $\sum_{ij} (r_{ij} - r_i) \times V_{ij}$
4. The competitiveness factor: $\sum_{ij} (V'_{ij} - V_{ij} - r_{ij} \times V_{ij})$

APPENDIX 2: Product classification (SITC 1)

- 0 **Food and live animals**
- 1 **Beverages and tobacco**
- (2) **Crude materials, inedible except fuels**
- 21 Hides, skins and fur skins, undressed
- 22 Oil-seeds, oil nuts and oil kernels
- 23 Crude rubber including synthetic and reclaimed
- 24 Wood, lumber and cork
- 25 Pulp and waste paper
- 26 Textile fibres, not manufactured, and waste
- 27 Crude fertilizers and crude minerals, nes
- 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 and fats**
- (5) **Chemicals**
- 51 Chemicals elements and compounds
- 52 Crude chemicals from coal, petroleum and gas
- 53 Dyeing, tanning and colouring materials
- 54 Medicinal and pharmaceutical products
- 55 Perfume materials, toilet & cleansing preparations
- 56 Fertilizers, manufactured
- 57 Explosives and pyrotechnic products
- 58 Plastic materials, etc.
- 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, paperboard and manufactures thereof
- 65 Textile yarn, fabrics, made-up articles, etc.
- 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 Machinery, other than electric
- 72 Electrical machinery, apparatus and appliances
- 73 Transport equipment
- (8) **Miscellaneous manufactured articles**
- 81 Sanitary, plumbing, heating and lighting fixt.
- 82 Furniture
- 83 Travel goods, handbags and similar articles
- 84 Clothing
- 85 Footwear
- 86 Scientific & control instrum, fotogr gds, clocks
- 89 Miscellaneous manufactured articles, nes
- 9 **Commodities and transactions not classified according to kind**

APPENDIX 3: Data (1980) used in the constant-market-share analysis, 1965–80

Table 3.1 a Market breakdown
Million U.S. dollars

	Total 1980 import	Of which imports from:			
		Denmark	Finland	Norway	Sweden
1 Denmark	19 904	—	735	794	2 476
2 Finland	15 629	374	—	329	1 885
3 Norway	16 948	1 040	632	—	2 791
4 Sweden	33 426	2 047	2 281	1 739	—
5 Germany	185 920	3 139	1 610	4 257	3 891
6 United Kingdom	117 903	2 520	1 830	3 127	3 339
7 France	134 284	862	704	1 267	2 070
8 Italy	98 438	872	371	281	1 224
9 Belgium	71 187	329	218	589	1 045
10 Netherlands	76 409	646	598	1 076	1 421
11 Austria	24 432	167	112	82	444
12 Switzerland	36 148	301	205	137	707
13 United States	250 280	765	479	2 732	1 705
14 Canada	57 703	97	56	65	356
15 Japan	139 893	320	118	186	461
Total	1 277 904	13 479	9 950	16 671	23 815

Table 3.1 b Commodities breakdown

SITC	Total 1980 imports of 15 countries	Of which imports from:			
		Denmark	Finland	Norway	Sweden
1 0+1	125 108	4 371	191	876	435
2 21	3 983	261	444	78	96
3 22	7 291	99	0	0	24
4 23	4 711	1	0	0	10
5 24	20 744	58	1 215	130	1 194
6 25	8 345	32	698	153	1 237
7 26	9 043	14	23	30	28
8 27	8 009	45	37	118	82
9 28	30 169	113	43	207	678
10 29	5 978	354	6	22	37
11 3	339 486	623	584	9 215	1 205
12 4	5 187	108	10	77	35
13 51	22 712	153	118	63	151
14 52	12 446	16	42	166	216
15 53	4 044	83	32	33	60
16 54	8 182	252	19	34	253
17 55	4 325	88	19	30	57
18 56	4 322	7	9	178	6
19 57	269	0	4	6	12
20 58	18 232	170	140	301	464
21 59	9 428	113	35	47	151
22 61	4 168	28	36	25	77
23 62	8 172	55	29	30	202
24 63	6 644	203	416	42	293
25 64	19 147	165	2 148	499	2 480
26 65	32 959	349	149	108	299
27 66	32 200	245	111	62	285
28 67	39 890	282	476	704	1 860
29 68	41 274	127	357	1 440	658
30 69	23 251	355	166	189	970
31 71	111 864	1 645	612	559	4 018
32 72	61 558	682	318	269	1 305
33 73	108 439	374	266	410	2 981
34 81	2 390	68	39	21	120
35 82	8 825	398	121	78	442
36 83	2 380	15	9	5	7
37 84	33 783	325	592	63	221
38 85	9 974	58	71	9	50
39 86	27 199	317	65	89	392
40 89	34 906	641	264	149	539
41 9	16 502	178	40	158	188
Total	1 277 904	13 479	9 950	16 671	23 815

APPENDIX 4: Market dependency in nordic exports and market pattern of OECD demand growth

Table 4.1 Market dependency in Denmark's exports and market pattern of OECD demand growth
(excl. SITC 3 mineral fuels etc.)

EXPORT MARKETS	1970			Growth in OECD demand (1970 = 100) 4	1980		
	OECD demand ^a % 1	Denmark's exports % 2	Depend ratio (2/1) ^b 3		OECD demand ^a % 5	Denmark's exports % 6	Depend ratio (6/5) ^b 7
1 Denmark	—	—	—	—	—	—	—
2 Finland	1.3	2.9	2.3	474	1.2	2.9	2.4
3 Norway	1.9	8.4	4.5	410	1.5	7.6	5.0
4 Sweden	3.4	18.2	5.3	405	2.7	13.2	4.8
5 Germany	14.8	15.4	1.0	529	15.6	23.8	1.5
6 United Kingdom	10.5	25.1	2.4	525	11.0	19.0	1.7
7 France	9.0	3.0	0.3	592	11.7	6.5	0.6
8 Italy	7.0	4.1	0.6	553	7.7	6.7	0.9
9 Belgium	5.6	1.6	0.3	569	6.4	2.5	0.4
10 Netherlands	6.5	3.3	0.5	485	6.3	4.8	0.8
11 Austria	1.8	1.8	1.1	637	2.2	1.3	0.6
12 Switzerland	3.3	3.1	0.9	526	3.5	2.3	0.7
13 United States	20.0	10.8	0.5	455	18.2	6.0	0.3
14 Canada	6.8	1.1	0.2	401	5.5	0.8	0.1
15 Japan	8.1	1.1	0.1	466	7.6	2.5	0.3
Total	100.0	100.0		502	100.0	100.0	

^{a, b} see notes to Tables 1 to 4

Table 4.2 Market dependency in Finland's exports and market pattern of OECD demand growth
(excl. SITC 3 mineral fuels etc.)

EXPORT MARKETS	1970			Growth in OECD demand (1970 = 100) 4	1980		
	OECD demand ^a % 1	Finland's exports % 2	Depend ratio (2/1) ^b 3		OECD demand ^a % 5	Finland's exports % 6	Depend ratio (6/5) ^b 7
1 Denmark	2.1	7.0	3.3	380	1.6	7.6	4.7
2 Finland	—	—	—	—	—	—	—
3 Norway	1.8	4.8	2.6	410	1.5	6.7	4.5
4 Sweden	3.4	19.0	5.6	405	2.7	20.2	7.4
5 Germany	14.6	14.5	1.0	530	15.5	16.5	1.1
6 United Kingdom	10.5	25.3	2.4	525	11.0	19.2	1.7
7 France	9.0	5.6	0.6	592	10.6	7.4	0.7
8 Italy	6.9	3.7	0.5	553	7.7	4.0	0.5
9 Belgium	5.6	2.6	0.5	569	6.3	2.2	0.4
10 Netherlands	6.4	5.9	0.9	485	6.2	5.8	0.9
11 Austria	1.7	1.0	0.6	637	2.2	1.2	0.5
12 Switzerland	3.3	2.3	0.7	526	3.5	2.2	0.6
13 United States	19.9	6.3	0.3	455	18.1	5.1	0.3
14 Canada	6.8	1.3	0.2	401	5.5	0.6	0.1
15 Japan	8.1	0.7	0.1	466	7.5	1.3	0.2
Total	100.0	100.0		499	100.0	100.0	

^{a, b} see notes to Tables 1 to 4

Table 4.3 Market dependency in Norway's exports and market pattern of OECD demand growth
(excl. SITC 3 mineral fuels etc.)

EXPORT MARKETS	1970			Growth in OECD demand (1970 = 100) 4	1980		
	OECD demand ^a % 1	Norway's exports % 2	Depend ratio (2/1) ^b 3		OECD demand ^a % 5	Norway's exports % 6	Depend ratio (6/5) ^b 7
1 Denmark	2.1	8.2	3.8	380	1.6	8.3	5.1
2 Finland	1.3	3.0	2.4	475	1.2	4.4	3.7
3 Norway	—	—	—	—	—	—	—
4 Sweden	3.4	18.2	5.4	405	2.7	19.8	7.2
5 Germany	14.7	22.5	1.5	530	15.6	19.1	1.2
6 United Kingdom	10.5	21.2	2.0	525	11.0	16.4	1.5
7 France	9.0	4.0	0.4	592	10.6	5.6	0.5
8 Italy	7.0	3.1	0.4	552	7.7	3.5	0.5
9 Belgium	5.6	2.9	0.5	569	6.4	2.5	0.4
10 Netherlands	6.5	4.0	0.6	485	6.3	6.5	1.0
11 Austria	1.8	0.8	0.5	637	2.2	1.1	0.5
12 Switzerland	3.3	1.5	0.5	526	3.5	1.8	0.5
13 United States	20.0	6.8	0.3	455	18.2	7.8	0.4
14 Canada	6.8	2.3	0.3	401	5.5	0.9	0.2
15 Japan	8.1	1.6	0.2	466	7.6	2.5	0.3
Total	100.0	100.0		500	100.0	100.0	

^{a, b} see notes to Tables 1 to 4

Table 4.4 Market dependency in Sweden's exports and market pattern of OECD demand growth
(excl. SITC 3 mineral fuels etc.)

EXPORT MARKETS	1970			Growth in OECD demand (1970 = 100) 4	1980		
	OECD demand ^a % 1	Sweden's exports % 2	Depend ratio (2/1) ^b 3		OECD demand ^a % 5	Sweden's exports % 6	Depend ratio (6/5) ^b 7
1 Denmark	2.2	12.1	5.6	380	1.6	8.7	5.3
2 Finland	1.3	7.5	5.8	475	1.2	8.1	6.7
3 Norway	1.9	13.0	6.9	410	1.5	11.4	7.5
4 Sweden	—	—	—	—	—	—	—
5 Germany	15.0	15.4	1.0	530	15.8	16.9	1.1
6 United Kingdom	10.7	15.5	1.5	525	11.2	14.2	1.3
7 France	9.1	7.0	0.8	592	10.8	8.8	0.8
8 Italy	7.1	3.8	0.5	552	7.8	5.3	0.7
9 Belgium	5.7	4.4	0.8	569	6.4	4.4	0.7
10 Netherlands	6.6	5.4	0.8	485	6.3	5.9	0.9
11 Austria	1.8	1.7	0.9	637	2.3	2.0	0.9
12 Switzerland	3.4	3.6	1.1	526	3.5	3.1	0.9
13 United States	20.3	7.2	0.4	455	18.4	7.5	0.4
14 Canada	6.9	1.8	0.3	401	5.5	1.6	0.3
15 Japan	8.2	1.6	0.2	466	7.6	2.0	0.3
Total	100.0	100.0		502	100.0	100.0	

^{a, b} see notes to Tables 1 to 4

NOTES

- 1 OECD Trade by Commodities, Ser. B. and Ser. C. Detailed 1982 data for the Netherlands by commodities were not available at the time of the updating of the present study. 1981–82 constant-market-shares calculations are consequently based on 13 markets. 1980 has been retained in many of the overall tables for this reason.
- 2 A list of commodity groups used is found in Appendix 2. The regrouping between SITC Rev 1 and Rev 2 taken into account in this paper only concerns SITC 7 commodities. The constant market shares analysis will be little affected by this approximation. Growth rates in col. 4 of Tables 1 to 4 are, however, subject to reservations.
- 3 OECD being defined throughout the paper as the sum of the countries listed in Appendix 3.
- 4 A detailed description of the method is found in Appendix 1.

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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.¹ 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.²

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.³The 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

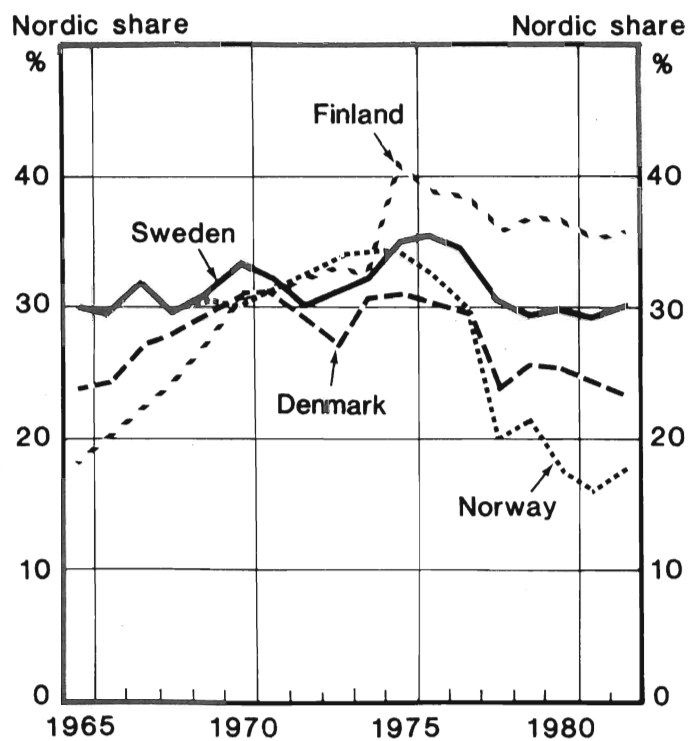
Importing country	Exporting country			
	Denmark	Finland	Norway	Sweden
Denmark	—	3.8	4.1	12.8
Finland	2.4	—	2.1	12.1
Norway	6.1	3.8	—	16.5
Sweden	6.1	6.8	5.2	—
Germany	1.7	0.9	2.2	2.1
United Kingdom	2.1	1.6	2.7	2.8
France	0.6	0.5	0.9	1.5
Italy	0.9	0.4	0.3	1.2
Belgium	0.5	0.3	0.8	1.5
Netherlands	0.9	0.9	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^a

Per cent



^a 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.⁴

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 ^a	285	477	-460	-301
Total	-544	1 060	-1 601	1 084

^a 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.⁵

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.⁶

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.⁷

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
Average						
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
Adjusted average						
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.⁸

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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C STATISTICAL SUPPLEMENT 1950-82

1 A NOTE ON EXPORT SPECIALIZATION IN THE NORDIC COUNTRIES

by Jukka Leskelä, ETLA

By European standards the Nordic countries, except Sweden, are both geographically and productwise heavily specialized in their exports. This phenomenon is evident from Table 1 and Figure 2.

As can be seen from Figure 1.a. geographic specialization has decreased in Denmark and Sweden over the period 1965–82. The ten most important countries' share in total exports¹ has remained rather stable in Finland but increased considerably in Norway. The main factor accounting for the course of development in these two countries is their trade in crude oil. The bilateral trade agreement with the Soviet Union, which is the main supplier of oil to Finland, has made considerable increases in exports to the Soviet Union possible. In the case of Norway official foreign trade statistics give a somewhat biased picture of the geographic pattern of exports, as most of the crude oil produced at the North Sea is first transported to the U.K. – and recorded in the foreign trade statistics

¹ Throughout this note we have consistently used data on total exports (i.e. exports to the whole world) of the countries in question, and not only data on exports to the 14 OECD countries as was done in chapter 6.

Table 1 Indicators of export specialization in Nordic countries 1980

	Denmark	Finland	Norway	Sweden	OECD-Europe
Share of ten most important export countries in total commodity exports, % ^a	75.2	78.0	84.6	69.9	62.5
Hirschmann-Herfindahl index, calculated among 10 most important export countries ^b	0.15	0.15	0.30	0.12	0.12
Share of ten most important two-digit SITC level items in total commodity exports, % ^c	52.2	67.2	78.7	62.2	48.1 ^e
Share of ten most important five-digit SITC level items in total commodity exports, % ^d	20.2	33.2	57.7	13.9	..

^a For longer time series, see Figure 1.a.

^b The index is calculated from the formula $H = \sum_{i=1}^{10} \left(\frac{x_i}{\sum x_i} \right)^2$ (x_i = value of exports to country i), and it varies between 0.1 (exports evenly distributed) and 1.0 (exports concentrated in one country). For longer time series, see Figure 1.b.

^c For more detailed information, see Table 2.

^d For more detailed information, see Table 3.

^e Excluding Greece, Iceland, Portugal and Turkey.

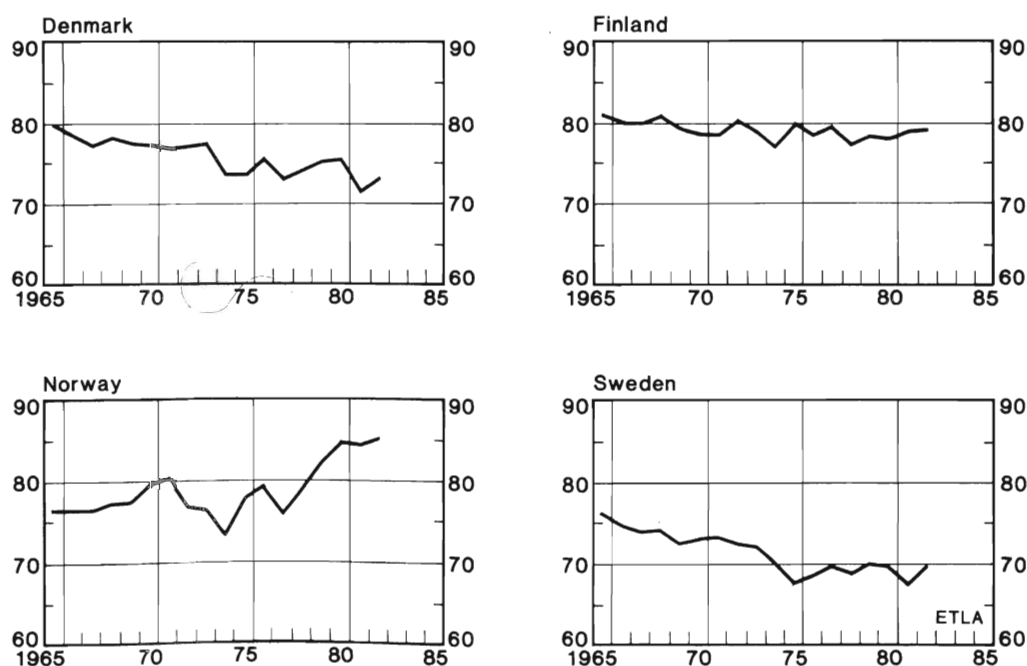
Source: OECD, Statistics of Foreign Trade Serie C, Trade by commodities market summaries: exports, 1980 and Historical Statistics of Foreign Trade 1965–80, Serie A, Paris 1982

as exports to the U.K. If the geographic distribution of crude oil re-exports (from the U.K.) is taken into account, it is estimated that the 10 most important countries cover 81.5 per cent (1980) of Norwegian merchandise exports and the value of the Hirschmann-Herfindahl index falls to 0.16 (1980), which is more in line with the figures for the late 60s and early 70s and with developments in other Nordic countries as well.

Consideration of Figure 2 and Tables 2 and 3 confirms the view that Finland and especially Norway have been heavily specialized productwise, too. In comparing the Nordic countries with other European countries (Figure 2) it is interesting to note that the Nordic countries, even when their exports are aggregated, seem to have a rather specialized structure in their exports. In Horwitz's Special study it has been noted that, with the exception of Sweden, the Nordic countries have specialized in exporting products the demand for which has grown more slowly than world trade on average.

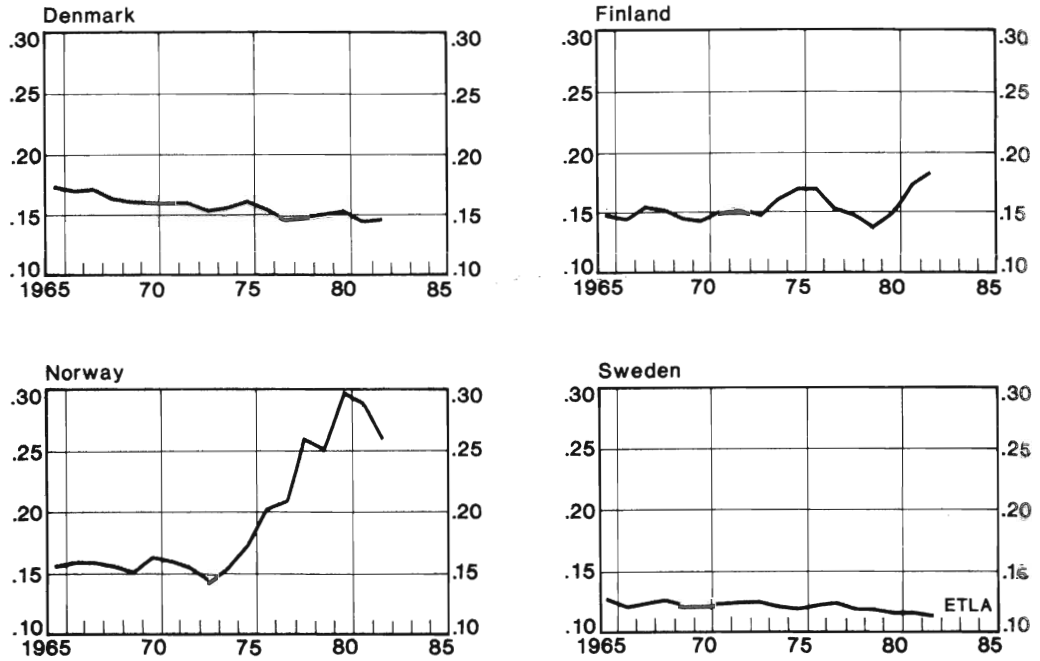
This information gives, of course, important clues to the researchers, observers and forecasters of foreign trade, and economic developments in general, in the respective countries.

Figure 1.a Exports to ten most important customer countries as percentages of total exports of the Nordic countries, 1965–82



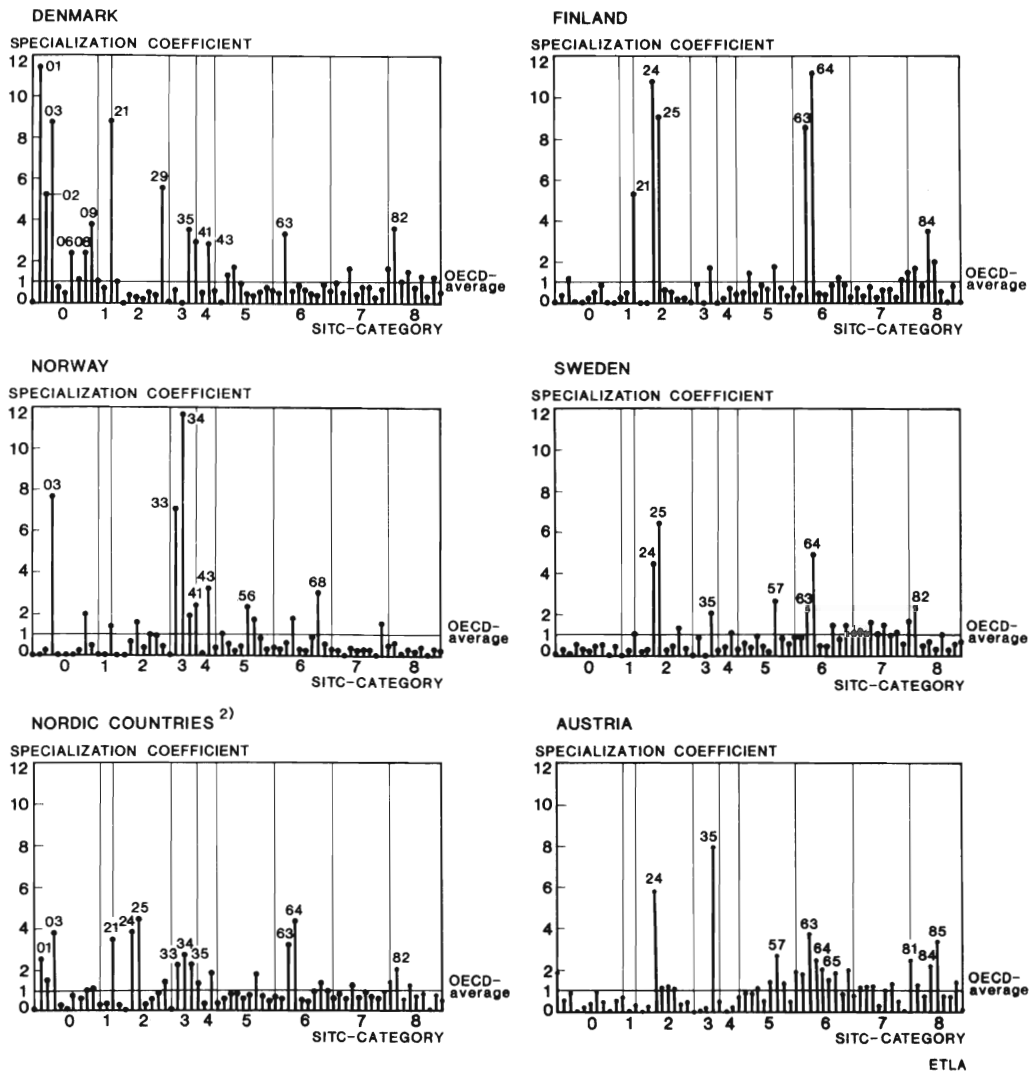
Sources: OECD, Historical Statistics of foreign trade 1965–80, Serie A and Monthly Statistics of Foreign Trade, Serie A

Figure 1.b Hirschmann-Herfindahl¹ Index, calculated among the ten most important export countries, 1965–82



¹ See footnote^b in Table 1
 Sources: OECD, Historical Statistics of foreign trade 1965–80, Serie A and Monthly Statistics of Foreign Trade, Serie A

Figure 2.a Export specialization¹ in selected countries, 1980

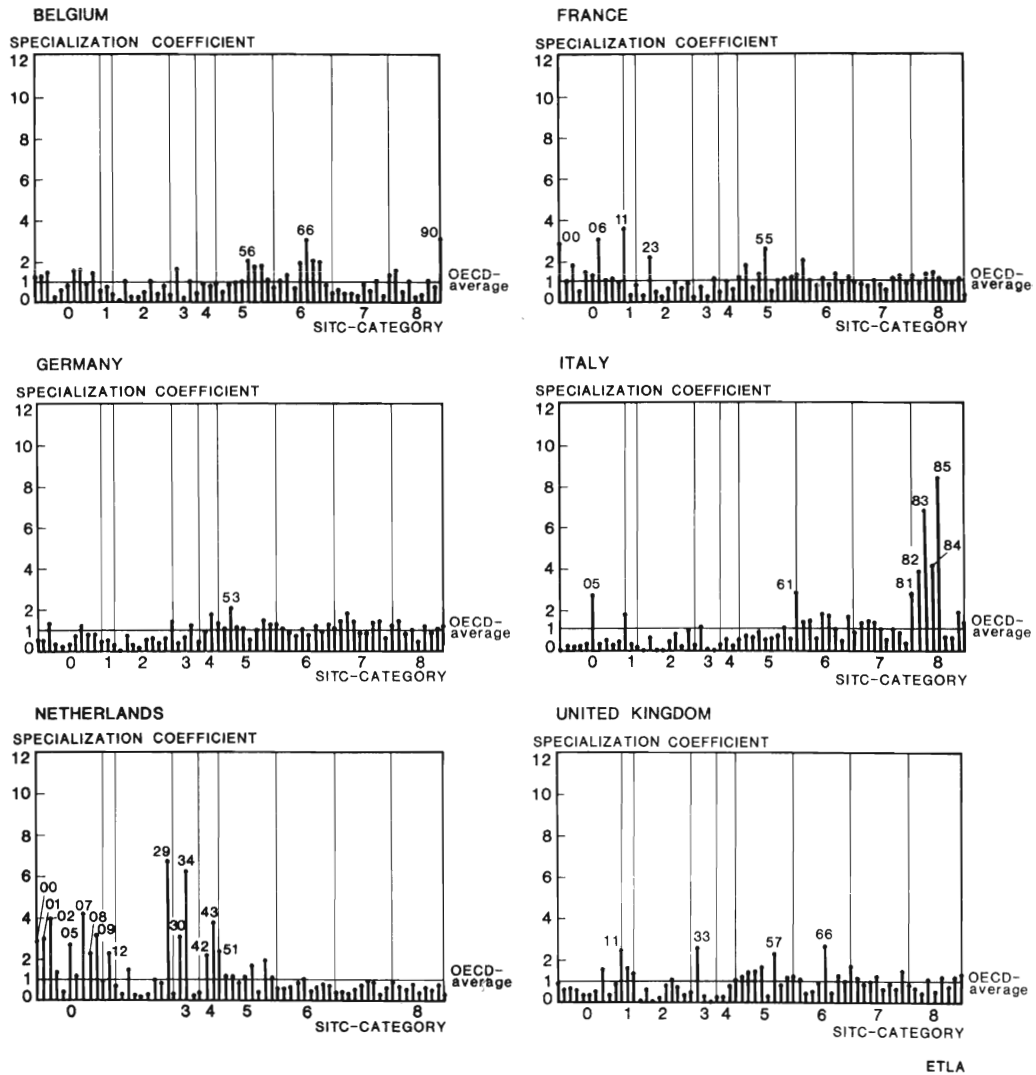


¹ The specialization coefficients have been calculated by dividing export shares (productwise, at 2-digit SITC level) of each country or area by the respective shares of total OECD exports to the whole world. List of SITC-items (at 2-digit level) can be found in Special study 6 by Horwitz.

² Including intra-Nordic trade.

Source: OECD, Statistics of Foreign Trade, Serie C, Trade by commodities, market summaries: exports, 1980

Figure 2.b Export specialization¹ in selected countries, 1980



¹ The specialization coefficients have been calculated by dividing export shares (productwise, at 2-digit SITC level) of each country or area by the respective shares of total OECD exports to the whole world. List of SITC-items (at 2-digit level) can be found in Special study 6 by Horwitz.

Source: OECD, Statistics of Foreign Trade, Serie C, Trade by commodities, market summaries: exports, 1980

Table 2 The ten most important export items in 1980 at two-digit SITC-level¹ in the Nordic countries

Denmark		Finland		Norway		Sweden	
SITC item	% of total merchandise exports	SITC item	% of total merchandise exports	SITC item	% of total merchandise exports	SITC item	% of total merchandise exports
01	14.2	64	22.6	33	34.1	78	11.8
74	6.8	24	10.4	34	14.2	64	9.7
02	5.5	25	6.6	68	8.6	74	7.6
03	5.0	84	5.1	79	4.9	67	7.4
89	4.5	33	4.1	03	4.2	72	5.1
72	4.3	63	3.8	67	4.0	25	4.6
77	3.2	67	3.8	64	3.5	24	4.3
82	3.1	74	3.7	74	1.9	33	4.0
21	2.8	79	3.5	58	1.9	69	3.9
79	2.8	72	3.5	56	1.4	77	3.8
Total	52.2		67.2		78.7		62.2

Note: In 1980 the Nordic countries' total merchandise exports were (in millions of national currency): 95,671 DKK, 52,795 FIM, 91,672 NOK, 131,002 SEK. The conversion rates used in compiling the data at the OECD were (national currency per USD): 5.636 DKK, 3.730 FIM, 4.940 NOK, 4.230 SEK.

¹ List of SITC-items (at 2-digit level) can be found in Special study 6 by Horwitz.

Table 3 Ten most important export items in 1980 at five-digit SITC-level¹ in the Nordic countries

Denmark		Finland		Norway		Sweden	
SITC item	Percent of total merchandise exports	SITC item	Percent of total merchandise exports	SITC item	Percent of total merchandise exports	SITC item	Percent of total merchandise exports
011.30	3.8	248.21	8.8	333.00	31.1	248.21	3.6
012.10	2.9	641.21	5.2	341.40	14.1	251.72	3.0
011.10	2.4	641.10	4.6	684.10	4.7	641.32	1.2
014.90	2.2	251.72	4.1	035.02	1.5	764.91	1.1
024.00	2.1	641.22	2.2	641.10	1.3	641.31	1.0
212.01	1.5	634.20	2.1	683.10	1.2	793.22	0.9
334.30	1.4	641.89	1.9	334.30	1.1	641.89	0.8
034.10	1.3	334.11	1.6	671.62	1.0	951.06	0.8
023.00	1.3	642.10	1.4	034.40	0.8	641.21	0.8
749.20	1.3	641.59	1.3	334.40	0.8	541.79	0.7
Total	20.2		33.2		57.7		13.9

Sources: Board of Customs, Finland, Central Bureau of Statistics, Norway, Central Statistical Office, Denmark and Statistics of Sweden (Utrikeshandel 1980, Del. A)

¹ List of SITC-items mentioned in this table can be found on next page.

List of five-digit SITC items mentioned in Table 2:

011.1 (DEN)	Meat of cattle
011.3 (DEN)	Pork
012.1 (DEN)	Bacon
014.9 (DEN)	Other canned goods
023.0 (DEN)	Butter
024.0 (DEN)	Cheese
034.1 (DEN)	Fish
034.40 (NOR)	Fish fillets, frozen
035.02 (NOR)	Cod (not in fillets), dried, whether or not salted
212.01 (DEN)	Mink
248.21 (FIN, SWE)	Wood of coniferous species, sawn lengthwise, sliced or peeled, but not further prepared
251.72 (FIN, SWE)	Chemical wood pulp, soda or sulphate -bleached or semibleached (other than dissolving grades)
333.00 (NOR)	Petroleum oils, crude and crude oils obtained from bituminous minerals
334.11 (FIN)	Motor spirit (gasoline), including aviation spirit
334.30 (DEN, NOR)	Gas oils
334.40 (NOR)	Fuel oils
341.40 (NOR)	Petroleum gases and other gaseous hydrocarbons
541.79 (SWE)	Medicaments
634.20 (FIN)	Plywood consisting solely of sheets of wood
641.10 (FIN, NOR)	Newsprint
641.21 (FIN, SWE)	Printing paper (other than newsprint) and writing paper, in rolls or sheets, uncoated
641.22 (FIN)	Printing paper (other than newsprint) and writing paper, coated, impregnated, surface-coloured, surface decorated or printed
641.31 (SWE)	Chemical wood pulp, unbleached
641.32 (SWE)	Sack kraft paper, in rolls or sheets
641.59 (FIN)	Other paper and paperboard (including cellulose wadding), in rolls or sheets
641.89 (FIN, SWE)	Paper and paperboard, impregnated, coated, surface-coloured, surface decorated or printed, in rolls or sheets
642.10 (FIN)	Boxes, bags and other packing containers, of paper or paperboard
671.62 (NOR)	Ferro-silicon
683.10 (NOR)	Nickel and nickel alloys, unwrought
684.10 (NOR)	Aluminium and aluminium alloys, unwrought
749.2 (DEN)	Taps, valves etc.
764.91 (SWE)	Parts of electric line telephonic and telegraphic apparatus
793.22 (SWE)	Tankers of all kind
951.06 (SWE)	Bombs, granades, torpedos guided weapons, missiles and similar munitions of war

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2 STATISTICAL APPENDIX

THE NORDIC ECONOMIES 1950–82

For each of the countries Denmark, Finland, Norway, and Sweden we present the following tables covering the whole or parts of the 1950–1982 period:

1 BALANCE OF RESOURCES

Fixed prices

2 GROSS DOMESTIC PRODUCT BY KIND OF ECONOMIC ACTIVITY

Fixed prices

3 BALANCE OF MANPOWER RESOURCES.

4 KEY DATA ON:

A External Balance

B Public sector

C Manufacturing

D Households/Private sector

E Prices

DENMARK

Notes and sources for the tables covering Denmark are given at the end of the Danish section in the Table Appendix.

DENMARK: Balance of resources 1950–1983 Million DKK, 1975-prices

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
GDP at market price	92 699	91 030	93 353	98 919	102 740	101 913	103 828	107 630	109 927	118 232
Imports	14 734	14 038	13 829	15 704	18 673	18 529	20 059	20 708	22 053	26 745
Total resources	107 433	105 068	107 182	114 623	121 413	120 442	123 887	128 338	131 980	144 977
Exports (goods and services)	13 360	15 135	15 102	16 619	18 179	19 565	19 818	21 555	23 792	25 434
Investment	16 250	14 950	16 133	17 795	18 775	17 317	18 178	19 123	20 035	23 863
– private	14 306	13 016	14 119	15 168	15 649	14 100	14 790	15 903	16 532	20 318
– public	1 944	1 934	2 014	2 627	3 126	3 217	3 388	3 220	3 503	3 545
Consumption	73 971	73 939	75 406	78 206	82 723	83 012	84 079	85 216	88 001	92 936
– private	57 647	56 332	56 810	58 204	61 793	61 897	62 934	63 445	66 130	69 603
– public	16 324	17 607	18 596	20 002	20 930	21 115	21 145	21 771	21 871	23 333
(Inventory changes)	3 851	1 044	541	2 002	1 736	547	1 803	2 444	94	2 744
Total demand	107 433	105 068	107 182	114 623	121 413	120 442	123 887	128 338	131 980	144 977

DENMARK: Balance of resources

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
GDP at market price	125 210	133 035	140 696	141 313	155 406	162 488	167 320	173 455	179 966	191 808
Imports	29 402	30 629	34 953	34 266	41 366	44 167	46 600	49 076	51 473	57 974
Total resources	154 612	163 664	175 649	175 579	196 772	206 655	213 920	222 531	231 439	249 782
Exports (goods and services)	27 932	28 984	30 493	33 756	37 246	40 350	41 998	43 441	47 654	50 400
Investment	25 902	29 187	31 249	30 247	37 044	38 868	40 156	42 363	43 110	48 310
– private	22 046	24 737	26 241	25 500	31 484	32 329	33 238	34 491	34 716	39 215
– public	3 856	4 450	5 008	4 747	5 560	6 539	6 918	7 872	8 394	9 095
Consumption	96 705	103 348	110 652	111 153	124 080	124 080	130 661	136 678	139 756	148 609
– private	72 518	77 916	82 683	82 430	89 191	92 164	96 887	100 348	101 714	107 980
– public	24 187	25 432	27 969	28 723	30 911	31 916	33 774	36 330	38 042	40 629
(Inventory changes)	4 074	2 144	3 254	424	2 378	3 356	1 106	48	992	2 463
Total demand	154 612	163 664	175 649	175 579	196 772	206 655	213 920	222 531	231 439	249 782

DENMARK: Balance of resources

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
GDP at market price	196 170	200 974	211 926	220 045	218 426	216 257	230 340	235 721	239 882	248 717
Imports	62 871	62 565	63 148	72 669	70 095	67 080	78 492	78 611	79 057	83 215
Total resources	259 041	263 539	275 074	292 714	288 521	283 337	308 832	314 332	318 939	331 932
Exports (goods and services)	53 005	55 704	58 878	63 390	66 191	65 050	67 809	71 084	72 503	78 469
Investment	49 467	50 311	54 633	57 008	51 900	45 588	53 513	52 308	53 050	52 957
– private	39 715	40 135	44 712	48 183	43 446	37 421	45 222	43 853	44 530	n.a.
– public	9 752	10 176	9 921	8 825	8 454	8 167	8 291	8 455	8 520	n.a.
Consumption	154 663	156 329	160 730	169 084	167 900	173 124	184 928	188 981	193 786	199 228
– private	111 236	110 530	112 300	118 721	115 768	119 942	129 372	132 091	133 371	135 271
– public	43 427	45 799	48 430	50 363	52 132	53 182	55 556	56 890	60 415	63 957
(Inventory changes)	1 907	1 195	833	3 232	2 530	–424	2 581	1 958	–399	1 278
Total demand	259 041	263 539	275 074	292 714	288 521	283 337	308 832	314 332	318 939	331 932

DENMARK: Balance of resources

	1980	1981	1982	Million DKK, current prices 1980
GDP at market price	247 608	245 855	254 640	373 786
Imports	79 181	77 783	79 985	126 205
Total resources	326 789	323 637	334 625	499 991
Exports (goods and services)	83 204	88 493	90 489	122 256
Investment	46 795	38 953	41 295	70 312
– private	n.a.	n.a.	n.a.	n.a.
– public	n.a.	n.a.	n.a.	n.a.
Consumption	197 647	197 191	202 341	
– private	130 956	128 937	131 265	208 814
– public	66 691	68 254	71 076	99 734
(Inventory changes)	–857	–1 000	500	–1 125
Total demand	326 789	323 637	334 625	499 991

DENMARK: Gross domestic product by kind of economic activity 1950–1982
 Million DKK, 1950–1966 (1955-prices); 1966–1982 (1975-prices)

	1955-prices									
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Manufacturing	7 498	7 508	7 284	7 618	8 152	8 259	8 332	8 682	8 981	10 021
Agriculture, forestry, fishing	5 191	5 087	5 400	5 747	5 327	5 302	5 555	6 013	5 914	5 667
Construction	1 834	1 850	1 884	2 105	2 147	2 061	2 073	2 122	2 181	2 425
Private services	9 224	9 290	9 424	9 898	10 360	10 438	10 576	11 184	11 643	12 351
Public sector production	2 102	2 214	2 281	2 465	2 544	2 616	2 697	2 760	2 795	2 905
GDP	25 849	25 949	26 273	27 833	28 530	28 676	29 233	30 761	31 514	33 369

DENMARK: Gross domestic product by kind of economic activity

	1955-prices						1975-prices				
	1960	1961	1962	1963	1964	1965	1966	1966	1967	1968	1969
Manufacturing	10 811	11 313	12 294	12 512	13 844	14 694	15 165	27 944	28 735	30 860	32 541
Agriculture, forestry, fishing	6 027	6 259	6 315	5 966	6 334	6 554	6 295	10 596	10 933	11 168	11 325
Construction	2 605	2 880	3 030	3 000	3 530	3 760	3 835	18 031	18 689	18 251	19 084
Private services	13 121	13 863	14 437	14 713	15 729	16 445	17 006	66 606	68 390	71 828	77 128
Public sector production	3 050	3 277	3 622	3 659	3 921	4 089	4 363	23 918	25 984	27 341	28 995
GDP	35 614	37 592	39 698	39 850	43 358	45 542	46 664	145 385	150 772	157 413	166 711

Imputed bank service charges can not be subtracted from the various sectors. Therefore total figures will add to more than 100 per cent 1966–1982.

DENMARK: Gross domestic product by kind of economic activity

	1975-prices									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Manufacturing	33 661	34 160	37 135	39 290	39 878	39 046	40 935	41 193	41 475	44 173
Agriculture, forestry, fishing	9 430	10 483	10 579	9 829	11 969	10 927	9 846	11 289	11 593	11 673
Construction	19 877	20 365	22 093	20 376	18 849	16 669	17 567	17 209	17 049	15 871
Private services	78 042	78 994	82 128	88 671	87 391	86 741	93 858	95 563	97 097	102 148
Public sector production	31 101	33 050	34 935	36 775	38 051	38 683	40 783	42 610	44 904	47 478
GDP	169 741	174 662	184 161	191 201	192 505	188 713	199 693	204 941	209 046	218 542

DENMARK: Gross domestic product by kind of economic activity

	1975-prices		
	1980	1981	1982
Manufacturing	44 167	44 404	45 204
Agriculture, forestry, fishing	11 788	13 044	14 592
Construction	13 813	11 490	11 692
Private services	100 735	101 751	104 648
Public sector production	49 771	51 572	53 537
GDP	218 279	219 727	227 442

DENMARK: Balance of manpower resources 1950–1982
1 000 persons

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Population	4 252	4 285	4 315	4 349	4 389	4 424	4 454	4 479	4 501	4 532
Thereof 15–65 years	2 757	2 765	2 774	2 788	2 806	2 821	2 833	2 842	2 860	2 889
Labour force	1 935	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Employment in										
– manufacturing	524	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
– private services	494	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
– public sector	167	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

DENMARK: Balance of manpower resources

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Population	4 566	4 594	4 630	4 666	4 703	4 741	4 779	4 820	4 855	4 879
Thereof 15–65 years	2 923	2 957	2 994	3 030	3 055	3 076	3 096	3 113	3 130	3 144
Labour force	2 048	n.a.	n.a.	n.a.	n.a.	2 252	2 295	2 340	2 347	2 356
Employment in										
– manufacturing	591	n.a.	n.a.	n.a.	n.a.	636	NA	669	n.a.	678
– private services	595	n.a.	n.a.	n.a.	n.a.	634	n.a.	756	n.a.	761
– public sector	235	n.a.	n.a.	n.a.	n.a.	303	n.a.	368	n.a.	413

DENMARK: Balance of manpower resources

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Population	4 929	4 963	4 992	5 022	5 045	5 060	5 073	5 088	5 104	5 117
Thereof 15-65 years	3 176	3 197	3 210	3 226	3 235	3 239	3 245	3 257	3 275	3 296
Labour force	2 380	2 409	2 424	2 447	2 479	2 486	2 531	2 579	2 645	2 627
Employment in										
- manufacturing	687	677	653	652	646	633	638	635	651	625
- private services	754	756	745	755	757	758	779	786	798	791
- public sector	441	470	543	565	600	618	642	678	716	747

DENMARK: Balance of manpower resources

	1980	1981	1982
Population	5 123	5 122	n.a.
Thereof 15-65 years	3 316	3 339	n.a.
Labour force	n.a.	2 674	n.a.
Employment in			
- manufacturing	n.a.	505	n.a.
- private services	n.a.	} 1 509	n.a.
- public sector	n.a.		

DENMARK: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-1.1	-1.6	-3.2	0.4	-2.1	-1.5	-0.7	-2.1	-1.5	-2.4
Balance on current account excl. interest payments net	-1.1	-1.6	-3.2	0.4	-2.1	-1.6	-0.9	-2.2	-1.5	-2.6
Interest payments net	0.1	-0.1	0.0	0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3
Net foreign debt	1.0	2.4	5.2	4.3	5.7	6.4	7.4	9.2	9.3	10.8
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes	12.4	12.3	13.2	14.2	13.7	14.7	15.6	16.0	17.1	16.9
Indirect taxes	12.5	12.2	13.2	14.1	13.9	14.2	15.2	15.3	17.2	17.3
Social security contributions	1.2	1.2	1.2	1.2	1.5	1.6	1.7	1.7	1.7	1.6
Transfers to private sector	7.5	7.6	7.8	8.1	7.7	8.3	8.9	9.8	10.6	9.6
Transfers to households	n.a.									n.a.
Total public (consolidated) surplus/deficit	n.a.									n.a.

DENMARK: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-2.9	-1.7	0.6	-1.9	-1.9	-8.3	-4.9	-4.0	-2.0	-3.1
Balance on current account excl. interest payments net	-3.2	-2.0	0.2	-1.1	-1.4	-0.6	-4.3	-3.2	-1.1	-2.7
Interest payments net	-0.3	-0.4	-0.6	-0.6	-0.8	-0.9	-0.9	-1.2	-1.6	-2.0
Net foreign debt	12.6	13.0	11.2	10.8	12.2	12.4	16.1	20.5	21.0	24.7
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes	21.4	24.3	23.6	24.5	27.6	25.1	24.6	24.0	24.4	24.7
Indirect taxes	17.4	17.4	17.6	17.1	16.1	15.7	16.4	17.3	18.4	19.1
Social security contributions	1.6	1.6	1.7	0.8	0.5	0.5	0.6	0.6	0.6	0.7
Transfers to private sector	11.4	14.1	14.3	14.3	15.6	16.7	16.6	14.3	18.4	5.4
Transfers to households	n.a.	10.9	10.9	10.7	11.6	13.4	13.1	13.8	14.5	15.0
Total public (consolidated) surplus/deficit	n.a.	3.9	3.9	5.2	3.1	-1.4	-0.3	-0.6	-0.4	-1.7

DENMARK: Key variables

	1980	1981	1982
EXTERNAL BALANCE (all figures in percent of GDP)			
Trade balance	-1.1	0.4	0.2
Balance on current account excl. interest payments net	-1.0	0.2	-0.2
Interest payments net	-2.6	-3.3	-3.8
Net foreign debt	26.7	30.2	33.0
PUBLIC SECTOR (all data in percent of GDP)			
Direct taxes	25.7	25.3	25.1
Indirect taxes	18.9	18.3	17.7
Social security contributions	0.8	1.0	1.3
Transfers to private sector	19.9	20.9	n.a.
Transfers to households	16.1	17.2	n.a.
Total public (consolidated) surplus/deficit	-3.3	7.1	n.a.

DENMARK: Key variables 1950–1982

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
MANUFACTURING										
Labor productivity (annual percentage change)	n.a.	1.3	1.3	1.3	1.3	1.3	5.7	5.7	5.7	5.7
Investment in percent of value added	12.1	11.8	10.6	8.1	9.1	8.8	7.1	9.1	11.1	10.1
Investments (annual percentage change)	n.a.	-10.2	-7.3	-1.6	21.6	-2.8	-18.7	37.8	4.5	26.0
PRIVATE SECTOR										
Disposable income (annual % change)	n.a.									n.a.
Saving ratio	n.a.									n.a.
PRICES										
Consumer price (annual change)	6.0	10.2	3.8	1.0	0.0	5.6	5.9	2.6	0.9	1.7
Producer price (annual change)	n.a.	16.9	1.5	-1.9	-1.4	3.3	5.2	1.8	1.7	0.7
Export price (annual change)	0.0	15.2	-4.0	-6.2	-0.8	2.8	5.7	-1.0	-5.0	2.3
Import price (annual change)	7.5	-19.8	-1.5	-8.9	-3.3	2.2	4.3	2.4	-7.1	-3.4
Profit margin in industry	20.7	17.9	17.2	18.9	19.0	18.3	18.0	18.5	18.9	19.7
Rate of return in industry	n.a.									n.a.
Key interest rate	4.59	5.37	5.62	5.50	5.75	6.25	6.42	6.50	5.60	5.76

DENMARK: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
MANUFACTURING										
Labor productivity (annual percentage change)	5.7	2.0	5.5	1.4	8.1	5.1	3.4	7.6	7.9	1.1
Investment in percent of value added	13.4	14.5	14.1	12.6	12.8	13.1	12.3	11.4	9.2	10.9
Investments (annual percentage change)	38.4	15.1	5.2	-14.3	15.2	10.0	-10.4	-2.3	-17.1	26.3
PRIVATE SECTOR										
Disposable income (annual % change)	n.a.	7.5	4.1	-1.1	8.5	3.6	0.3	3.9	2.1	7.4
Saving ratio	17.5	18.6	17.5	16.9	17.9	18.6	16.2	16.6	15.7	15.9
PRICES										
Consumer price (annual change)	1.1	3.6	7.4	6.0	3.3	5.2	7.1	6.9	8.6	4.2
Producer price (annual change)	0.5	2.1	2.5	2.6	2.4	3.4	4.6	0.9	2.4	2.6
Export price (annual change)	-0.9	0.0	2.1	0.0	0.0	4.0	1.9	1.0	2.8	2.8
Import price (annual change)	2.0	-15.6	1.8	10.9	0.9	5.0	2.1	0.5	6.0	2.2
Profit margin in industry	19.9	19.9	20.5	19.2	19.7	18.0	16.9	17.2	18.0	18.3
Rate of return in industry	n.a.									n.a.
Key interest rate	6.04	6.60	6.58	6.45	7.07	8.62	8.74	9.06	8.69	9.66

DENMARK: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
MANUFACTURING										
Labor productivity (annual percentage change)	1.7	4.7	7.4	2.3	4.4	7.8	4.6	-2.0	1.2	5.1
Investment in percent of value added	11.4	10.5	10.7	11.7	12.4	10.2	10.8	9.7	9.7	9.7
Investments (annual percentage change)	7.6	-8.7	-0.7	14.7	7.2	-24.0	17.4	6.5	-4.9	3.6
PRIVATE SECTOR										
Disposable income (annual % change)	-0.4	-1.5	6.0	4.2	-1.8	3.7	5.9	3.1	0.6	2.9
Saving ratio	14.2	18.6	22.5	21.1	20.5	22.5	20.5	20.7	20.8	19.8
PRICES										
Consumer price (annual change)	5.8	5.8	6.6	9.3	15.3	9.6	9.0	11.1	10.0	9.6
Producer price (annual change)	7.4	6.3	2.6	13.6	19.4	9.4	3.7	7.8	5.4	7.4
Export price (annual change)	4.4	4.2	3.0	8.7	22.7	8.7	6.0	8.5	2.6	9.3
Import price (annual change)	6.2	4.8	2.4	5.5	19.6	9.6	6.0	7.2	6.8	5.4
Profit margin in industry	17.1	16.5	19.6	19.5	17.5	17.9	19.5	18.5	18.5	18.8
Rate of return in industry	n.a.									n.a.
Key interest rate	12.17	11.87	11.95	14.64	15.73	12.39	16.52	17.65	18.37	19.00

DENMARK: Key variables

	1980	1981	1982	Unit	Value in 1980
MANUFACTURING					
Labor productivity (annual percentage change)	2.1	5.7	1.6	real growth, GDP/employee, pct. p.a. 1980: 0.125 mill. DKK/employee	
Investment in percent of value added	10.0	8.8	n.a.		
Investments (annual percentage change)	3.8	2.1	n.a.	real growth, pct. p.a.	6 707 mill. DKK. ¹
PRIVATE SECTOR					
Disposable income (annual % change)	-1.4	1.6	4.8	pct. p.a., real growth	261 909 mill. DKK.
Saving ratio	19.6	21.9	23.5	pct. of disp. income	51 454 mill. DKK.
PRICES					
Consumer price (annual change)	12.3	11.7	10.1	pct. p.a.	
Producer price (annual change)	13.9	n.a.	n.a.		
Export price (annual change)	15.5	14.1	10.6		
Import price (annual change)	8.5	n.a.	n.a.		
Profit margin in industry	18.3	18.6	n.a.	pct. of turnover until 1972; from 1972 pct. of value added.	
Rate of return in industry	n.a.	n.a.	n.a.		
Key interest rate	19.66	17.82	16.63	pct. p.a., end of year.	

DENMARK**Historical statistics – notes and sources****Tables: Balance of resources, GDP by kind of economic activity, and balance of manpower resources.**

Sources: Danmark Statistik, various publications.
Own calculations.

Note: Figures for 1981 and 1982 are provisional.

Table: 'Key variables'

Notes and sources:

All figures are calculated as percentages of GDP in market prices, as published in S.E. 1983:11, Nationalregnskab, Offentlige finanser, Betalingsbalance, except for the last three years, where the source is "Nyt fra Danmarks Statistik", no. 228, November 1983. The figures for direct and indirect taxes and for social security contributions are from the former source. The other items are own calculations, based on figures from the following sources:

External balance:	1950–1959: S. O: 1950–1960. 1960–1982: S 10 Å, various issues.
Public sector:	1960–1965: S 10 Å, 1970 1965–1970: S 10 Å, 1977 1971–1981: NRS 1966–1981.

The figures for "transfers to private sector" are not comparable throughout the period; there are breaks in the time series between 1968 and 1969, and again between 1970 and 1971. "Direct subsidies to business" is defined as "subsidies" not linked to products in the source. This does not cover various disguised subsidies like favourable interest rates for export credits or the like, and it does not cover capital transfers. Some types of capital transfers could be defined as subsidies; these items would be quite small, however, "Transfers to households" only covers various social benefits; there may be some further transfers to households disguised in the unspecified transfers to the private sector in the source. The latter item is always less than 0.8 pct of GDP.

Manufacturing data (Incl. profit margin in industry)

General note: The definition of "Manufacturing" in the published statistics has changed many times in the period; for most of the period, the definitions used are ISIC 31–39, establishments with more than 20 or 25 employees. Some cautions should be taken in the use of these figures. The figures for labour productivity refer to growth in GDP at factor cost in manufacturing, deflated by the number of employed people in the sector, i.e. without corrections for number of hours worked. As the average working hours have declined considerably in the period productivity growth on an hourly basis is considerably higher than the figures given here.

Private sector:

Data refer to the total private sector, not to households. Disposable income in current prices has been deflated by the implicit GDP-deflator to calculate the given growth rates. Definition change from 1969 to 1970.

Sources: 1960–1971: S 10 Å 1970 & S 10 Å 1975
1971–1980: NRS 1966–1981
1981–1982: S.E. 1983:10, Nationalregnskab.

Consumer price:

Sources as above, and 1950–1959: S.O. 1950–1960.
1981–1982: S 10 Å 1983

Producer price, export price, and import price

These time series are based on rather rough estimates. The last digit is not significant; sensitivity-tests showed variations of ½ a percentage point or more in the figures. But the trend values given by the figures should be O.K.

Methods of calculation:

Producer prices: Figures for value of production or for turnover have been divided by the published index of production for manufacturing industry.

Export and import prices of manufactured products: Figures are based on the unit value indexes for manufactured exports and a weighted average of the indexes of unit values for imports of various categories of manufactured goods.

Manufacturing, private sector, and prices

Sources are: 1950–1959: S.O. 1950–1960.

1960–1982: S 10 Å, various issues

Key interest rate

Interest rates given are for 1950–1969 the average annual yields of bonds with a maturity of around 40 years. Source: IMF, International Financial Statistics, various issues. Interest rates for 1970–1982 are the yields at the end of the year for bonds with a maturity of 10 years with a nominal rate of interest of 10 pct. Source: S 10 Å, various issues.

Codes:

S. O. 1950–1960: Statistisk Oversigt 1950–1960, published 1961.

S 10 Å: Statistisk tiårsoversigt, published annually since 1970.

NRS 1966–1981: Nationalregnskabsstatistik 1966–1981, published 1983.

S.E.: Statistiske Efterretninger, several hundred issues a year.

All published by the national statistical bureau, "Danmarks Statistik", Copenhagen.

FINLAND

FINLAND: Balance of resources 1950–1982

Million FIM 1950–1960 (1954 prices); 1960–1982 (1975 prices)

	1954-prices										
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
GDP at market price	7 263.8	7 940.7	8 214.0	8 224.1	8 968.8	9 645.7	9 837.5	9 987.0	9 979.2	10 702.7	11 765.7
Imports	1 155.0	1 520.0	1 750.0	1 363.0	1 689.7	1 989.7	2 173.9	2 134.6	1 915.2	2 317.0	2 848.1
Total resources	8 418.8	9 460.7	9 964.0	9 587.1	10 658.5	11 635.4	12 011.4	12 121.6	11 894.4	13 019.7	14 613.8
Exports (goods and services)	1 434.3	1 673.4	1 568.5	1 605.8	1 845.8	1 989.9	1 959.4	2 187.6	2 170.1	2 458.1	2 824.9
Investment	1 689.5	1 852.0	2 089.0	2 170.4	2 354.9	2 507.2	2 700.0	2 651.4	2 753.9	3 005.0	3 505.9
– private	1 381.2	1 581.5	1 751.3	1 696.3	1 895.9	2 054.5	2 178.2	2 080.1	2 094.9	2 345.3	2 880.7
– public	301.3	270.5	338.6	474.1	459.0	452.7	521.8	571.3	659.0	659.7	625.2
Consumption	5 453.0	5 798.3	6 148.6	6 117.4	6 474.4	7 030.8	7 313.6	7 239.6	7 118.5	7 631.7	8 200.2
– private	4 565.7	4 918.0	5 224.5	5 125.6	5 482.3	5 949.8	6 202.4	6 082.5	5 921.5	6 347.9	6 870.0
– public	887.3	880.3	924.1	991.8	992.1	1 081.0	1 111.2	1 157.1	1 197.0	1 283.8	1 330.2
(Inventory ¹ changes)	–158.0	137.0	157.0	–306.5	– 16.6	107.5	38.4	43.0	–148.1	– 75.1	82.8
Total demand	8 418.8	9 460.7	9 964.0	9 587.1	10 658.4	11 635.4	12 011.4	12 121.6	11 894.4	13 019.7	14 613.8

¹ Including statistical discrepancy

Source: National Accounts

FINLAND: Balance of resources

	1975-prices									
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
GDP at market price	52 502.0	56 483.3	57 994.1	59 913.7	63 081.9	66 415.9	67 813.7	69 380.8	71 136.1	77 979.6
Imports	11 650.1	12 589.0	13 295.8	12 926.2	15 589.1	16 877.1	17 473.9	17 421.2	16 736.9	20 466.4
Total resources	64 152.1	69 072.3	71 289.9	72 839.9	78 671.0	83 293.0	85 287.6	86 802.0	87 873.0	98 446.0
Exports (goods and services)	11 803.5	12 410.6	13 287.9	13 578.7	14 367.8	15 174.4	16 146.2	17 106.9	18 814.5	21 963.7
Investment	15 779.5	17 230.3	17 277.1	16 664.0	17 742.5	19 617.3	20 308.1	19 947.3	18 891.5	21 262.9
– private	13 316.7	14 819.2	14 741.1	13 910.7	14 437.1	15 978.1	16 776.1	16 308.2	15 237.6	17 727.4
– public	2 462.8	2 411.1	2 536.0	2 753.3	3 305.4	3 639.2	3 532.0	3 639.1	3 653.9	3 535.5
Consumption	36 478.1	39 075.4	41 551.1	43 567.2	45 576.1	47 908.9	49 425.8	50 804.4	51 588.0	56 100.4
– private	28 559.7	30 710.0	32 501.6	33 876.8	35 686.5	37 555.2	38 578.8	39 442.2	39 544.2	43 652.5
– public	7 918.4	8 365.4	9 049.5	9 690.4	9 889.6	10 353.7	10 847.0	11 362.2	12 043.8	12 447.9
(Inventory ¹ changes)	91.0	356.0	–826.2	–970.0	984.6	592.4	–592.5	–1 056.6	–1 421.0	–881.0
Total demand	64 152.1	69 072.3	71 289.9	72 839.9	78 671.0	83 293.0	85 287.6	86 802.0	87 873.0	98 446.0

FINLAND: Balance of resources

	1975-prices									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
GDP at market price	84 147.8	85 694.5	92 158.0	98 179.7	101 290.0	101 882.3	102 140.7	102 512.2	104 845.1	112 812.7
Imports	24 620.2	24 473.1	25 502.9	28 927.1	30 859.6	31 019.5	29 983.0	28 135.1	27 254.1	31 635.4
Total resources	108 768.0	110 167.6	117 660.9	127 106.8	132 149.6	132 901.8	132 123.7	130 647.3	132 099.2	144 448.1
Exports (goods and services)	23 882.9	23 583.6	26 994.4	28 853.3	28 664.7	24 717.3	28 385.6	31 064.8	33 583.1	36 656.9
Investment	24 029.4	25 064.5	26 713.3	28 884.6	29 918.1	31 620.8	28 850.1	27 295.3	24 919.0	25 854.3
– private	20 909.0	21 928.7	23 026.1	25 458.7	26 594.1	27 985.8	25 368.7	23 791.6	21 388.7	22 272.1
– public	3 120.4	3 135.8	3 687.2	3 425.9	3 324.0	3 635.0	3 481.4	3 503.7	3 530.3	3 582.2
Consumption	59 526.0	61 153.3	65 901.7	69 782.9	71 680.1	74 540.4	76 068.4	76 032.4	78 252.0	82 242.8
– private	46 381.9	47 231.2	50 863.1	53 874.4	55 029.6	56 750.0	57 276.3	56 470.1	57 939.3	61 182.7
– public	13 144.1	13 922.1	15 038.6	15 908.5	16 650.5	17 790.4	18 792.1	19 562.3	20 312.7	21 060.1
(Inventory ¹ changes)	1 329.7	366.2	-1 948.5	-414.0	1 886.7	2 023.3	-1 180.4	-3 745.2	-4 654.9	-305.9
Total demand	108 768.0	110 167.6	117 660.9	127 106.8	132 149.6	132 901.8	132 123.7	130 647.3	132 099.2	144 448.1

FINLAND: Balance of resources

	1975-prices		
	1980	1981	1982*
GDP at market price	119 627.1	121 462.4	124 521.7
Imports	35 374.4	34 012.7	34 463.5
Total resources	155 001.5	155 475.1	158 985.2
Exports (goods and services)	39 966.1	41 689.9	40 100.4
Investment	28 577.2	28 934.2	29 789.8
– private	24 670.7	24 998.2	25 634.6
– public	3 906.5	3 936.0	4 155.2
Consumption	84 939.4	86 688.9	90 381.1
– private	62 947.1	63 930.9	66 412.1
– public	21 992.3	22 758.0	23 969.0
(Inventory ¹ changes)	1 518.8	-1 837.9	-1 286.1
Total demand	155 001.5	155 475.1	158 985.2

* Preliminary data

FINLAND: Gross domestic product by kind of economic activity 1950–1982
 Million FIM. 1950–1960 (1954-prices), 1960–1982 (1975-prices)

	1954-prices										
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Manufacturing industry	1 666.5	1 895.3	1 836.3	1 902.0	2 159.4	2 373.6	2 429.5	2 468.9	2 375.3	2 609.3	2 956.0
Agriculture, forestry and mining	1 697.8	1 848.6	1 921.6	1 777.6	1 944.5	1 925.7	1 861.4	1 960.4	2 029.6	2 082.3	2 292.5
Construction	640.5	658.2	688.8	761.4	791.0	789.2	824.6	848.3	907.5	959.9	1 004.3
All private services	1 708.4	1 876.7	1 979.9	2 013.7	2 186.9	2 449.8	2 549.2	2 557.8	2 549.6	2 776.1	3 033.0
Public sector production	577.3	595.6	623.7	644.3	669.9	706.7	729.3	759.9	796.4	836.1	861.2
GDP (at market prices)	7 263.8	7 940.7	8 214.0	8 224.1	8 968.8	9 645.7	9 837.5	9 987.0	9 979.2	10 702.7	11 765.7

Source: National Accounts

FINLAND: Gross domestic product by kind of economic activity

	1975-prices									
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Manufacturing industry	10 779.9	11 773.1	12 327.8	12 795.8	13 675.8	14 506.0	15 243.4	15 668.5	16 540.6	18 670.3
Agriculture, forestry and mining	10 691.5	11 436.5	10 675.7	10 677.3	11 314.7	11 231.9	10 426.2	10 515.7	10 999.3	11 663.1
Construction	5 566.9	5 769.1	5 780.2	5 973.0	6 145.9	6 656.4	6 719.6	6 866.8	6 622.2	7 098.5
All private services	16 315.0	17 499.1	18 546.9	19 410.4	20 366.5	21 590.3	22 528.1	23 127.9	23 577.3	25 373.1
Public sector production	6 204.7	6 517.3	6 830.2	7 160.7	7 451.0	7 769.7	8 103.2	8 459.7	8 899.5	9 378.8
GDP (at market prices)	52 502.0	56 483.3	57 994.1	59 913.7	63 081.9	66 415.9	67 813.7	69 380.8	71 136.1	77 979.6

FINLAND: Gross domestic product by kind of economic activity

	1975-prices									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Manufacturing industry	20 734.2	21 061.0	23 581.4	25 110.9	26 370.1	25 282.7	25 665.2	25 427.5	26 477.4	29 396.8
Agriculture, forestry and mining	12 091.9	11 713.8	11 393.5	11 324.3	10 842.0	10 357.4	10 523.4	10 737.8	10 935.7	12 182.8
Construction	7 581.8	7 433.4	8 086.4	8 850.9	9 023.0	9 374.2	8 533.0	8 542.1	8 327.8	8 396.3
All private services	27 095.9	28 236.0	30 295.8	32 363.8	33 744.5	34 633.2	34 942.3	34 578.6	35 415.2	37 525.0
Public sector production	9 841.7	10 319.3	10 938.6	11 633.1	12 387.2	13 027.2	13 787.2	14 404.5	15 012.6	15 637.3
GDP (at market prices)	84 147.8	85 694.5	92 158.0	98 179.7	101 290.0	101 882.3	102 140.7	102 512.2	104 845.1	112 812.7

FINLAND: Gross domestic product by kind of economic activity

	1975-prices		
	1980	1981	1982*
Manufacturing industry	31 870.7	32 987.9	33 617.9
Agriculture, forestry and mining	12 985.9	12 253.8	12 296.7
Construction	8 964.9	8 785.5	9 112.6
All private services	39 266.4	40 319.7	41 542.3
Public sector production	16 233.6	16 928.2	17 522.1
GDP (at market prices)	119 627.1	121 462.4	124 521.7

* Preliminary data

FINLAND: Balance of manpower resources 1950–1982
1 000 persons

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Population ^c	4 009	4 047	4 091	4 139	4 187	4 235	4 282	4 324	4 360	4 395
Thereof ^c 15–65 years	2 554	2 563	2 583	2 607	2 635	2 651	2 687	2 696	2 717	2 741
Labour force ^b	2 020	2 080	2 092	2 078	2 115	2 158	2 174	2 172	2 180	2 199
Employment in										
– manufacturing ^{a, b}	348	371	359	353	376	394	403	394	380	390
– private services ^{a, b}	497	522	539	537	555	576	590	595	589	604
– public sector ^{a, b}	123	127	131	134	135	142	144	148	154	163
Total employment ^b	1 985	2 059	2 065	2 038	2 082	2 130	2 146	2 132	2 123	2 150

^a National Accounts, partly estimated by ETLA till 1976

^b Labour Force Survey, partly estimated by ETLA till 1976

^c Population Statistics

FINLAND: Balance of manpower resources

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Population	4 430	4 461	4 491	4 523	4 549	4 564	4 581	4 606	4 626	4 624
Thereof 15–65 years	2 778	2 828	2 871	2 915	2 945	2 971	2 999	3 031	3 052	3 050
Labour force	2 228	2 247	2 261	2 258	2 285	2 301	2 308	2 293	2 274	2 274
Employment in										
– manufacturing	420	436	442	439	442	448	453	455	457	485
– private services	626	650	673	688	702	724	736	739	743	757
– public sector	164	173	179	188	196	201	214	218	234	247
Total employment	2 196	2 220	2 232	2 225	2 251	2 270	2 274	2 229	2 188	2 212

FINLAND: Balance of manpower resources

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Population	4 606	4 612	4 640	4 666	4 691	4 711	4 726	4 739	4 753	4 765
Thereof 15–65 years	3 053	3 088	3 119	3 147	3 168	3 181	3 190	3 200	3 213	3 228
Labour force	2 283	2 288	2 289	2 331	2 384	2 388	2 370	2 371	2 371	2 399
Employment in										
– manufacturing	520	534	545	559	590	587	568	561	546	569
– private services	775	777	788	804	807	807	790	775	779	778
– public sector	257	267	279	292	310	325	347	360	374	387
Total employment	2 241	2 238	2 233	2 279	2 344	2 336	2 278	2 231	2 199	2 256

FINLAND: Balance of manpower resources

	1980	1981	1982
Population	4 780	4 800	4 826
Thereof 15–65 years	3 243	3 263	3 289
Labour force	2 442	2 481	2 526
Employment in			
– manufacturing	595	604	586
– private services	804	807	811
– public sector	397	414	447
Total employment	2 328	2 353	2 377

FINLAND: Key variables 1950–1982

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-1.6	4.5	-3.6	1.4	0.6	0.5	-2.6	-1.5	1.3	0.0
Balance on current account excl. interest payments net	0.7	5.2	-2.6	2.1	1.9	1.9	-1.1	0.1	2.5	0.9
Interest payments net	-0.5	-0.3	-0.4	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3	-0.1
Net foreign debt	14.1	4.7	7.0	5.6	4.0	2.0	3.4	5.0	2.8	2.0
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Indirect taxes	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Social security contributions	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Transfers to private sector	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Transfers to households	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total public (consolidated) surplus/deficit	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

FINLAND: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
EXTERNAL BALANCE										
(all figures in percent of GDP)										
Trade balance	-1.7	-1.9	-2.3	-1.0	-3.2	-2.9	-2.8	-2.1	0.5	-0.5
Balance on current account excl. interest payments net	-0.8	-1.2	-1.4	0.0	-2.1	2.0	-1.9	-1.0	1.8	1.1
Interest payments net	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.6	-0.8	-0.9	-0.9
Net foreign debt	2.6	3.6	5.1	5.2	6.8	8.5	8.8	12.3	10.3	8.8
PUBLIC SECTOR										
(all data in percent of GDP)										
Direct taxes	10.2	9.9	10.6	10.6	11.6	12.0	12.9	13.0	13.1	12.9
Indirect taxes	13.3	12.9	13.1	12.5	12.4	12.8	13.1	14.1	14.5	14.0
Social security contributions ¹	3.6	3.6	3.9	4.1	4.6	4.9	5.0	5.8	5.7	5.5
Transfers to private sector	9.1	9.1	9.5	10.1	10.6	10.9	11.6	11.8	11.7	11.5
Transfers to households ²	6.2	6.6	6.9	7.0	7.2	7.7	8.2	8.8	8.8	8.4
Total public (consolidated) surplus/deficit	4.0	3.5	3.5	1.1	1.4	1.5	1.7	2.7	2.7	3.2

¹ Incl. unfunded employee welfare contributions.

² Social security benefits, social assistance grants, unfunded employee welfare benefits, other current transfers to households and non-profit institutions.

FINLAND: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-3.5	-4.2	-2.0	-3.2	-6.2	-8.3	-3.9	0.2	2.3	-0.6
Balance on current account excl. interest payments net	-1.5	-2.2	0.2	-1.2	-5.7	-7.0	-2.6	1.6	4.3	1.5
Interest payments net	-1.0	-1.1	-1.2	-1.2	-1.3	-1.5	-1.7	-2.1	-2.2	-2.0
Net foreign debt	10.0	12.9	12.5	11.9	14.2	21.0	21.6	23.3	19.9	16.3
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes	13.4	14.3	14.4	15.1	15.5	16.7	19.3	17.9	15.7	14.7
Indirect taxes	13.6	13.9	13.9	13.6	12.9	12.8	13.1	14.0	14.6	14.6
Social security contributions	5.8	6.3	6.2	6.6	6.8	7.7	8.1	7.9	7.3	6.7
Transfers to private sector	11.5	12.1	12.2	11.4	12.6	13.9	14.8	15.4	15.5	15.2
Transfers to households	8.4	9.1	9.3	8.8	9.1	9.7	10.3	11.0	11.1	10.3
Total public (consolidated) surplus/deficit	4.3	5.4	3.8	6.0	4.6	3.0	4.9	3.0	1.1	0.2

FINLAND: Key variables

	1980	1981	1982
EXTERNAL BALANCE (all figures in percent of GDP)			
Trade balance	-3.2	-0.5	-0.8
Balance on current account excl. interest payments net	-1.1	1.6	0.4
Interest payments net	-2.0	-2.3	-2.6
Net foreign debt	16.8	15.9	18.8
PUBLIC SECTOR (all data in percent of GDP)			
Direct taxes	15.0	16.4	16.1
Indirect taxes	14.5	14.8	15.0
Social security contributions	6.5	6.4	6.4
Transfers to private sector	14.5	14.8	15.8
Transfers to households	10.0	10.1	11.0
Total public (consolidated) surplus/deficit	0.2	1.1	-0.9

FINLAND: Key variables 1950–1982

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
MANUFACTURING										
Labor productivity (annual percentage change)	3.8	5.8	0.0	6.9	5.6	5.3	0.4	5.0	0.0	6.7
Investment in percent of value added	13.9	19.0	22.2	18.2	17.7	16.8	18.8	16.6	15.4	16.2
Investments (annual percentage change)	1.0	53.4	– 6.8	– 10.3	17.2	4.6	17.0	– 10.4	– 10.2	23.4
HOUSEHOLDS										
Disposable income (annual % change)	25.3	38.9	9.0	– 2.5	9.6	11.7	10.5	6.7	9.2	6.8
Saving ratio	n.a.									n.a.
PRICES*										
Consumer price (1949 = 100)	114	133	138	141	141	137	152	170	181	183
Producer price (manufacturing) (1949 = 100)	120	163	140	142	151	153	160	166	178	187
Export price (goods) (1949 = 100)	112	204	194	146	149	158	158	173	206	194
Import price (goods) (1949 = 100)	126	168	165	145	136	136	143	167	191	182
Profit margin in industry ¹	n.a.									n.a.
Rate of return in industry	n.a.									n.a.
Key interest rate ²	9.68	9.70	9.97	7.96	7.97	8.00	7.96	7.98	7.32	6.91

¹ Value added – total labour costs
value added

² Average interest rate of credits granted by financial institutions

Note: * The price series are chained from various indices.

FINLAND: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
MANUFACTURING										
Labor productivity (annual percentage change)	4.8	5.3	4.0	4.8	5.9	4.7	5.6	5.8	6.0	8.5
Investment in percent of value added	20.5	24.9	23.7	19.4	20.3	21.6	21.6	17.6	17.0	17.3
Investments (annual percentage change)	43.8	32.7	-6.2	-16.2	12.5	6.3	4.4	-16.7	0.8	22.4
HOUSEHOLDS										
Disposable income (annual % change)	10.9	13.7	7.9	8.5	12.8	9.7	8.7	7.0	10.5	12.3
Saving ratio	3.4	6.1	4.0	3.0	2.0	1.6	3.8	2.1	3.1	2.4
PRICES										
Consumer price (1949 = 100)	188	193	201	211	232	243	253	267	290	297
Producer price (manufacturing) (1949 = 100)	192	199	198	206	215	218	222	233	261	288
Export price (goods) (1949 = 100)	198	201	197	203	215	225	228	239	276	284
Import price (goods) (1949 = 100)	186	188	189	192	197	192	195	202	245	250
Profit margin in industry	42.4	42.6	37.8	38.9	37.2	34.8	33.4	33.1	37.2	42.5
Rate of return in industry	11.8	12.0	9.6	10.0	9.6	8.3	7.4	7.4	9.7	13.7
Key interest rate	6.94	7.01	7.04	7.15	7.26	7.48	7.54	7.57	7.71	7.72

FINLAND: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
MANUFACTURING										
Labor productivity (annual percentage change)	5.2	1.7	8.5	4.9	3.6	-1.7	2.1	5.0	7.7	6.1
Investment in percent of value added	22.3	25.4	22.7	19.3	22.9	25.1	21.6	19.0	13.8	13.6
Investments (annual percentage change)	34.7	8.8	- 5.4	-10.3	32.5	2.2	-12.1	-16.9	-19.3	11.7
HOUSEHOLDS										
Disposable income (annual % change)	9.9	10.1	17.1	16.9	24.7	20.6	12.4	10.2	11.8	13.3
Saving ratio	2.9	4.5	4.6	2.8	5.6	6.0	4.6	4.7	5.8	5.4
PRICES										
Consumer price (1949 = 100)	305	325	348	389	456	537	615	693	745	799
Producer price (manufacturing) (1949 = 100)	300	314	335	391	513	570	634	680	738	803
Export price (goods) (1949 = 100)	306	319	343	384	532	617	637	732	777	873
Import price (goods) (1949 = 100)	269	288	308	342	483	525	560	653	723	835
Profit margin in industry	41.0	35.9	35.9	37.1	42.0	33.3	30.4	30.3	36.0	38.6
Rate of return in industry	12.9	9.2	9.8	10.2	12.0	6.8	5.5	4.9	8.2	10.8
Key interest rate	7.77	8.75	8.18	9.75	9.92	10.08	10.18	9.29	8.24	9.42

FINLAND: Key variables

	1980	1981	1982
MANUFACTURING			
Labor productivity (annual percentage change)	3.6	4.0	4.9
Investment in percent of value added	17.8	19.0	19.2
Investments (annual percentage change)	36.3	6.4	-0.2
HOUSEHOLDS			
Disposable income (annual % change)	15.1	12.2	12.9
Saving ratio	6.3	5.5	6.4
PRICES			
Consumer price (1949 = 100)	892	999	1 092
Producer price (manufacturing) (1949 = 100)	856	907	949
Export price (goods) (1949 = 100)	973	1 077	1 150
Import price (goods) (1949 = 100)	975	1 092	1 141
Profit margin in industry	36.7	34.5	34.3
Rate of return in industry	10.4	9.4	9.1
Key interest rate	10.18	10.19	9.58

NORWAY

NORWAY: Balance of resources 1950–1982

Million NOK. 1950–1962 (1955 prices); 1962–1975 (1970 prices); 1975–1982 (1975 prices)

	1955 prices									
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
GDP	19 901	20 940	21 694	22 695	23 822	24 278	25 552	26 291	26 055	27 394
Imports	8 349	8 786	8 550	9 127	10 042	10 772	11 548	11 707	12 090	12 610
Total resources	28 250	29 726	30 244	31 822	33 864	35 050	37 100	37 998	38 145	40 004
Exports	7 436	8 249	8 064	8 592	9 410	10 051	11 044	11 518	11 727	12 838
Investment	6 282	6 627	6 586	6 826	7 462	7 636	8 179	8 090	7 843	7 783
Consumption										
– private	12 525	12 566	13 095	13 596	14 060	14 543	14 960	15 335	15 415	16 053
– public	2 007	2 284	2 499	2 808	2 932	2 820	2 917	3 055	3 160	3 330
Total demand	28 250	29 726	30 244	31 822	33 864	35 050	37 100	37 998	38 145	40 004

Source: National Accounts, Central Bureau of Statistics

NORWAY: Balance of resources

	1955 prices			1970 prices							
	1960	1961	1962	1962	1963	1964	1965	1966	1967	1968	1969
GDP	28 965	30 782	31 647	57 910	60 104	63 116	66 451	68 966	73 283	74 937	78 313
Imports	13 979	15 398	16 224	19 541	20 717	22 180	24 184	26 072	29 125	29 774	30 315
Total resources	42 944	46 180	47 871	77 451	80 821	85 296	90 635	95 038	102 408	104 711	108 628
Exports	14 029	15 030	15 977	20 812	22 510	24 338	25 691	27 141	29 428	31 684	33 370
Investment	8 382	9 398	9 409	15 672	15 690	16 508	18 748	20 095	22 752	20 895	19 473
Consumption											
– private	17 152	18 152	18 710	32 627	33 733	34 993	35 854	37 142	38 568	39 983	43 051
– public	3 381	3 600	3 775	8 340	8 888	9 457	10 342	10 660	11 660	12 149	12 734
Total demand	42 944	46 180	47 871	77 451	80 821	85 296	90 635	95 038	102 408	104 711	108 628

NORWAY: Balance of resources

	1970 prices						1975 prices				
	1970	1971	1972	1973	1974	1975	1975	1976	1977	1978	1979
GDP	79 877	83 534	87 852	91 463	96 214	100 223	148 701	158 830	164 516	171 986	180 699
Imports	34 431	36 640	36 270	41 506	43 463	46 487	72 139	81 023	83 807	72 459	71 954
Total resources	114 308	120 174	124 122	132 969	139 677	146 710	220 840	239 853	248 323	244 445	252 653
Exports	33 404	33 783	38 543	41 737	42 021	43 319	62 189	69 190	71 704	77 718	79 723
Investment	24 325	27 024	24 228	27 723	31 671	33 813	52 335	57 512	56 241	46 053	48 263
Consumption											
– private	43 046	45 018	46 351	47 691	49 531	52 068	77 615	82 332	88 039	86 606	89 389
– public	13 533	14 349	15 000	15 818	16 454	17 510	28 701	30 819	32 339	34 068	35 278
Total demand	114 308	120 174	124 122	132 969	139 677	146 710	220 840	239 853	248 323	244 445	252 653

NORWAY: Balance of resources

	1975 prices		
	1980 ¹	1981 ¹	1982 ¹
GDP	188 460	189 030	187 800
Imports	74 320	75 740	80 209
Total resources	262 780	264 770	268 009
Exports	81 397	81 560	79 489
Investment	52 993	51 620	55 383
Consumption			
– private	91 450	92 634	93 888
– public	36 940	38 856	39 249
Total demand	262 770	264 670	268 009

¹ The figures presented are not accurate as they are estimated from volume changes in percent published by Central Bureau of Statistics in St.meld. nr. 1 (1983–84).

NORWAY: Gross domestic product by kind of economic activity 1950–1982

Million NOK. 1950–1962 (1955 prices); 1962–1975 (1970 prices); 1975–1982 (1975 prices)

	1955 prices									
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Aggriculture, forestry and mining	3 000	3 065	3 377	3 242	3 266	3 073	3 525	3 378	3 186	3 197
Petroleum production (incl. drilling and pipeline transport)	0	0	0	0	0	0	0	0	0	0
Manufacturing	4 466	4 819	4 701	4 963	5 278	5 466	5 775	5 864	5 797	6 079
Construction and electricity supply	1 998	1 982	2 072	2 179	2 331	2 338	2 224	2 413	2 442	2 435
Water transport	1 575	2 596	2 659	2 200	2 078	2 643	3 600	3 962	3 214	3 244
All (other) private services	} 8 763	8 381	8 716	9 906	10 622	10 522	10 177	10 422	11 134	12 117
Public sector production										
Correction item	99	97	169	205	247	236	251	252	282	322
GDP	19 901	20 940	21 694	22 695	23 822	24 278	25 552	26 291	26 055	27 394

Source: National Accounts, Central Bureau of Statistics

NORWAY: Gross domestic product by kind of economic activity

	1955 prices			1970 prices							
	1960	1961	1962	1962	1963	1964	1965	1966	1967	1968	1969
Aggriculture, forestry and mining	3 132	3 231	3 116	5 295	5 174	5 406	5 944	5 897	6 161	6 185	5 667
Petroleum production (incl. drilling and pipeline transport)	0	0	0	0	0	0	0	0	0	0	0
Manufacturing	6 606	6 880	6 935	11 608	12 304	13 178	13 871	14 699	15 175	15 543	16 677
Construction and electricity supply	2 512	2 568	2 720	6 257	6 521	6 775	6 964	7 375	8 184	8 226	8 329
Water transport	3 384	3 609	3 696	6 056	6 433	6 629	7 305	7 413	8 067	8 135	8 042
All (other) private services	13 007	14 093	14 735	21 813	22 309	23 149	23 670	24 451	25 739	26 192	27 702
Public sector production				5 979	6 412	6 774	7 341	7 516	8 258	8 501	8 986
Correction item	324	401	445	902	951	1 205	1 356	1 615	1 699	2 155	2 910
GDP	28 965	30 782	31 647	57 910	60 104	63 116	66 451	68 966	73 283	74 937	78 313

NORWAY: Gross domestic product by kind of economic activity

	1970 prices						1975 prices				
	1970	1971	1972	1973	1974	1975	1975	1976	1977	1978	1979
Aggriculture, forestry and mining	5 742	6 060	6 196	6 141	6 742	6 530	9 209	9 531	9 668	9 383	9 678
Petroleum production (incl. drilling and pipeline transport)	0	48	492	436	736	2 677	4 254	6 471	7 478	12 315	15 609
Manufacturing	17 441	18 104	18 953	19 958	20 866	20 252	32 301	32 446	31 993	31 430	32 099
Construction and electricity supply	8 902	9 411	9 641	9 976	10 432	10 651	15 901	16 561	16 716	18 182	18 699
Water transport	7 793	7 637	8 335	9 002	9 479	9 167	9 253	10 853	11 264	10 766	10 313
All (other) private services	27 921	29 350	30 626	31 536	32 960	34 526	52 283	55 090	58 272	59 584	62 036
Public sector production	9 411	9 930	10 572	11 256	11 670	12 402	20 705	22 663	23 852	25 120	26 209
Correction item	2 667	2 994	3 037	3 158	3 329	4 018	4 795	5 215	5 273	5 206	6 056
GDP	79 877	83 534	87 852	91 463	96 214	100 223	148 701	158 830	164 516	171 986	180 699

NORWAY: Gross domestic product by kind of economic activity

	1975 prices		
	1980 ¹	1981 ¹	1982 ¹
Aggriculture, forestry and mining	10 062	10 820	10 562
Petroleum production (incl. drilling and pipeline transport)	19 277	18 949	19 234
Manufacturing	32 388	32 550	31 736
Construction and electricity supply	18 653	19 507	19 138
Water transport	10 509	10 099	8 918
All (other) private services	62 803	63 517	64 013
Public sector production	27 452	28 423	28 941
Correction item	7 316	5 165	5 258
GDP	188 460	189 030	187 800

¹ The figures presented are not accurate as they are estimated from volume changes in percent published by Central Bureau of Statistics in St.meld. nr 1 (1983-84).

NORWAY: Gross domestic product by kind of economic activity 1950–1982
Per cent of GDP at current prices

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Aggriculture, forestry and mining	14.5	13.6	14.2	13.3	13.1	12.6	12.8	11.6	10.9	10.7
Petroleum production (incl. drilling and pipeline transport)	—	—	—	—	—	—	—	—	—	—
Manufacturing	24.1	25.1	22.9	22.6	22.9	22.5	21.7	20.9	21.0	20.7
Construction and electricity supply	9.1	8.0	8.4	9.2	9.5	9.7	8.9	9.7	10.4	10.4
Water transport	10.4	13.8	12.8	10.5	9.1	10.9	13.1	13.6	11.0	10.5
All (other) private services	41.1	38.7	40.6	43.4	44.4	43.3	42.5	43.4	45.9	46.9
Public sector production	0.8	0.8	1.1	1.0	1.0	1.0	1.0	0.9	0.8	0.8
Correction item										
GDP, billion NOK at current prices	15.1	18.8	20.7	21.0	22.8	24.3	27.5	29.2	29.2	31.0

Source: National Accounts, Central Bureau of Statistics

NORWAY: Gross domestic product by kind of economic activity

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Aggriculture, forestry and mining	9.8	9.5	8.7	8.1	8.2	8.6	8.1	7.3	7.1	6.7
Petroleum production (incl. drilling and pipeline transport)	—	—	—	—	—	—	—	—	—	—
Manufacturing	21.3	21.2	21.1	21.2	21.6	21.3	21.2	20.7	21.0	21.7
Construction and electricity supply	10.4	10.2	10.8	11.1	10.6	10.7	11.5	11.5	11.0	11.5
Water transport	10.2	10.0	9.5	9.6	9.9	10.0	9.3	10.3	10.9	9.6
All (other) private services	47.6	48.4	39.5	39.5	39.0	38.6	38.8	38.5	38.3	38.9
Public sector production	0.7	0.7	9.7	10.0	10.2	10.5	10.9	11.6	11.9	12.0
Correction item			0.7	0.5	0.5	0.3	0.2	0.1	- 0.2	- 0.4
GDP, billion NOK at current prices	33.1	36.1	38.8	41.7	45.8	50.5	54.6	59.7	63.7	69.4

NORWAY: Gross domestic product by kind of economic activity

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Aggriculture, forestry and mining	7.3	7.2	6.6	6.4	6.8	6.3	6.4	6.5	6.1	5.7
Petroleum production (incl. drilling and pipeline transport)	—	—	0.2	0.2	0.8	2.9	4.1	4.5	7.0	9.9
Manufacturing	21.8	21.5	21.9	21.7	21.4	21.7	20.1	18.9	18.0	18.2
Construction and electricity supply	11.1	11.3	11.1	10.6	10.9	10.8	10.6	10.5	11.1	10.5
Water transport	9.8	9.1	8.6	9.1	8.8	6.2	5.4	4.7	4.6	4.6
All (other) private services	34.9	35.3	35.7	35.8	35.9	35.0	35.2	36.1	35.6	34.2
Public sector production	11.8	12.5	13.0	13.3	13.1	13.9	14.7	14.9	15.1	14.3
Correction item	3.3	3.1	2.9	2.9	3.3	3.2	3.5	3.9	2.5	2.6
GDP, billion NOK at current prices	79.9	89.1	98.4	111.9	129.7	148.7	170.7	191.5	213.1	238.7

NORWAY: Gross domestic product by kind of economic activity

	1980	1981	1982
Aggriculture, forestry and mining	4.8	4.9	4.4
Petroleum production (incl. drilling and pipeline transport)	15.7	17.1	17.3
Manufacturing	15.6	14.9	14.4
Construction and electricity supply	9.6	9.5	9.6
Water transport	4.6	4.4	3.7
All (other) private services	33.8	33.9	35.5
Public sector production	13.7	13.7	14.2
Correction item	2.2	1.6	0.9
GDP, billion NOK at current prices	285.0	328.5	362.6

NORWAY: Balance of manpower resources 1972–1982
1 000 persons

	1972	1973	1974	1975	1976	1977	1978	1979
Population	3 933	3 961	3 985	4 007	4 026	4 043	4 059	4 073
Population of working age (15–74 years)	2 732	2 749	2 768	2 809	2 825	2 844	2 866	2 885
Working age population not belonging to the labor force:	1 055	1 069	1 084	1 062	1 004	993	978	975
– of which:								
persons doing domestic work	572	554	554	543	478	467	468	448
Labor force	1 677	1 680	1 684	1 747	1 821	1 851	1 888	1 910
– unemployment	28	26	25	40	32	27	34	38
– employed	1 649	1 654	1 659	1 707	1 789	1 824	1 854	1 872
Unemployment rate %	1.7	1.5	1.5	2.3	1.8	1.5	1.8	2.0
Labor force participation rate	60.4	61.1	60.8	62.2	64.5	65.1	65.9	66.2

NORWAY: Balance of manpower resources

	1980	1981	1982
Population	4 086	4 100	4 115
Population of working age (15–74 years)	2 905	2 926	2 949
Working age population not belonging to the labor force:	959	954	951
– of which:			
persons doing domestic work	435	428	413
Labor force	1 946	1 972	1 998
– unemployment	33	40	52
– employed	1 913	1 932	1 946
Unemployment rate %	1.7	2.0	2.6
Labor force participation rate	67.0	67.4	67.8

NORWAY: Key variables 1950–1982

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
EXTERNAL BALANCE										
(all figures in percent of GDP)										
Trade balance	-5.3	1.8	0.2	-4.1	-4.8	-3.0	0.9	1.1	-3.0	-1.0
Balance on current account excl. interest payments net	2.5	3.6	0.8	-3.5	-4.4	-2.7	1.1	1.2	-2.8	-0.7
Interest payments net	-0.5	-0.5	-0.4	-0.5	-0.5	-0.7	-0.7	-0.7	-0.9	-0.9
Net foreign debt	n.a.				n.a.	10.0	8.0	6.6	8.3	10.0
PUBLIC SECTOR										
(all data in percent of GDP)										
Direct taxes ¹	17.4	15.5	15.9	16.7	16.1	16.1	15.8	18.1	18.8	18.8
Indirect taxes	13.0	14.2	14.3	13.6	13.2	13.2	13.3	13.8	14.0	13.9
Social security contributions	n.a.									n.a.
Transfers to private sector	11.8	10.2	10.6	10.7	10.7	10.8	10.3	11.5	11.3	11.8
Transfers to households	4.9	4.4	4.9	5.4	5.6	5.8	5.7	6.3	6.9	7.7
Total public ² (consolidated) surplus/deficit	15.4	10.0	7.9	6.4	5.9	6.2	6.5	7.6	8.0	7.1

¹ Incl. social security contributions

² Government saving

NORWAY: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-1.8	-3.1	-2.5	-2.2	-0.1	-0.9	-1.5	-1.9	2.0	2.2
Balance on current account excl. interest payments net	-1.3	-2.7	-2.2	-2.0	0.0	-0.8	-1.4	-1.7	2.1	2.1
Interest payments net	-1.0	-1.0	-1.0	-1.0	-1.1	-1.1	-1.1	-1.2	-1.1	-0.8
Net foreign debt	9.5	12.0	14.2	15.5	13.2	15.1	15.8	15.5	12.6	10.6
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes	18.0	18.4	19.7	19.6	20.1	20.3	21.4	23.5	24.3	25.0
Indirect taxes	14.0	14.1	14.1	14.0	14.2	14.6	15.0	15.2	14.8	16.1
Social security contributions	n.a.	.....	.....	.....	.....	.....	.....	.....	.....	n.a.
Transfers to private sector	12.0	12.0	12.4	13.1	12.7	13.5	13.5	14.1	15.0	16.3
Transfers to households	7.6	7.6	8.3	8.7	8.9	9.0	9.1	9.8	10.5	11.2
Total public (consolidated) surplus/deficit	6.7	7.8	7.6	6.3	7.1	6.5	7.5	8.5	7.5	8.1

NORWAY: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-1.3	-3.3	0.8	-0.5	-2.9	-6.7	-9.5	-8.5	-0.9	2.6
Balance on current account excl. interest payments net	-1.6	-3.5	0.4	-0.9	-3.5	-7.4	-10.5	-12.1	-2.7	0.7
Interest payments net	-0.5	-0.7	-0.8	-0.9	-1.3	-1.1	-1.5	-1.9	-2.5	-2.9
Net foreign debt	11.4	14.1	13.8	12.7	15.2	23.7	31.9	44.1	46.5	43.4
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes ¹	22.9	26.0	27.8	29.2	28.5	29.3	30.1	29.4	30.8	31.1
Indirect taxes	18.2	18.6	18.5	18.2	17.5	17.8	18.2	19.0	17.8	17.2
Social security contributions	9.7	11.7	12.7	13.7	13.1	13.4	12.8	12.9	13.3	12.5
Transfers to private sector	17.4	18.3	19.1	19.3	19.1	19.8	20.7	21.5	22.7	22.5
Transfers to households	12.2	13.0	13.7	13.9	13.3	13.6	13.9	14.1	15.0	15.5
Total public ² (consolidated) surplus/deficit	7.0	8.2	8.9	9.7	8.5	7.8	7.1	5.7	4.8	5.3

¹ Incl. social security contributions

² Government saving

NORWAY: Key variables

	1980	1981	1982
EXTERNAL BALANCE (all figures in percent of GDP)			
Trade balance	5.8	8.1	5.6
Balance on current account excl. interest payments net	4.6	6.4	} 1.4
Interest payments net	-2.6	-2.2	
Net foreign debt	32.6	26.7	26.8
PUBLIC SECTOR (all data in percent of GDP)			
Direct taxes	32.0	32.2	32.1
Indirect taxes	16.6	16.7	16.6
Social security contributions	12.0	11.8	12.1
Transfers to private sector	20.9	20.9	21.2
Transfers to households	14.4	14.5	15.1
Total public (consolidated) surplus/deficit	8.9	7.5	6.7

NORWAY: Key variables 1950–1982

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
MANUFACTURING										
Labor productivity (annual percentage change of gross output per man-year worked)	7.8	6.3	-1.8	5.9	4.4	1.1	6.6	1.2	1.9	4.5
Investment in percent of value added	20.1	16.0	21.6	22.3	22.9	18.5	18.3	20.3	19.5	17.0
Investments (annual percentage change)	-5.0	-10.0	29.1	5.3	11.6	-19.1	2.2	8.4	-5.9	-10.0
PRIVATE SECTOR										
Disposable income (annual % change)	2.8	10.7	2.7	-1.4	6.9	3.5	8.6	-0.5	-6.7	4.5
Saving ratio	7.5	16.2	15.1	10.5	13.5	13.6	18.2	15.7	9.2	9.5
PRICES										
Consumer price (1950 = 100)	100	116	127	129	135	136	141	145	152	155
Wholesale price (1950 = 100)	100	124	132	130	133	136	142	147	144	144
Export price (1950 = 100)	100	136	133	118	119	125	132	135	126	124
Import price (1950 = 100)	100	120	121	113	107	109	115	122	113	108
Profit margin in industry ¹	28.6	28.1	23.6	22.4	25.9	23.0	22.3	21.0	17.5	15.9
Rate of return in industry ²	9.6	10.8	7.8	7.8	9.0	7.8	7.8	7.1	6.0	6.0
Key interest rate ³	2.66	3.02	3.02	3.01	3.02	4.03	4.53	4.56	4.66	4.58

¹ Operating surplus as a percentage of value added.

² Figures used by Gunnar Eliasson in Chapter I.

³ Yield on government bonds as they are calculated by Edison and Klovland, "A Quantitative Reassessment of the Purchasing Power Parity Hypothesis: Some evidence from Norway and the United Kingdom (Data Appendix)".

NORWAY: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
MANUFACTURING										
Labor productivity (annual percentage change of gross output per man-year worked)	7.7	2.0	-0.4	3.0	5.9	3.2	4.3	3.5	2.4	6.7
Investment in percent of value added	19.7	22.9	23.6	21.7	21.2	20.4	23.2	23.8	17.9	15.6
Investments (annual percentage change)	28.1	19.3	5.2	-2.6	6.9	0.3	18.2	7.8	-20.0	-6.3
PRIVATE SECTOR										
Disposable income (annual % change)	8.2	5.7	2.3	3.9	4.4	5.8	0.9	0.7	5.3	3.7
Saving ratio	10.7	10.5	9.9	10.3	10.9	13.7	11.3	8.6	10.0	6.5
PRICES										
Consumer price (1950 = 100)	156	160	168	173	182	190	196	205	212	218
Wholesale price (1950 = 100)	146	147	150	152	158	162	165	168	169	175
Export price (1950 = 100)	124	122	122	121	124	129	131	129	125	128
Import price (1950 = 100)	109	108	107	108	109	109	109	109	107	109
Profit margin in industry	18.8	17.6	14.9	14.2	18.2	18.5	16.3	13.0	14.6	18.3
Rate of return in industry	6.0	6.0	5.4	6.0	6.6	6.6	6.0	5.4	3.6	5.3
Key interest rate	4.48	4.66	4.66	4.55	4.58	4.75	4.78	4.76	4.74	5.09

NORWAY: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
MANUFACTURING										
Labor productivity (annual percentage change of gross output per man-year worked)	2.1	3.0	4.1	5.3	2.2	-1.7	0.7	-1.7	0.0	3.8
Investment in percent of value added	18.5	19.6	16.1	15.5	20.5	20.6	20.0	24.2	21.8	16.8
Investments (annual percentage change)	24.4	10.2	-12.2	6.1	31.2	5.7	5.8	18.1	-10.3	-11.7
PRIVATE SECTOR										
Disposable income (annual % change)	6.3	0.9	1.3	3.2	6.3	3.1	2.5	2.4	2.1	6.3
Saving ratio	12.1	8.9	7.3	7.6	9.7	8.0	4.8	0.6	4.3	7.0
PRICES										
Consumer price (1950 = 100)	242	257	275	296	324	362	395	430	466	488
Wholesale price (1950 = 100)	187	196	202	218	261	284	308	327	341	370
Export price (1950 = 100)	139	144	143	157	206	224	249	245	259	303
Import price (1950 = 100)	116	122	123	131	165	176	188	203	213	235
Profit margin in industry	21.0	16.6	18.9	21.5	25.0	21.6	18.4	14.3	12.3	23.4
Rate of return in industry	6.8	5.1	6.3	7.6	8.3	7.0	5.4	3.8	3.0	4.6
Key interest rate	5.98	6.10	6.09	6.13	6.95	7.19	7.27	7.50	8.57	8.43

NORWAY: Key variables

	1980	1981	1982
MANUFACTURING			
Labor productivity (annual percentage change of gross output per man-year worked)	2.0	2.7	0.3
Investment in percent of value added	20.3	22.3	18.5
Investments (annual percentage change)	12.2	15.2	-16.5
PRIVATE SECTOR			
Disposable income (annual % change)	3.4	4.0	-0.7
Saving ratio	8.7	11.1	8.9
PRICES			
Consumer price (1950 = 100)	541	615	684
Wholesale price (1950 = 100)	427	474	502
Export price (1950 = 100)	395	456	488
Import price (1950 = 100)	265	275	284
Profit margin in industry	19.8	16.8	14.6
Rate of return in industry	n.a.	.....	n.a.
Key interest rate	10.23	12.31	13.20

SWEDEN: Balance of resources. 1950-1982
MSEK. 1975-prices

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
GDP	119 901	123 271	125 286	129 625	137 043	141 168	145 874	149 360	152 944	161 151
Imports	18 668	21 414	20 165	20 157	23 509	25 759	27 625	29 526	30 311	31 366
Total resources	138 569	144 685	145 451	149 782	160 552	166 927	173 499	178 886	183 255	192 517
Exports	20 179	21 532	19 857	20 620	22 817	24 012	26 274	28 629	28 641	30 386
Investments										
- private	8 912	9 632	8 396	9 205	11 036	10 862	11 078	11 106	12 882	14 278
- public	6 021	6 085	7 622	8 722	8 721	8 646	8 854	9 231	9 825	11 336
- residential	5 434	5 166	5 592	6 336	7 084	7 093	7 435	7 675	8 079	8 322
Consumption										
- private	74 558	73 756	76 469	78 459	81 676	84 224	86 666	87 977	90 122	93 421
- public	23 001	24 199	25 495	27 656	29 025	29 625	31 079	32 020	33 488	35 068
Inventory changes	- 76	1 200	600	-317	124	836	750	777	258	91
Statistical discrepancy	540	3 115	1 420	-899	69	1 629	1 363	1 471	- 40	-385
Total demand	138 569	144 685	145 451	149 782	160 552	166 927	173 499	178 886	183 255	192 517

Source: National Accounts

SWEDEN: Balance of resources

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
GDP	167 037	176 547	184 053	193 862	207 072	214 988	219 484	226 878	235 140	246 913
Imports	36 453	36 531	38 770	41 361	45 367	50 478	52 630	53 922	58 387	65 920
Total resources	203 490	213 078	222 823	235 223	252 439	265 466	272 114	280 800	293 527	312 833
Exports	34 128	35 902	38 810	41 644	46 653	49 252	51 650	54 498	58 642	65 371
Investments										
- private	15 667	17 101	17 852	18 495	19 263	20 182	22 262	22 017	20 579	21 916
- public	11 145	11 567	12 305	13 677	15 077	15 376	15 973	17 494	18 904	19 661
- residential	8 324	9 258	10 130	10 806	11 891	12 539	12 057	13 468	13 838	14 036
Consumption										
- private	94 907	99 961	103 210	107 776	112 083	116 822	119 032	121 756	126 721	132 267
- public	35 338	36 550	38 901	42 587	43 869	45 991	48 569	50 823	54 306	57 226
Inventory changes	1 330	858	521	238	3 603	5 304	2 571	744	537	2 356
Statistical discrepancy	2 651	1 881	1 094	-	-	-	-	-	-	-
Total demand	203 490	213 078	222 823	235 223	252 439	265 466	272 114	280 800	293 527	312 833

SWEDEN: Balance of resources

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
GDP	262 897	264 946	270 669	281 194	293 361	299 821	303 343	297 345	301 306	313 775
Imports	72 750	70 340	73 910	79 396	88 525	85 263	93 754	90 909	86 217	97 226
Total resources	335 647	335 286	344 579	360 590	381 886	385 084	397 097	388 254	387 523	411 001
Exports	71 020	74 049	78 576	89 654	94 517	84 679	88 475	90 378	97 824	104 172
Investments										
– private	22 440	23 482	24 482	27 739	28 552	30 001	32 000	30 650	23 743	26 655
– public	21 601	20 917	22 048	20 933	20 412	20 870	20 953	20 904	21 208	21 323
– residential	13 382	13 317	13 586	13 199	12 065	12 055	11 047	10 815	12 441	12 655
Consumption										
– private	136 855	136 463	141 090	144 594	151 168	155 672	161 923	160 292	159 095	163 375
– public	61 857	63 429	65 003	67 009	68 886	72 236	74 865	77 152	79 307	83 083
Inventory changes	8 492	3 629	–206	–2 538	6 286	9 571	7 834	–1 937	–6 095	–262
Statistical discrepancy	–	–	–	–	–	–	–	–	–	–
Total demand	335 647	335 286	344 579	360 590	381 886	385 084	397 097	388 254	387 523	411 001

SWEDEN: Balance of resources

	1980	1981	1982
GDP	318 244	316 490	317 870
Imports	98 552	93 088	97 264
Total resources	416 796	409 578	415 134
Exports	101 727	103 740	108 560
Investments			
– private	26 927	36 946 ¹	36 287 ¹
– public	23 195	21 604	21 194
– residential	12 217	– ¹	– ¹
Consumption			
– private	163 127	162 060	163 890
– public	85 339	87 255	87 938
Inventory changes	4 264	–2 027	–2 735
Statistical discrepancy	–	–	–
Total demand	416 796	409 578	415 134

¹ Investments in residentials are included in private investments.

SWEDEN: Gross domestic product by kind of economic activity 1950–1982
MSEK, 1975-prices

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Manufacturing	27 388	29 301	28 777	29 349	30 429	31 950	33 695	35 383	36 024	37 954
Agriculture, forestry, fishing	12 149	12 308	12 648	12 012	12 286	11 310	11 552	12 144	11 983	11 540
Construction	9 907	9 615	9 846	11 131	11 736	11 801	11 989	11 992	12 707	13 768
Private services	40 702	42 319	43 240	43 952	46 627	48 437	50 040	51 287	52 932	55 337
Public sector production	17 814	18 574	19 412	20 153	20 839	21 288	22 192	22 763	23 813	24 810
GDP	119 901	123 271	125 286	129 625	137 043	141 168	145 874	149 360	152 944	161 151

SWEDEN: Gross domestic product by kind of economic activity

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Manufacturing	41 007	43 850	46 977	49 258	53 673	57 415	59 002	60 982	64 244	69 302
Agriculture, forestry, fishing	12 046	12 374	12 389	11 645	12 862	12 704	12 038	13 581	13 137	12 699
Construction	13 721	14 708	15 403	16 575	17 275	17 717	18 429	18 966	19 589	20 675
Private services	55 595	60 463	62 609	64 797	67 784	70 908	72 845	73 919	75 484	78 550
Public sector production	25 110	26 141	27 349	30 601	31 414	32 603	33 990	36 042	38 336	40 655
GDP	167 037	176 547	184 053	193 862	207 072	214 988	219 484	226 878	235 140	246 913

SWEDEN: Gross domestic product by kind of economic activity

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Manufacturing	71 850	73 714	73 793	79 087	82 811	81 157	80 735	75 796	74 641	79 912
Agriculture, forestry, fishing	13 010	14 743	13 414	13 342	14 340	13 133	13 131	12 034	12 290	12 273
Construction	21 275	20 925	21 810	21 182	20 950	21 357	20 901	21 561	22 054	22 590
Private services	81 278	81 489	84 004	87 586	93 263	95 143	97 617	97 543	98 454	102 512
Public sector production	43 780	45 284	47 099	48 438	50 441	52 753	54 590	56 106	58 202	60 605
GDP	262 897	264 946	270 669	281 194	293 361	299 821	293 343	297 345	301 306	313 775

SWEDEN: Gross domestic product by kind of economic activity

	1980	1981	1982
Manufacturing	80 240	77 459	75 533
Agriculture, forestry, fishing	12 705	12 884	13 579
Construction	22 755	22 299	22 475
Private services	104 931	104 111	106 100
Public sector production	62 114	63 623	64 405
GDP	319 015	317 258	318 639

SWEDEN: Balance of manpower resources 1960–1982
1 000 persons

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Population	7 498	7 542	7 581	7 628	7 695	7 773	7 883	7 893	7 935	8 004
Population 15–74 years	5 472	5 524	5 583	5 634	5 684	5 737	5 792	5 865	5 893	5 943
Labour force	n.a.	3 699	3 746	3 720	3 718	3 742	3 792	3 775	3 822	3 841
Employment in										
– manufacturing	n.a.	n.a.	n.a.	1 071	1 085	1 089	1 075	1 040	1 021	1 038
– private services	n.a.	n.a.	n.a.	1 252	1 272	1 283	1 298	1 285	1 318	1 338
– public sector	n.a.	n.a.	n.a.	505	532	552	578	616	665	715
Total employment	n.a.	3 644	3 688	3 655	3 658	3 697	3 731	3 693	3 736	3 767
Unemployment	n.a.	55	58	65	60	45	61	82	86	74
Employment in labor market programmes	n.a.	15	20	29	31	35	38	49	65	64

SWEDEN: Balance of manpower resources

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Population	8 081	8 115	8 129	8 144	8 177	8 208	8 236	8 267	8 284	8 303
Population 15–74 years	5 994	6 012	6 014	6 015	6 030	6 044	6 060	6 085	6 106	6 139
Labour force	3 913	1 961	3 970	3 977	4 043	4 129	4 155	4 175	4 209	4 268
Employment in										
– manufacturing	1 045	1 020	1 004	1 018	1 030	1 049	1 046	1 010	980	983
– private services	1 355	1 370	1 372	1364	1 379	416	1 416	1 427	1 426	1 438
– public sector	776	829	872	903	957	1 004	1 052	1 094	1 149	1 199
Total employment	3 854	3 860	3 879	3 965	4 062	4 089	4 099	4 115	4 179	4 234
Unemployment	59	101	107	98	77	67	66	75	94	88
Employment in labor market programmes	71	84	103	112	102	93	107	138	154	153

SWEDEN: Balance of manpower resources

	1980	1981	1982
Population	8 318	8 323	8 327
Population 15-74 years	6 167	6 183	6 202
Labour force	4 318	4 332	4 356
Employment in			
– manufacturing	981	952	918
– private services	1 390	1 394	1 410
– public sector	1 300	1 332	1 343
Total employment	4 232	4 225	4 219
Unemployment	86	108	137
Employment in labor market programmes	122	115	139

SWEDEN: Key variables 1950–1982

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
EXTERNAL BALANCE										
(all figures in percent of GDP)										
Trade balance	-0.3	-1.5	-0.8	-0.3	-1.3	-3.0	-1.5	-1.6	-1.6	-0.8
Balance on current account excl. interest payments net	0.4	2.7	0.6	1.0	-0.1	-0.6	0.0	0.0	-0.2	0.2
Interest payments net	0.0	0.1	0.3	0.1	0.2	0.2	0.2	0.3	0.2	0.2
Net foreign debt ¹	n.a.									n.a.
PUBLIC SECTOR										
(all data in percent of GDP)										
Direct taxes	9.7	11.5	12.8	13.5	13.3	13.3	13.1	13.4	13.1	12.9
Indirect taxes	8.6	7.8	8.1	8.5	8.5	9.2	9.4	9.4	10.0	10.1
Social security contributions	0.9	0.8	0.8	0.8	1.2	2.1	2.2	2.5	2.5	3.0
Transfers to private sector	8.3	7.7	8.0	8.2	8.8	9.4	9.6	10.0	10.5	10.3
Transfers to households	6.6	5.9	6.0	6.5	6.8	7.3	7.4	7.6	8.1	8.0
Total public (consolidated) surplus/deficit	n.a.									n.a.

¹ Swedish National Bank figures are only available from 1973. Figures covering the earlier period are based on other sources, and are here presented in brackets.

SWEDEN: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-0.3	-0.3	-0.1	-1.3	-1.1	-2.1	-1.6	-0.8	-1.3	-1.2
Balance on current account excl. interest payments net	-0.5	0.2	0.0	0.3	0.4	-0.9	-0.8	-0.1	-0.4	-0.7
Interest payments net	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.0	0.0
Net foreign debt	n.a.							n.a.	(- 8.6)	(- 7.7)
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes	13.5	13.7	13.7	13.8	14.3	15.9	16.8	17.2	17.0	17.7
Indirect taxes	11.2	11.3	11.3	11.3	11.1	11.5	12.3	12.4	12.8	12.5
Social security contributions	3.7	3.8	4.6	5.4	5.7	5.6	5.9	6.8	7.7	7.8
Transfers to private sector	10.5	10.3	10.4	11.0	11.0	11.7	12.1	12.9	13.8	14.3
Transfers to households	7.9	7.9	8.1	8.7	8.7	9.2	9.5	10.3	10.9	11.4
Total public (consolidated) surplus/deficit	n.a.								n.a.	3.9

SWEDEN: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
EXTERNAL BALANCE (all figures in percent of GDP)										
Trade balance	-1.1	0.8	1.3	1.8	-1.5	-0.2	-1.7	-1.5	-1.4	-1.2
Balance on current account excl. interest payments net	-0.9	1.1	1.5	3.1	-1.0	-0.6	-2.3	-2.9	0.0	-1.4
Interest payments net	0.0	0.0	0.0	0.3	0.1	0.1	0.0	-0.3	-0.5	-0.7
Net foreign debt	-	-	-	-6.8	-5.5	-3.1	-1.1	0.9	2.0	5.2
	(-6.5)	(-7.2)	(-7.5)	(-9.4)	(-6.8)	(-4.4)	(-0.7)			
PUBLIC SECTOR (all data in percent of GDP)										
Direct taxes	18.7	18.7	18.8	18.6	20.7	21.4	22.7	22.9	22.9	22.9
Indirect taxes	12.1	14.2	14.4	14.6	13.4	13.9	14.5	15.3	14.2	13.5
Social security contributions	7.7	8.3	8.9	8.3	8.4	12.8	11.3	13.0	13.5	13.7
Transfers to private sector	14.6	16.1	16.9	17.0	19.4	19.1	20.4	23.4	26.9	28.5
Transfers to households	11.4	12.7	13.4	13.1	15.2	14.8	15.6	17.4	18.1	18.3
Total public (consolidated) surplus/deficit	4.5	5.2	4.4	4.1	1.9	2.7	4.5	1.7	-0.5	-3.0

SWEDEN: Key variables

	1980	1981	1982
EXTERNAL BALANCE			
(all figures in percent of GDP)			
Trade balance	-1.9	-0.2	-0.9
Balance on current account excl. interest payments net	-2.4	-0.5	-1.0
Interest payments net	-1.3	-1.6	-2.3
Net foreign debt	9.6	14.5	21.8
PUBLIC SECTOR			
(all data in percent of GDP)			
Direct taxes	21.7	21.3	22.0
Indirect taxes	13.6	14.7	14.7
Social security contributions	14.2	15.0	13.9
Transfers to private sector	29.0	32.0	33.8
Transfers to households	18.8	19.5	19.6
Total public (consolidated) surplus/deficit	-3.8	-5.3	-7.1

SWEDEN: Key variables 1950–1982

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
MANUFACTURING										
Labor productivity (annual percentage change)	n.a.	7.0	0.6	4.6	1.3	3.4	7.0	5.8	4.8	5.8
Investment in percent of value added	19.9	19.4	17.2	15.0	18.7	17.5	17.4	15.7	18.4	19.0
Investments (annual percentage change)	12.3	4.3	-13.4	-11.2	29.4	-1.7	4.7	-4.8	19.4	7.6
HOUSEHOLDS										
Disposable income (annual % change)	n.a.	1.1	5.4	2.9	2.7	5.0	1.6	1.1	1.9	2.0
Saving ratio ¹	(4.1)	(6.1)	(7.7)	(8.0)	(6.7)	(8.4)	(7.2)	(6.8)	(6.3)	(4.8)
PRICES										
Consumer price (1949 = 100)	101	117	126	128	129	133	139	145	152	153
Producer price (manufacturing) (1968 = 100)	64	82	83	81	81	84	87	88	87	87
Export price (goods) (1968 = 100)	67	99	98	88	88	91	95	97	93	91
Import price (goods) (1968 = 100)	71	92	97	89	88	89	92	95	91	89
Profit margin in industry	n.a.	13.8	11.3	11.0	8.5	10.2	10.1	10.5	10.9	10.0
Rate of return in industry ²	n.a.	8.3	7.0	6.7	6.8	6.7	6.4	6.8	6.8	6.4
Key interest rate	3.1	3.4	3.6	3.7	3.7	4.6	4.7	5.1	5.1	5.2

¹ 1950–79 = (x)
1969–80 = x

² Real rate of return to total capital before tax:

$$R = \frac{\text{Gross profits} - \text{calculated depreciation}}{\text{Total assets (replacement values)}}$$

SWEDEN: Key variables

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
MANUFACTURING										
Labor productivity (annual percentage change)	5.8	5.0	7.7	6.5	9.5	8.3	4.1	8.9	10.5	7.7
Investment in percent of value added	18.7	20.7	20.0	19.4	16.1	16.4	17.5	17.0	15.6	15.6
Investments (annual percentage change)	7.7	18.6	3.5	1.9	-8.6	9.7	9.7	0.6	-3.6	7.7
HOUSEHOLDS										
Disposable income (annual % change)	4.6	5.0	3.2	3.9	5.6	2.4	1.3	0.2	3.5	3.9
Saving ratio ¹	(7.5)	(7.2)	(7.2)	(6.7)	7.9	(6.3)	(5.6)	(4.1)	(3.3)	(3.1)
				5.2	6.7	6.0	6.2	5.1	4.2	3.9
PRICES										
Consumer price (1949 = 100)	159	163	170	175	181	190	202	211	215	221
Producer price (manufacturing) (1968 = 100)	88	89	89	90	95	97	99	99	100	104
Export price (goods) (1968 = 100)	93	94	93	95	96	98	99	100	100	104
Import price (goods) (1968 = 100)	90	91	91	93	96	97	99	99	100	104
Profit margin in industry	9.5	9.9	9.0	8.8	9.9	10.3	8.3	8.0	8.3	9.4
Rate of return in industry ²	5.5	6.0	5.1	5.0	5.9	6.2	4.4	4.2	4.6	5.5
Key interest rate	5.8	5.9	5.7	5.7	6.2	6.7	7.4	6.7	7.0	8.0

SWEDEN: Key variables

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
MANUFACTURING										
Labor productivity (annual percentage change)	5.1	5.5	5.3	7.5	3.6	-0.8	0.9	-1.6	3.9	8.3
Investment in percent of value added	15.3	15.1	15.7	16.1	17.0	17.6	17.8	15.7	12.5	12.1
Investments (annual percentage change)	4.7	1.1	4.1	9.6	10.8	1.7	0.3	-17.1	-21.7	3.4
HOUSEHOLDS										
Disposable income (annual % change)	4.0	0.4	-0.6	2.5	7.1	4.9	1.9	1.3	-1.9	1.0
Saving ratio ¹	(4.1) 3.9	(6.0) 4.2	(4.0) 2.0	(5.4) 3.9	(8.2) 4.9	(10.1) 4.6	(8.5) 2.5	(10.1) 3.9	(9.7) 4.4	(8.8) 3.1
PRICES										
Consumer price (1949 = 100)	236	254	269	287	316	347	382	426	469	502
Producer price (manufacturing) (1968 = 100)	111	114	119	133	164	178	193	209	222	246
Export price (goods) (1968 = 100)	113	114	118	134	176	190	201	212	224	251
Import price (goods) (1968 = 100)	109	113	116	134	186	192	207	235	252	297
Profit margin in industry	8.5	7.8	8.1	10.2	12.0	8.8	7.0	5.0	4.4	7.4
Rate of return in industry ²	5.0	4.0	4.1	5.9	7.6	4.4	3.1	2.0	1.5	3.5
Key interest rate	7.6	7.3	7.3	7.3	7.7	8.8	9.4	9.8	10.0	9.7

SWEDEN: Key variables

	1980	1981	1982
MANUFACTURING			
Labor productivity (annual percentage change)	1.2	0.1	2.6
Investment in percent of value added	14.3	13.3	11.2
Investments (annual percentage change)	19.9	-8.5	-17.3
HOUSEHOLDS			
Disposable income (annual % change)	2.5	-1.8	-2.4
Saving ratio	5.3	-1.3	-31.9
PRICES			
Consumer price (1949 = 100)	571	640	695
Producer price (manufacturing) (1968 = 100)	279	307	344
Export price (goods) (1968 = 100)	282	307	343
Import price (goods) (1968 = 100)	344	383	438
Profit margin in industry	7.2	5.4	7.4
Rate of return in industry ²	4.0	3.5	n.a.
Key interest rate	11.5	13.5	13.0

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This medium-term survey of the Nordic economies meets a long felt demand. It is a result of a joint effort by five Nordic research institutions; ETLA in Helsinki, IFF and the Secretariat of the Economic Council in Copenhagen, IØI in Bergen, and IUI in Stockholm. The adjustment problems of the Nordic economies are analyzed and forecasts up to 1987 are presented. The survey includes special studies on Norway's offshore market and the Nordic engineering industries, the largest manufacturing companies, industrial subsidies, productivity comparisons, effective exchange rates, the export performance of the Nordic economies and intra-Nordic trade. The book also contains a comprehensive statistical appendix covering the Nordic economies 1950–82.

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