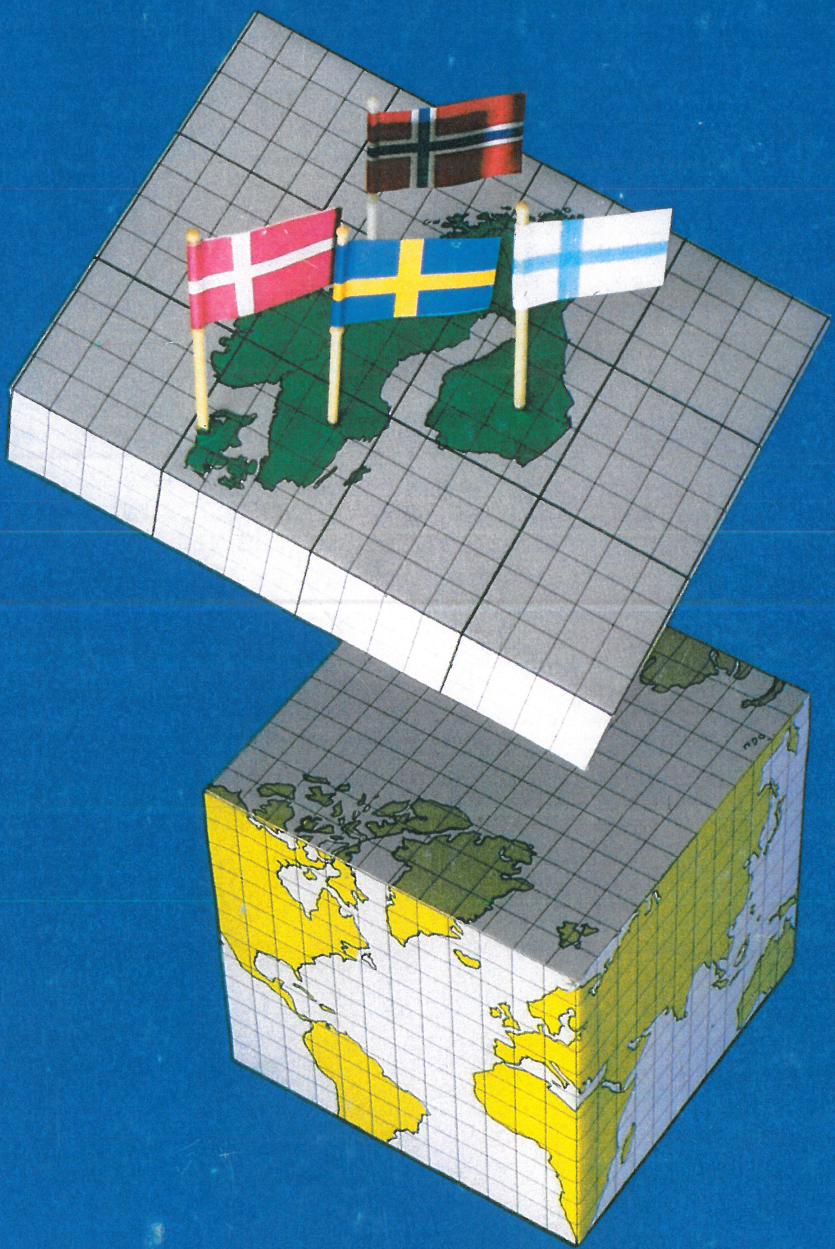
GROWTH POLICIES IN A NORDIC PERSPECTIVE



GROWTH POLICIES IN A NORDIC PERSPECTIVE

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FOREWORD

The Nordic countries are interesting cases for comparative analysis. They are alike in being small, open economies, with advanced welfare systems and in having passed through more or less severe adjustment experience in the last decade. Against this common backdrop a number of differences in economic performance may be observed.

This is the second time a group of research institutes in Denmark, Finland, Norway and Sweden has conducted a joint comparative analysis of economic growth in the four countries. A first study was published in 1984 ("Economic Growth in a Nordic Perspective").

This book extends the 1984 analyses by focusing on economic policy and factor market efficiency. As before, country chapters and special studies present updated and elaborate analyses of each Nordic economy.

The four institutes carry editorial responsibility for the content of this book. We would like to thank the Secretariat of the Economic Council in Denmark – a member of our Nordic team – for its continued interest and support.

Work has been conducted in the form of a series of joint seminars during the last two years. The authors of the country chapters are Lars Mitek (Denmark), Pekka Ylä-Anttila (Finland), Ole Berrefjord, Per Heum and Karl-Ove Tvedt (Norway) and Lars Oxelheim (Sweden). The second chapter on the international outlook has been written by Timo Hämäläinen at ETLA in Helsinki.

The introductory chapter contains a joint assessment of the Nordic economies. It was first drafted by Ole Berrefjord and Per Heum of IØI. Gunnar Eliasson, IUI and Pentti Vartia, ETLA have been actively involved in the final drafting of this chapter. As before, it is regarded as a joint product by the undersigned.

All special studies have been authored as signed and been subject to a joint editorial seminar review, as is the practice with all institutes.

All the institutes have contributed data to the appendixes. IØI has been responsible for making the data available in a joint data base. The figures have been drawn by Arja Selvinen and Arja Virtanen at ETLA.

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CHAPTER I

Growth Policies in a Nordic Perspective

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1. Policy Making in the Nordic Context

Globally, the Nordic countries are negligible in terms of population. Their economies are small but prosperous by most international standards. Hence, they attract interest from a market point of view. However, from the point of view of Nordic citizens, interests are focussed on the potential of Nordic business to exploit global future market opportunities.

This book addresses the latter question, encompassing the four largest Nordic countries – Denmark, Finland, Norway and Sweden. Policy focus is on economic growth. In particular the issue of how policies can contribute to a balanced, steady and fast economic growth is discussed.

Our point of departure is the same as in our previous book "Economic Growth in a Nordic Perspective" (1984). The industrial base of the individual Nordic economies differs enough to make an intercountry comparison interesting. The Nordic countries are also rather similar in welfare levels, in cultural settings, and in the size of their economies, justifying a Nordic context when economic prospects are to be considered for these countries. Moreover, the already established economic and political relations within the Nordic region provide a base for implementing measures to promote business capabilities on the Nordic scene.

Nordic policy concerns centre around the potential for long-term economic growth. From Special Study 1, examining rapidly growing Nordic companies, a multitude of factors are seen to explain micro conditions for growth. However, organizational, managerial and human skills appear as the prime factors, pointing to the capacity of the financial system to promote the build up of such immaterial capital, and the ability of labour markets to allocate human skills between companies and industries. Hence, Special Study 2 presents an overview and analysis of the Nordic financial markets, while Special Study 3 deals with Nordic labour markets.

Detailed discussions on the economic status, challenges and policy options facing the Nordic economies, are carried through separately for each country (Chapters III–VI). These considerations are based on a set of common assumptions regarding the development of the world economy up to 1990, which are discussed in Chapter II. The assumptions of stronger volume growth in OECD production and world trade (3 and 5 per cent per annum respectively), due to lower oil prices in the range of 15–20 USD, are the most important.

Policies have to be based on the economic situation in which they are bound to work, and which they are supposed to influence. So, before turning to the policy discussion, this chapter includes an empirical section highlighting structural features, recent performance and the current state of the Nordic economies and Nordic manufacturing.

Considerations of the macro economic context and the industrial base of the Nordic economies clear the way for addressing the question of how industrial policies may promote Nordic industrial development. This is partly a continual task, partly a task which is caused by more or less permanent changes in relative prices, whether these are due to market forces, political forces or technological leaps. Long term challenges are discussed, underlining the need to transform the industrial base towards fields where human capabilities define comparative advantages.

On the Nordic scene, the basic question is whether the Nordic economies taken together represent a better region for policy control, than do the individual nations separately, or a larger area, like the OECD world. Diffusion of industrial knowhow through the organization of factor markets, and risk assessments underlying policy formulations, are topics discussed in this Nordic perspective. Discussing the potential supply of promising industrial projects and the supply of necessary risk capital makes the presentation come a full circle.

2. Highlights on Nordic Economies

The per capita value of Nordic production has for several years stayed above the average for European OECD countries, and the difference has widened remarkably during the 1980s (supplementary figures, S-I:1 and S-I:2, p. 39).

The faster Nordic growth has been achieved without large deficits on public accounts than in other European OECD countries (supplementary figure S-I:8). On the contrary, budgets of central governments in the Nordic countries since 1970 have been more in balance than has on the average been the case for European OECD countries. Denmark and Sweden are, this is true, exceptions in this respect, but only for a couple of years in the early 1980s.

Apart from Norway, however, economic growth in the Nordic countries has been achieved by allowing larger deficits on external accounts (supplementary figure S-I:16). Still, only Denmark, and to some extent Sweden, seem to have run into severe policy conflicts because of this.

Denmark is also the only Nordic country where unemployment rates have reached average European levels. Unemployment in Finland may be high by Nordic standards, but has nevertheless stayed well below international figures. In Norway and Sweden annual average rates of open unemployment have only now and then exceeded 3 per cent of the labour force (supplementary figure S-I:3). As was shown in "Economic Growth in a Nordic Perspective" (1984), however, some unemployment is hidden in special labour markets programs, in particular in Norway and Sweden.

This means that excess demand pressure has characterized the labour markets, which is in turn partly reflected in Nordic inflation (supplementary figure S-I:4). During the eighties inflation in all the Nordic countries has stayed above the OECD average, with Denmark coming closest to international levels.

Hence, in some respects the Nordic economies have done better than other industrialized countries, in others not. However, past records is no evaluation of the future performance potential. To provide a base for such evaluations, important structural features will have to be pointed out. The current state of the economies must be clarified in more detail. And, industrial capabilities, on which the exploitation of business opportunities has to be based, need to be studied.

2.1 International Exposure

Export pattern

Table I:1 highlights the situation. All the Nordic countries must be regarded as open economies; Norway being the most open. Definitely, Norway has also the

Table I:1 The Nordic export picture
Summary of patterns and trends

	Denmark	Finland	Norway	Sweden
Exports, per cent of GDP Average 1981–85: Trend:	36.7 Increasing	31.2 Slightly decreasing	46.6 Stable	33.8 Increasing
Service content, per cent of exports 1985: Trend 1980–85:	20.5 Stable	17.9 Stable	27.6 Decreasing	15.0 Stable
Most important products in commodity exports: (per cent, 1985)	Machinery and transport equipment (17.0; stable trend)	Wood and forest products (34.6; decreasing)	Petroleum products (53.0; increasing)	Machinery and transport equipment (33.1; stable trend)
(per cent, 1985)	Farm products (15.6; decreasing)	Machinery and transport equipment (15.7; increasing)	Metals and metal products (11.4; slightly decreasing)	Wood and forest products (18.1; decreasing)
10 largest export commodity groups (2-digit SITC) – share of commodity exports, per cent 1985: Trend 1980–85:	50.9 Slightly decreasing	65.9 Slightly decreasing	82.0 Slightly increasing	61.3 Slightly decreasing
Important destination countries for commodity exports [1] – (per cent of commodity exports, 1985)	FRG (15.8) UK (12.2) Sweden (12.1) USA (10.1) Norway (6.7)	USSR (21.5) Sweden (13.2) UK (10.8) FRG (9.3) USA (6.3)	UK (29.1) FRG (17.9) USA (11.3) Sweden (10.5) Holland (7.6)	USA (11.6) FRG (11.5) Norway (10.5) UK (9.9) Denmark (8.3)
– share of 5 most important countries in commodity exports	57.0	61.1	76.4	51.8
Share of Nordic trade in commodity exports 1985, per cent: Trend 1980–85:	21.5 Slightly decreasing	21.5 Decreasing	14.4 Slightly decreasing	24.7 Stable

[1]) Figures presented for the country distribution of Norwegian exports are calculated in order to take the reexportation of Norwegian petroleum landed in UK into consideration.

thinnest, and most vulnerable export base. On all scores Norway stands out as the Nordic country with the most concentrated export pattern, relying on fewer products and fewer countries (markets) than any of the others. (Time series and details are presented in supplementary figures and tables, S-I:11, S-I:12 and S-I:13).

Altogether, Sweden has the broadest export base of the four. Denmark and Finland are positioned somewhere in between, with Finland closer to the Norwegian situation.

It is also worth noticing that approximately one fifth of total merchandise exports from the Nordic countries must be regarded as intra-Nordic trade, with Swedish exports as the most Nordic oriented (supplementary figure, S-I:14). Sweden is moreover an important market for exports from the other Nordic countries. In addition to this Nordic commonality in export orientation, all four share West-Germany, Great Britain and USA as important export markets.

One net producer of oil – three net consumers

During the last 15 years Norway has become a net producer of petroleum. The three others are net consumers. This situation is most interesting when considering unpredictable changes in oil prices in a Nordic perspective (cf. section 4).

Norwegian oil production began in 1971. Since then, oil production has been, and still is, rapidly expanding; current levels are slightly below 1 million barrels per day. Of course, these quantities represent only a fraction of the world oil supply, but they are huge enough to cover, for instance the total Nordic demand for oil. Besides, discovered Norwegian oil reserves are substantial, and large areas still remain to be explored.

Norway is also a producer of natural gas, the price of which is closely linked to the oil price. Actually, gas reserves are far more substantial than oil reserves on the Norwegian continental shelf. Hence, a distinct feature of the Norwegian economy is that of being a petroleum producing nation, which it will remain for several decades.

Denmark is also producing small quantities of natural gas and oil. But the overall picture is that Denmark, as well as Sweden and Finland, stand out as oil consumers. In the mid-1980s 10–20 per cent of total commodity imports to Denmark, Finland and Sweden consisted of oil and oil products, illustrating the importance of oil prices for domestic price levels and for external accounts of net oil consumer nations.

Obviously, the relative impact of changing oil prices is of far greater significance for a net oil producer like Norway. This becomes clear from 1985-figures, when the petroleum sector made up for 37.5 per cent of Norwegian exports, contributed slightly less than 20 per cent to Norwegian GDP, and generated more than 20 per cent of state revenues.

The economic impact of changing oil prices are, however, not fully revealed merely by classifying countries as net consumers or net producers of oil. We also have to take the institutional arrangements of oil trade into account. This is

especially important for Finland. Most of the country's demand for oil is covered by a bilateral trade agreement with the USSR; the Soviet Union exports oil to Finland at world market prices, while the bilateral trade relation is balanced with Finnish exports to the Soviet Union. When oil prices change, the terms of trade effect on Finland is the same as for oil consumer countries. But, Finnish exports to the Soviet Union will experience a volume change in the same direction. Hence, compared to other oil consuming nations, more Finnish companies and industries will suffer a short run fall in demand when oil prices drop.

2.2 Public Sector Activities

The role of the public sector is crucial when evaluating modern welfare states, and especially when we look at the Nordic countries. As Table I:2 clearly reveals, however, the magnitude of public sector activities varies significantly between the Nordic countries.

The share of public sector activities is definitely most extensive in the Swedish economy, particularly when it comes to income redistribution. In the Swedish case, transfers to the private sector add up to more than one third of domestic GDP, while this share is one fifth, or less for the other Nordic countries.

Public investments are also far more extensive in Sweden than in the other Nordic countries. But they do not make up any substantial part in any of the Nordic economies.

Public consumption as a share of GDP is the highest in Sweden and in Denmark. For Finland and Norway shares are more in line with the average for OECD-Europe. However, on a per capita basis, Norwegian public consumption is closer to the Danish standard, and well above the Finnish.

Taxes is the prime source of public sector financing. Personal and corporate income and wealth form the tax base. In addition taxes are levied on a multitude of economic transactions. Hence, prices on products and production factors are capriciously affected, and accordingly economic activities asymetrically influenced. To this we return below (section 4.4).

However, it is worth noticing that while Finland has experienced a slowly growing share of the public sector, the public sectors of Denmark and Sweden expanded rapidly during the 1970s, and with increasing fiscal deficits. Hence, efforts to curb public activities have been initiated in the 1980s. In Norway, the relative share of public sector activities has been declining slowly since the late 1970s (see supplementary figures S-I:5, S-I:6 and S-I:7).

2.3 State of Economic Balance

Over the years public deficits have significantly increased gross state debt in Sweden and Denmark compared to Norway and Finland (supplementary figure S-I:9). A significant share of this debt has been acquired abroad. In fact, state foreign debt in Denmark and Sweden makes up for a substantial part of

Table I:2 Public sector activities

	Denmark	Finland	Norway	Sweden
PUBLIC CONSUMPTION				
– share of GDP, per cent				
1985:	25.2	20.2	18.6	27.7
Trend 1975–85:	At 1975 level; downward trend since 1982	Rising from 17.1 per cent	Slightly below 1975 level; downward trend	Rising from 23.8 per cent; downward trend since 1981
– per capita in USD[1]				
1985:	3.374	2.546	2.944	3.748
by purpose, per cent of public consumption				
1985:	100.0	100.0	100.0	100.0
– General public services	–	15.1	11.8	
– Education	20.4	24.9	26.3	
– Health and social security	36.2	37.4	31.1	
– Industrial services	4.4	7.5	11.6	
– Defence	5.9	7.7	16.1	
– Others	–	7.4	3.2	
PUBLIC INVESTMENTS				
– share of GDP, per cent				
1985:	2.1	3.1	2.8	6.1
TRANSFERS TO PRIVATE SECTOR				
– share of GDP, per cent				
1985:	19.0	15.1	20.2	34.3
Trend 1975–85:	Rising from 16.3 per cent, downward trend since 1982	Rising from 13.4 per cent	At 1975 level; downward trend since 1982	Rising from 21.5 per cent; stable since 1982
– per capita in USD[1]				
1985:	2.539	1.905	3.197	4.641
TAXES				
– share of GDP, per cent				
1985:	49.1	38.1	49.4	50.6
of which				
– direct taxes	28.9	16.6	22.1[2]	21.7
– social security contributions	1.9	7.2	11.4	12.6
– indirect taxes	18.3	14.3	15.8	16.3

[1]) Calculated by applying December 31st exchange rates.
[2]) Includes direct and indirect taxes put on petroleum production, 10.4 % of GDP

Table I:3 State of balances in Nordic economies

Summary of recent trends, 1983–1986

	Denmark	Finland	Norway	Sweden
EXTERNAL ACCOUNTS (share of GDP)				
– balance on current accounts:	Huge deficits mainly due to net interest payments	Small, controlable deficits	Huge surpluses, which will shift to deficit	Small deficits due to net interest payments
Annual figures				
1983	– 2.2 %	– 1.9 %	3.6 %	– 1.0 %
1984	– 3.3 %	0.0 %	5.3 %	0.4 %
1985	– 4.6 %	– 1.1 %	5.1 %	– 1.1 %
1986-trend	Severe trouble on trade balance	Stable trends	Severe trouble on trade balance	Slightly improving
– accumulated net foreign assets:	Steadily deteriorating	Slightly improving	Rapid improvement upto 1985	Slightly improving
Annual figures				
1983	–36.0 %	–17.8 %	–22.4 %	–23.6 %
1984	–38.9 %	–17.3 %	–17.0 %	–24.6 %
1985	–40.0 %	–15.9 %	– 8.1 %	–22.0 %
PUBLIC ACCOUNTS (share of GDP)				
– total public consolidated surplus	Rapidly improving	Good balance	Huge surpluses up to 1985	Deficits, but steady improvements
Annual figures				
1983	– 7.3 %	– 1.6 %	3.0 %	– 5.0 %
1984	– 4.3 %	0.4 %	6.8 %	– 2.3 %
1985	– 1.9 %	0.4 %	7.5 %	– 2.7 %
1986-trend	Improvements continue	Small deficit	Fiscal position is weakened	Improvements continue
– gross state debt:	Declining from high levels	Rather stable at low levels	Increases from low levels	Levelling out at high levels
Annual figures				
1983	67.7 %	13.9 %	23.0 %	57.7 %
1984	74.5 %	14.4 %	25.9 %	61.3 %
1985	70.7 %	14.0 %	29.0 %	62.5 %
INFLATION (consumer prices):	Decreasing towards inter-national levels	Decreasing towards inter-national levels	Decreasing towards inter-national levels	Decreasing towards inter-national levels
Annual figures				
1983	6.9 %	8.5 %	8.3 %	8.9 %
1984	6.3 %	7.1 %	6.2 %	8.0 %
1985	4.8 %	5.9 %	5.7 %	7.4 %
1986-trend	Stays at inter-national levels	Continuing towards inter-national levels	Differentials to international levels is rapidly widening	Continuing towards inter-national levels
UNEMPLOYMENT (share of labour force):	Reducing, but very high levels	Rather stable at medium high levels	Reducing from low levels	Reducing from low levels
Annual figures				
1983	10.5 %	6.1 %	3.3 %	3.5 %
1984	10.2 %	6.2 %	3.0 %	3.1 %
1985	9.0 %	6.3 %	2.5 %	2.8 %
1986-trend	Stable, or slightly increasing	Stable, or slightly increasing	Stable, continued tight labour markets	Stable, continued tight labour markets

accumulated net foreign debt held by these nations (supplementary figures S-I:10 and S-I:17). Hence, public interest payments to a great extent affect current account figures of both countries, illustrating that fiscal deficits not only are caused by, but actually may cause imbalances in an economy.

However, the Swedish situation has been improved over the last few years (Table I:3). Growth has shifted from the public sector to exports, mainly as a result of the huge improvement in cost competitiveness achieved by devaluating the SEK in the beginning of the 1980s. This competitive edge has been maintained for several years, and private investments have increased while public deficits are diminishing. Hence, reinforced as they are by lower oil prices, improvements are expected to continue.

In Denmark even more spectacular improvements in public sector finances have occured. Within the 3 years from 1983 to 1986, the public sector deficit of more than 7 per cent of GDP has been eliminated. In sharp contrast to this, the external account has deteriorated over the same time span, from a little more than 2 per cent of GDP to approximately 5 per cent in 1986. The large deficits have several causes; servicing of the foreign debt, poor export performance and rapid increases in domestic demand. Whereas the fiscal deficit has been brought under control, private consumption and investments have boomed. The strong downturn in these demand factors during the late 1970s and early 1980s was reversed, fueled by income redistributions and availability of credit caused by deregulation of the financial markets. The strong recovery has been labour intensive and thus generated more jobs than generally expected when compared to the European experience. However, due to the continued growth in the labour force, unemployment levels are still very high.

Finnish economic performance has been balanced and strong for several years. External and public accounts have been well tuned, and the Finnish proneness to high inflation seems, at least temporarily, to be contained. Unemployment is still high, but well below the OECD average. Unlike other oil consuming nations, the direct effect of changing oil prices on the balance of Finnish external accounts is almost neutral. The agreement with the USSR governing most of Finnish oil imports provides a balance for this trade, regardless of what the oil price is. Low oil prices simply mean reduced exports to the Soviet Union.

Norway, on the other hand, has been severely hit by the low oil prices. Up to 1985 Norway benefitted from high oil prices, creating large export earnings and public revenues. External accounts balanced with huge surpluses, and so did state accounts. In 1986, however, when the oil price drop occured, the current account balanced with a deficit which is larger than the huge surplus of 1985. The fiscal balance of the state has definitely been weakened, but does not necessarily run into red figures. Unemployment figures are still low, while inflation again is increasing, due to the creation of an imminent upward pressure on prices through the mid-1980s, and due to the 1986 devaluation of the NOK.

The Norwegian situation is particularly sensitive to future oil prices. If oil prices, contrary to the assumptions in Chapter II, were soon to rise, the Norwegian situation will improve, while prospects for Denmark, Sweden, and to a somewhat smaller extent for Finland would deteriorate. However, the effects on these countries are by no means symmetric, due to the different degrees of exposure. In particular, the negative effect of the terms of trade change and the negative effect of the reduced demand in western markets will more than compensate for the

positive effects of increased Finnish exports to the Soviet Union. The overall outcome of an increase in oil prices on the Finnish economy is thus negative.

2.4 Manufacturing Capabilities

Regardless of raw material prices, industrial capacity and competence will determine the economic future of all four Nordic economies. For Denmark, Finland and Sweden manufacturing constitutes the key industrial base. Most of their foreign trade consists of manufactured goods. Hence, actual levels of manufacturing exports, or the ability of domestic producers to compete with imports, will constrain domestic growth rates if the requirement of balancing external accounts are to be met.

Manufacturing is not as clearly the industrial base of the future Norwegian economy. However, if oil prices stay as we assume, Norway will have to rely on growing manufacturing capabilities to sustain its standard of economic well being. And, even if oil prices would rise, Norway will need a dynamic manufacturing business to provide for economic growth in the long term.

Hence, we will examine below several aspects regarding the state of Nordic manufacturing. It should, however, be pointed out that statistics on manufacturing are narrow in the sense that they do not properly account for the key role of manufacturing as a service producer. It is well known that service production which used to be carried out in manufacturing firms, has gradually – due to increasing division of labour – been decentralized into smaller service producing units. An important symbiotic relationship between manufacturing and knowledge intensive service industries is developing, emphasizing the need to take a broader look at the problem of defining and understanding the "growth engine" of a national economy.

Production and productivity

Both through the 1970s and 1980s, Finland has, on the average, had the strongest manufacturing growth of the four Nordic countries (supplementary figure S-I:18). Also Danish manufacturing production has been steadily growing since the early 1970s.

On the contrary, Norwegian and Swedish manufacturing production stagnated, and even fell, throughout the latter half of the 1970s. Swedish manufacturing output has, however, regained growth since the early 1980s, partly assisted by the devaluations of the SEK.

During the 1980s, output growth in Swedish manufacturing has, on the average, more or less kept pace with that of Finnish and Danish manufacturing. Norwegian output levels, on the other hand, are still below 1974 volumes, even though some growth has been recorded since 1983. Considering the upswing in Norwegian export markets, and a rapidly expanding domestic demand, this recent growth must, however, be regarded as weak.

A common characteristic of Nordic manufacturing is a slower growth in labour productivity during recent years compared to the 1960s and early 1970s. There

are, however, substantial differences between the Nordic countries. Finnish manufacturing has shown a strong, and the most stable productivity development of the Nordic countries since the early 1960s, while Norwegian productivity records in manufacturing, on the average, have for the last 25 years been poorer than for the other Nordic countries.

Danish manufacturing kept a good productivity performance through the 1970s, while Sweden lost pace. In Denmark these productivity records were achieved while unemployment was allowed to rise rapidly. However, during the 1980s the productivity performance of Swedish manufacturing has been improving, while it has been rapidly declining in Denmark.

Structure of manufacturing industry

Manufacturing industries in the four Nordic countries exhibit quite different corporate structures. The huge Swedish corporations with world wide operations immediately catches the attention.

More subtle differences may be revealed from a previous study on a sample of the largest manufacturing companies in each of the Nordic countries (ETLA et.al., 1985; collecting 1984 data on 38 Danish, 40 Finnish, 40 Norwegian, and 32 Swedish companies). Comparing these samples, the following conclusions can be drawn:

- The large Swedish manufacturing companies are much larger than the large companies from the other Nordic countries. On the average the Swedish sample employed more than twice the average number of employees in the largest Finnish, Danish and Norwegian companies.

- The production of large Swedish companies is more internationally oriented than that of large Danish, Finnish and Norwegian companies. Half the number of employees in these large Swedish companies was in foreign subsidiaries. This is to be compared with large Danish corporations having about one fourth of corporate employment abroad, Norwegian having one fifth, and Finnish one sixth.

- These large companies operate in the other Nordic countries through subsidiaries. The Finnish and Norwegian companies are relatively most Nordic, having more than one third of their foreign operations in another Nordic country. The large Swedish companies are the least Nordic in this respect, reflecting the world wide base of their business. Yet, in absolute terms, this group of Swedish companies has more people employed in the Nordic countries than the groups of large Danish, Finnish or Norwegian companies.

- The ownership base for these largest manufacturers in the Nordic countries is predominantly domestic. Hardly any of them have owners from another Nordic country, and only a few are majority owned from abroad.

Further studies show that the large companies hold different positions in manufacturing in each of the Nordic countries. In the early eighties, for instance, the 10 largest manufacturing companies quoted on stock exchanges, contributed with almost one third of value added in Swedish manufacturing, 22–23 per cent of

value added in Finnish and Norwegian manufacturing, while in Denmark this group accounted for only 14 per cent (Oxelheim, 1984). Dominance of large firms has continued to increase in the 1980s in all the four countries, but most strongly in Sweden and Norway.

The relative importance of large companies in the domestic economies of the Nordic countries also show up in export figures (supplementary table S-I:15). In Finland and Sweden the 10 largest exporting companies make up for one third or more of exports. In Denmark, export concentration in this respect is much lower, probably well below 20 per cent. While manufacturing companies dominate exports in these three countries, petroleum production puts oil companies at the top of the Norwegian list, and even causes a higher concentration ratio for Norway than for the other three countries. However, looking only at manufacturing companies gives another picture. Nevertheless, nine tenths of Norwegian commodity exports excluding petroleum, can be ascribed to not more than 60 companies (Berrefjord, 1986). Hence, while a few large domestic companies dominate international sales and operations of Swedish, Finnish and Norwegian manufacturing, a large set of fairly small companies are responsible for Danish exports.

Investments

Investments define and constrain future production activities. Most attention has been paid to fixed capital formation. However, fast growing industries are characterized by a larger share of total investments being allocated on R&D, marketing and human capital than on machines and buildings. The former investment categories do not show up in national account statistics. Hence, a slow down in capital formation as conventionally measured is not necessarily a bad sign. On the contrary, if it is compensated by larger increases in "soft investments", it should rather be a healthy sign, indicating that manufacturing structures are adjusting towards other, and potentially more rewarding, lines of production and markets.

On the average the volume of fixed capital formation in Nordic manufacturing has not increased over the last 10 years. But, there are, of course, variations from one year to the other, and patterns differ between manufacturing in the four Nordic countries (supplementary figure S-I:19). The most notable observation is the steady growth in investments in Finnish manufacturing since 1978.

In all the Nordic countries, however, the investment ratio, i.e. investments in relation to value added in manufacturing, is lower than it used to be during the sixties and early seventies. As already mentioned this is typical of fast growing industries, and may even be a good indicator for the future.

Data on "soft investments" are, however, not so easy to come by, and as yet not as reliable as statistics on fixed capital formation. Nevertheless, studies suggest that increases in R&D investments in fact have compensated for the fall in the investment ratio in Swedish manufacturing. Furthermore, in 1983 Swedish manufacturing used 3.7 per cent of the total man year input in manufacturing for R&D activities, compared to 1.6 per cent in Denmark, 1.4 per cent in Finland, and 1.1 per cent in Norway (Yearbook of Nordic Statistics). In addition, the largest Swedish corporations (global operations) invested more than 20 per cent of total

investments in R&D and almost 30 per cent in marketing, compared to slightly more than 50 per cent in process equipment (IUI, 1985). Swedish manufacturing appears to be at the world top in this respect, only surpassed by US manufacturing.

All through the 1980s the volume of R&D expenditures in Finnish manufacturing has grown fast, illustrated by current levels which are more than twice those of 1980. This increase in Finnish R&D expenditures has been much stronger than the growth which also has taken place in these activities in Danish, Swedish and Norwegian manufacturing through the 1980s.

Sweden has by far the most sophisticated manufacturing sector of the four countries. But, Finnish manufacturing is strengthening its efforts to move in the same direction. And, at the same time fixed capital formation is kept at high and increasing levels. For Norwegian manufacturing it is hard to trace any underlying adjustment processes of this kind at the aggregate level of manufacturing industries.

Trends in Nordic manufacturing

The impression from this brief account of recent performance of Nordic manufacturing, is that Finnish manufacturing should be placed at the top of the list. Productivity growth has been stable and rather strong for a very long time. Exports have developed favourably, despite a deterioration of cost competitiveness (supplementary figure S-I:20) due to a rapid increase in labour costs and to the appreciation of the FIM. Hence, production has grown steadily. At the same time adjustment processes are obviously pushing Finnish manufacturing in a more sophisticated direction.

The contrast with Norwegian manufacturing is striking. Except for 1983 when labour lay offs in manufacturing were extremely high, productivity has developed poorly over the last ten years. Manufacturing exports have rapidly lost market shares over the same period, although a weak recovery is perceptible in the last couple of years. At the same time, manufactured products competing with imports have rapidly lost market positions at home as well. Norwegian firms have only slightly benefitted from the high levels of demand of recent years. Manufacturing output is still at 1975 levels. The industry structure has been rather stable. Moreover, it is hard to detect increasing efforts to move production and business in a more sophisticated direction.

The development of Norwegian manufacturing industry should be judged in the light of the fact that during this period a new sector engaged in producing tradables has developed in Norway. This may explain, and in economic terms even justify, a setback in production from the exposed parts of Norwegian manufacturing, and a reduced input of production factors for this purpose. The reasons for future concern, however, are not a stagnating production, but the way this production is carried on, and consequently the risk exposure of the national economy. The slow productivity growth suggests inefficiencies in production compared to manufacturing in other countries. Besides, manufacturing investments, which nevertheless have been kept high, seem to be of the same kinds as before, and really not pointing to qualitative changes in the ways of doing business.

During the 1970s Swedish manufacturing exhibited the same structure conserving investments in old and/or crisis struck industries. Government subsidies made this possible. However, high soft investment levels were at the same time maintained in the healthy, growing firms. During the 1980s Swedish development has taken another and more favourable direction than in Norway. Exports and manufacturing output have regained growth, and productivity increased rapidly during 1983 and 1984. This development is, of course, partly due to cost benefits gained from the devaluations of the SEK in the early 1980s, and increased capacity utilization made possible by the simultaneous international upswing. At the same time policies in the 1980s have been less inclined to support obsolete industries and companies through subsidies. Hence, there is little doubt that Swedish manufacturing is back on the right track.

Danish manufacturing has shown a rather good performance over the last ten years. Sector measurements of productivity performance, of output growth, and of

Table I:4 Nordic manufacturing
Summary of recent trends, 1983–1985

	Denmark	Finland	Norway	Sweden
LABOUR PRODUCTIVITY				
Trend	Strong growth is levelling out	Stable rapid growth	Temporary improvement is levelling out	Strong improvement is levelling out
Annual figures				
1983	5.3 %	5.8 %	6.3 %	7.4 %
1984	0.9 %	5.8 %	3.7 %	6.2 %
1985	−1.2 %	5.0 %	1.6 %	1.2 %
INVESTMENT RATIO				
Level	Lower than in the 1970s	Lower than in the 1970s	Lower than in the 1970s	Lower than in the 1970s
Trend	Growing	Stable	Growing	Growing
R&D				
Level	Low	Low	Low	High
Trend	Slightly growing	Rapidly growing	Slightly growing	Slightly growing
RELATIVE UNIT LABOUR COSTS	Stable since cost positions were strongly improved in early 1980s	Detoriated since 1980, slight improvement after 1982 devaluation	Stable after rapid detoriation in the early 1980s. Several minor devaluations have taken place	Cost positions are kept since significant improvement from devaluations in the early 1980s
PRODUCTION				
Trend	Rapid growth	Strong and steady growth	Weak recovery	Rapid growth is levelling out
Annual figures				
1983	3.3 %	3.4 %	−1.0 %	5.1 %
1984	5.8 %	4.1 %	2.5 %	7.0 %
1985	5.3 %	3.3 %	2.4 %	2.1 %

unit labour cost, have all been encouraging. However, this has not been sufficient to escape balance problems, neither on external accounts nor in the employment situation. At least over the last few years output growth has been stimulated by a boom in domestic demand, which cannot be expected to last. Moreover, Table I:4 summarizing the recent trends in Nordic manufacturing, clearly reveals that productivity records in Danish manufacturing during this upswing have been very poor.

Recent indications are that Finnish and Swedish manufacturing should be in a position to continue their good performance. The Finnish challenge is to handle industrial adjustments caused by reduced levels of Soviet exports and to manage the structural transformation out of the heavy dependence on basic industries that Sweden went through in the 1970s. The Swedish problem is not to drop behind in competitiveness from a domestic production base, a task that depends critically on the ability of policy authorities to manage the domestic price development.

Recent trends in Norwegian manufacturing have been rather unfavourable when the international upswing and high levels of domestic demand are taken into account. The challenge is really one of revitalizing and restoring rapid growth in manufacturing industries, which is urgently needed to compensate for the negative effects of low oil prices; oil prices being expected to remain low for years to come.

To sum up, manufacturing capabilities differ a lot between the Nordic countries. Nevertheless, as was concluded already in "Economic Growth in a Nordic Perspective" (1984) the Nordic nations taken together are well endowed with commercial and technological competence. The critical question is rather whether the Nordic socio-economic systems are capable of the adjustment needed to exploit the ample business opportunities which exist.

2.5 Outlook 1985–1990

According to the country chapters, Nordic growth prospects for the medium term future are not so good. In general, GDP growth is expected to slow down for the remaining years of the eighties. In all countries overall production growth is projected to be slower than in recent years, as well as below expected OECD growth, while inflation is forecast to run ahead of the OECD. The outlooks for the Nordic economies, as they are presented for each country, are summarized in Tables I:5–I:7.

In Denmark domestic demand is predicted to be curbed, partly through policy measures, and exports are expected to be the strongest component in demand over the next few years. In fact, exports are expected to grow significantly faster than imports. This will contribute to significant surpluses on trade accounts, which despite huge interest payments on foreign debt, may imply that balance on current account is within reach by 1990. Danish inflation is expected to be at international levels. Unemployment, however, is predicted to grow.

As already mentioned, export performance is the major constraint on balanced growth in Denmark, and then especially in manufacturing industries. Manufacturing investments are expected to grow somewhat faster than output during the future period considered, and may allow for a balanced development with higher growth rates in the early 1990s.

Table I:5 Balance of resources, 1985–1990

Average annual change in volume, per cent

	DENMARK	FINLAND	NORWAY	SWEDEN	NORDIC
GDP	2.3	2.5	2.1	2.0	2
Imports	1.8	3.0	1.0	3.8	3
Total resources	2.1	3.0	1.6	2.4	2.5
Exports	3.5	2.5	3.5	4.0	3.5
Investments	1.5	1.9	−1.7	2.2	2
– private	1.6	2.0	−2.0	3.7	–
– public	1.0	1.5	1.0	1.5	–
– residential	–	–	–	0.5	–
Consumption	1.8	2.9	1.6	1.6	2
– private	2.2	3.0	1.5	2.0	2.5
– public	1.0	2.5	2.0	1.0	1.5
Total demand	2.1	3.0	1.6	2.4	2.5

Table I:6 Nordic economic balance. Outlook

	DENMARK	FINLAND	NORWAY	SWEDEN	NORDIC
Balance on current account 1990, per cent of GDP	0.3	0.0	−1.5	0.2	0
Public sector consolidated surplus 1990, per cent of GDP	0.3	−1.5	−1.0	0.0	−0.5
Consumer prices, 1985–1990, average annual change, per cent	3.5	3.5	6.0	4.4	4.5
Open unemployment 1990, per cent of labour force	9.0	6.5	4.0	3.0	5

Table I:7 Nordic manufacturing, 1985–1990

	DENMARK	FINLAND	NORWAY	SWEDEN	NORDIC
Manufacturing output, average annual volume change, per cent	2.8	2.5	0.5	3.0	2.5
Manufacturing labour productivity, average annual change, per cent	2.1	3.5	1.5	2.5	2.5
Manufacturing investments, average annual volume change, per cent	4.6	4.0	0.0	5.0	3.5

The improved performance of Swedish manufacturing during the first half of the eighties, is expected to be maintained also for the latter half of the decade. Exports will continue to be the major growth factor, triggering off an increase in private investments. External accounts will be in balance, and so will fiscal accounts of the public sector due to the slow growth in public expenditures assumed. Unemployment is expected to increase slightly, but to stay low by international standards. Even inflation is expected to come down, but to stay above the international average. This is considered an optimistic scenario that is critically contingent on a pronounced expenditure constraint on the part of the public sector.

Also Finnish growth rates, of GDP as well as of manufacturing, will be slower than over the last decade. This is partly due to the decline in Soviet trade, which follows from low oil prices, and which will also slow down export growth. Private consumption is in fact expected to be the fastest growing component in Finnish total demand over the next four years. This will not, however, severely disturb the economy. Inflation is expected to come down further, almost to the international level. The balance on external and fiscal accounts should be quite manageable, despite the fact that economic growth is expected to slow down, and that employment in some labour intensive industries is likely to decline. The latter may cause total unemployment to rise somewhat above current levels over the period considered.

Imbalances and slow growth in output are bound to characterize the Norwegian economy over the period considered, when the price assumption for oil of Chapter II is applied. Long term growth depends on a revitalization of manufacturing industries. However, in a medium term perspective the outlook is that the stagnation in manufacturing will prevail. The major growth factor for the period considered will be petroleum production, due to ongoing field development projects. Consequently, increasing petroleum production will be the prime factor behind the volume growth in exports up to 1990. Domestic demand will, however, slow down from the high levels of 1986; consumption is expected to level out and investments to fall quite substantially. Hence, imports will be reduced, and are estimated to be only slightly above 1985 levels in 1990. This will on the other hand – due to the terms of trade – not prevent current account from balancing with deficit all through the period considered. In addition, balance figures on public accounts are likely to turn into the red, while state debt is predicted to be rapidly growing as the state will be the major investor in Norwegian petroleum activities. Inflation is expected to stay well above the OECD average, and unemployment will most likely increase. In one sense the Norwegian economy is set for a development very similar to that experienced by Sweden in the 1970s.

Altoghether this implies that the medium term outlook for the Nordic economies, except for Norway, is one of fiscal constraint and a more balanced growth compared to the late seventies and early eighties. However, even so, Nordic exports are expected to lag significantly behind the 5 per cent growth in world trade predicted in Chapter II. Manufacturing growth in output, as a consequence will be slower than that among the industrial countries, and the growth engines of each individual economy will not be able to pull the economy along faster than just above 2 per cent, compared to the OECD-GDP prediction of 3 per cent. Demand will run ahead of production, and each Nordic country will experience faster inflation than the OECD average. Recalling the earlier argument in "Economic Growth in a Nordic Perspective" (1984), this raises the question why the Nordic economies, despite their endowment of industrial technology will lag behind the rest of the industrialized world. So, the question to address is whether the long term growth potential of the Nordic economies may be reactivated through policy.

3. Nordic Competitiveness and Industrial Policy – Transforming the Industrial Base

3.1 Do We Need Industrial Policies?

Many of the Nordic exporters are operating in mature industries. Several companies of national importance face a situation of slow growth, stagnation or even reduced demand in their markets, and from the export patterns presented earlier we know that this is particularly so in the case of Norway and Finland. In addition, the Nordic firms in these industries, and in others as well, have difficulties in defending their market positions.

The Nordic industrial nations are therefore facing both a structural problem and a problem of competitiveness; problems in common with many other Western economies. The most important impact of this situation concerns the external balance, and indirectly the power of macro economic instruments to support economic growth. For the open Nordic economies, a stimulation of total demand through economic policy measures to a great extent escapes out of the system, thereby rather increasing import figures. When this is not matched by increasing export, the development becomes a story of unbalanced growth, most often in combination with domestic inflation. The current challenge therefore is what policies can do in supporting the modernization and transformation of the industrial base.

A succesful transformation of the industrial base will further increase the power of demand policy instruments, e.g. when it comes to counteract business cycles. This is so because a competitive and responsive production system reduces the inflation risk when running an expansionary demand policy. As we see it, efficient supply side policies is a necessary complement for macro economic demand policies to work.

There are two problems to be addressed; (1) the structural problem of being too heavily involved in mature industries, and (2) the problem of weak competitiveness. From a policy point of view it is important to notice that both these problems relate to the composition and orientation of the manufacturing production system and the management skills of business firms in repositioning themselves in a new technological and marketing environment. The latter is also intimately related to relative prices in the economy, and hence also to structural factors like the size of the non-market sector, taxes, etc.

Claiming to promote industrial development, many of the industrial policy programmes pursued during the last decades have been rather defensive and typically structure conserving. As a consequence policies have been rather unsuccessful in terms of stated objectives. This appears to be a quite general experience from all industrialized countries (Eliasson, 1984). However, in this context one should not forget that industrial policy intentions at any time are competing with vested interests of various kinds and political strenght.

When it comes to practical policy matters, therefore, this field is loaded with controversies. This issue cannot be sorted out on a few pages. We have preferred to concentrate attention to two central issues common to all Nordic economies. The first concerns the direction of industrial transformation; what are the opportunities?

The second issue addresses the question of investment climate, focusing on the relationship between rates of return and real interest rates. Will Nordic manufacturing, partly due to expansionary state budgeting, experience an interest squeeze that cools down the transformation process?

3.2 The Direction of Industrial Transformation

The conclusion in our earlier assessment, "Economic Growth in a Nordic Perspective" (1984), was that the global economy, notably its manufacturing industries, may be set for a technological revolution associated with the diffusion of modern information technologies. This scenario cannot be scientifically confirmed, but evidence in its favour has been increasing since the publication of the earlier study. Our intention is not to assess the probability of its occurrence. If the probability is above zero – which we definitely think is the case – its realization involves a tremendous technological exposure of the low performing firms and nations, if they do not become commercially and technologically updated. This gloomy scenario will be prevented from occuring if firms are allowed to participate freely and "spontaneously" in the restructuring and learning process going on in advanced markets for manufactured products.

The modern information technology appears to be a universial technology in the sense that its range of application is immense and essentially unpredictable. One thing may be taken for sure: the diffusion of new technological applications depends entirely on the extent of local industrial competence (Eliasson,G., 1986). Firms and nations found lacking in this respect may rapidly be finding themselves left behind in international competition.

This is not a general problem for the most advanced Nordic firms. More important is that a general technological upheaval will asymetrically and negatively affect the average and low performers in each nation. These are also the ones that have most often been protected from competition by regulation and defensive measures.

The "offensive" line of policy should therefore be to facilitate the upgrading of the competence of the average firm, partly by deregulating national characteristics of product and factor markets, partly through a strengthening of the human capital resource base. In this way the firms will be more openly exposed to international competition and prevented from developing slowly into inferior producers. At the same time the external resource base they can draw on in terms of overall competence within the same market system is broadened.

Both the positive and the negative influence is needed to attain growth. Exposure alone will hardly generate the positive outcome because the industrial base in the Nordic nations is still too much dominated by production of simple products. In this area foreign competition is making significant inroads, while, at the same time, relative wages in this heavy segment of production has been slow to adjust downwards. As long as this situation persists, it is not in the interest of share owners of the average firm to invest for expanded volume production of simple products threatened by new foreign competition. Hence, the contribution to growth has to a greater extent to come from highly skilled work in an interplay with more sophisticated business organizations and management skills.

3.3 Are High Interest Rates a Long Term Problem?

The margin between the rate of return from investments and the interest rate indicates the investment propensity of the average manufacturing firm. The Danish analysis in Chapter III shows that a change in this yield difference is normally followed by a change in investments in the same direction. Profits signal optimism among investors. Furthermore, profit is also a direct source of finance, and of credibility to expand external finance through new equity issues or loans.

What really matters, however, is the supply of new, high yield investment projects, which depends on the competence within business organizations, the resource base, incentives and on the institutional setting within which investments take place. Considering the current production structure of Nordic manufacturing, there are reasons to believe that many Nordic investors are turning to other industries or abroad. And they will be more inclined to do so, the more narrow the difference between rates of return and real interest rates – the yield difference – turns out to be.

Figure I:1 pictures the rate of return on manufacturing investments and real interest rates in the Nordic countries over the last couple of decades. As the definition of these variables differs, attention should be on the development of the yield difference over time.

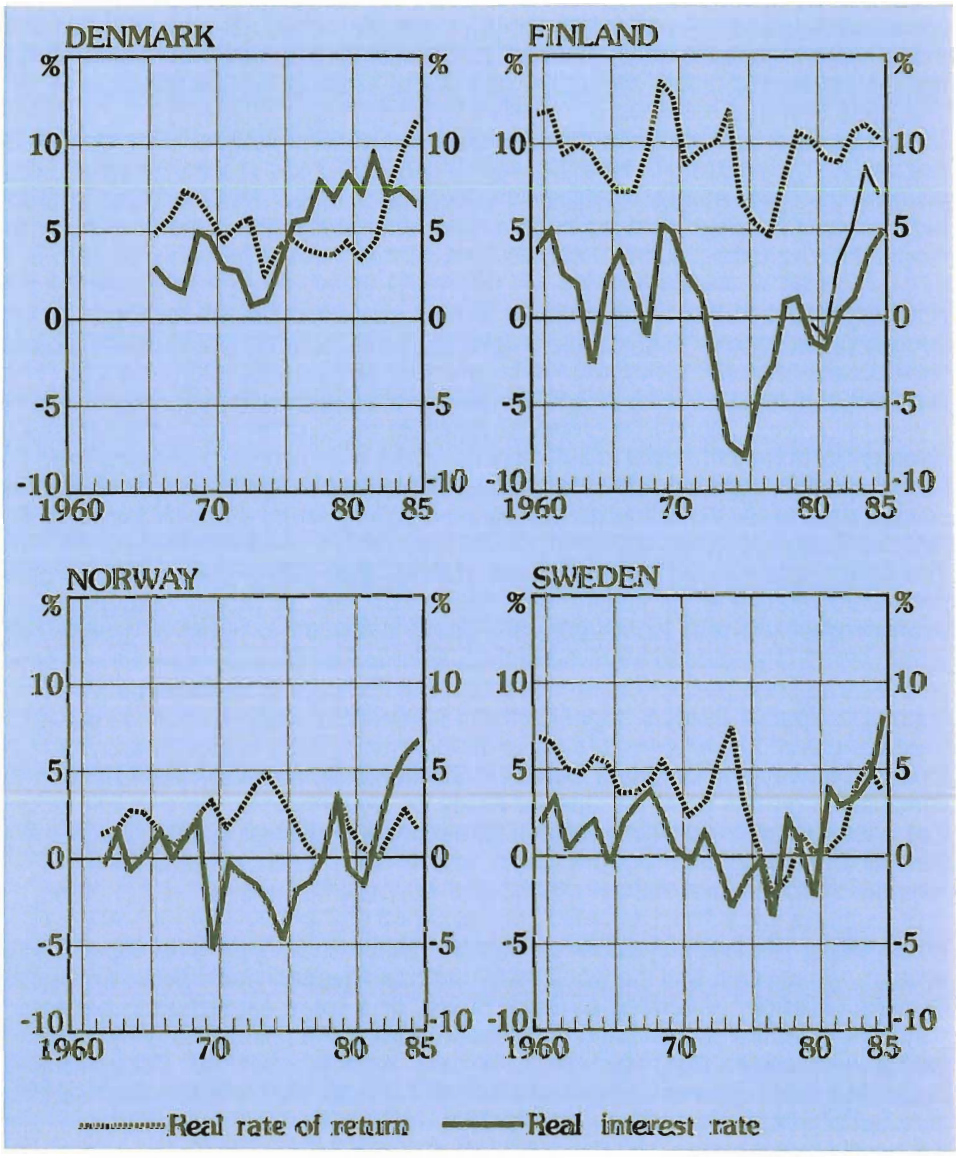
The pre-1974 period was characterized by a rather stable yield difference in Sweden; in Finland and Norway the margin widened, while in Denmark it shrank. During the latter half of the 1970s, however, the margin was shrinking in all Nordic countries. Apart from Denmark, where the yield difference has widened substantially since 1982, the margin has shrunk continuously in the other Nordic countries, most notably in Norway and Sweden. Hence, with the exception of Denmark, risk premiums attached to investments in manufacturing are currently being squeezed.

Taking a closer look at the curves, we see that increasing real interest rates is the main explanation behind this narrowing of the margin in the 1980s. The average Nordic firm was not recording a profit above the loan rate, despite a reasonably high rate of return. The Swedish case in the late 1970s and early 1980s is an exception. The rate of return was historically low in the late 1970s, but has rapidly recovered in recent years to match the rising real interest rate. However, the positive yield difference has disappeared.

The question is how this situation will influence the direction and magnitude of real investments. As long as real interest rates stay high, relative to the rate of return from average manufacturing projects, financial investments offer better alternatives for investors. In addition, it will be economically sound to direct the cash flow away from obsolete firms into other firms with better prospects – i.e. in other industries, or abroad.

We think Nordic real interest rates will stay high by international standards in the years to come. If this is not matched by rising profits, the development of narrow, or shrinking margins between rates of return and interest rates will continue. Then Nordic manufacturing is heading for a growth problem. Additional investments in mature industries, be it in raw materials or intermediate products, will not be able to compete with investments outside those industries, or with consumption. In the short run this process will probably result in increased unemployment.

Figure I:1 Real rates of return in manufacturing and real interest rates[1])



[1]) Rates of return are real net returns on capital employed (plant, equipment and inventories). They are not however, strictly comparable across the countries due to, for example, differences in measurement of capital stocks and in treatment of capital gains. Real interest rates: interest rate on industrial bonds (Sweden), on long term mortgage bonds (Denmark), government bonds (Norway) and average bank loan rate (Finland); deflated by changes in consumer price indexes.
The upper curve for real interest rate in the figure for Finland is unregulated interest rate on short term market funds. During the 1980s when the liberalisation process of the Finnish financial market has been proceeding the interest rate for new investment loans in manufacturing has gradually been approaching this rate.

3.4 Wage Rigidities and Growth

From this discussion one hypothesis stands out: The growth prospects of Nordic manufacturing are not particularly good. Therefore we do not expect to observe much volume expansion in manufacturing during the next four years. Price rigidities in Nordic factor markets is one of the reasons for this prediction.

Unskilled labor is gradually pricing itself out of the market. The firms are responding by a mixture of lay-offs, volume contraction and a shifting of resources towards more knowledge intensive and service oriented manufacturing production. If relative wages were adjusted directly and faster, rather than having firms respond by adjusting output volumes, growth rates would probably be higher.

Another aspect of the same problem is how economic life will respond to high interest rates; rates which we also expect to stay high, partly because of rigidities within credit markets, partly caused by previous large public sector deficits. This means that investors will be selective in favour of projects with high rates of return.

Such projects may not exist in sufficient numbers in an economy characterized by factor market rigidities. In addition, even a country with ample industrial competence will find it difficult to get expansion going under those circumstances.

The policy answer will be that those nations that either manage to enforce downward relative wage adjustments reasonably fast, or rapidly strengthen the average quality of the work force, are going to benefit in terms of growth and employment. The chapters on the individual countries do not present the Nordic countries as good performers on this score. But there are differences between the countries. Special Study 3 suggests that asymmetrical wage responses between expanding and declining sectors of the economy may have helped employment in Finland, Norway and Denmark, but not in Sweden. It is, however, hard to draw firm conclusions on this point (cf. Special Study 3). Nevertheless, there is little doubt that what is most important to achieve for nations with welfare state ambitions, is a general upgrading of the work force, and in turn business capabilities. This requires that industrial, labour market and educational policies be integrated.

When taking the interplay between demand policy and supply side aspects into account, we assume that the worst thing that could happen would be an excessive demand situation, generated by fiscal policy, or a wage expansion in protected industries, like the public sector. Increased demand coupled with a tight labour market will cause cost overshooting and lead to external disequilibrium. Stagnation and higher unemployment will follow. Thus, we are confronted with the question of what policy makers should do in order to reduce the probability of this unfavorable scenario.

3.5 The Drift towards Soft Investments

Taken together, new technologies – particularly in information processing, high real interest rates and downward price rigidities have generated a general drift towards soft investments. Investments in plants, buildings and physical process equipment will still, of course, be the capital base of goods production. But the relative importance of this form of capital for business success and competitiveness is rapidly decreasing compared to investments in product technology, marketing, etc.

This is to say that economically risky investment activities like research and development, internal education, the opening up of new markets and the like will be playing an increasing role within the business community. This is clearly revealed from Special Study 1 on rapidly growing Nordic companies; innovations and successes in 80 per cent of this company sample were mostly generated from the market, rather than from the process side. Technical innovations in the production process only is generally not sufficient to generate business success. Innovations must include the whole process of developing business ideas into commercial concepts, implemented through strategic thinking and realized by managerial competence and innovative production methods. This is why we expect the modern manufacturing firm to continue evolving into a service producer, moving manufacturing capital structures towards higher proportions of soft capital, most of it not being shown on the balance sheets of firms.

As a consequence investors have to focus on the quality of ideas, the individuals involved and on the team organization when risks are evaluated. This is becoming something of a challenge to finance systems now being released from regulation. Traditional securities have to be replaced by trust and beliefs.

New types of investment projects, and hence new risks, demand innovations of financing instruments. Growing needs for capital capable of carrying higher risks signifies the new demands on financing and for investors operating in the interface between traditional lenders and owners.

Internal cash flow is only accidentally the best source of finance for these new types of high risk investments. The knowhow needed for new ventures rarely exists within mature firms, even though management often believes this to be the case. Hence, internal cash flow finance avoids the market test and the institutional problem is to get it out into the open market, to return eventually to some other, more competent business organizations.

The standard way to handle this transformation is through entry and exit. Hence, the knowledge constraint becomes a constraint tied to equity financing in particular. This is partly a matter of institutional structure of the equity market, partly a problem associated with corporate and personal income tax systems. For instance, how will financial markets be able to handle the transfer of personal savings into corporate equity or venture capital?

To understand the growth process in manufacturing industries, we therefore have to include both the final investors, the actors within the finance system and the savers. Many studies indicate that the reasons for the slow development in the new industries are to some extent recruitment constraints and wage rigidities, but also simply lack of sufficient knowhow. But there are also reasons to believe that the adjustment processes in manufacturing industries may be hampered by the organization of the finance system. The upshot of the above analysis is a need for innovations of financing, to facilitate the forming of spontaneous new business combinations. This brings in the issue of deregulating the Nordic financing system and the equity market in particular, to which we now turn.

4. Growth Policies on the Nordic Scene – A Matter of Factor Market Organization

4.1 The Supply Side Should Be the Key Target for Nordic Growth Policies

The earlier study on "Economic Growth in a Nordic Perspective" (1984) concluded that from a product market point of view the Nordic economy possesses no particular, distinguishing features. Nordic producers, especially the advanced manufacturing firms, are more outward than inwardNordic oriented. International trade, in which the Nordic countries are involved, is for the most part conducted with non-Nordic economies.

It follows that joint Nordic demand policies would create a negligible demand stimulus for Nordic business, and mostly result in demand leakage to other economies, rather causing economic imbalances in the Nordic countries. Hence, coordinated Nordic demand policies are not viable policy options.

However, the extent of intra-Nordic trade implies that activity levels in any of the countries influence the others. This is especially true for the trade between Norway and Sweden, from which Sweden during the first six months of 1986 collected one third of its foreign trade surplus. Hence, the curbing of domestic Norwegian demand, which is taking place as oil revenues diminish, will also affect Sweden. This cannot be met efficiently by increasing Swedish demand. It rather raises the interesting question regarding the possibility of risk sharing through production arrangements on a Nordic base.

The question of risk sharing, however, also points to the aspect of growth policies aiming at a strengthening of business capabilities. In principle, this can be done in two ways; through improved factor market allocation and through an enlarged industrial base.

The labour market among the Nordic countries is already deregulated in the sense that Nordic citizens have the same access to jobs in any of the Nordic countries. Similar educational levels, language, culture and social values have facilitated this organization of labour markets. For workers and private business the labour market can also be said to be unrestricted. However, in areas where formal qualifications are required, restrictions on job access can easily be implemented.

On the other hand, capital markets, i.e. markets for finance, capital control and industrial knowhow, are still subjected to national regulations, despite the liberalisation which has obviously taken place (see Special Study 2). However, one can safely say that each country is much too small to constitute well functioning markets in these areas. The question is whether the Nordic area is sufficiently large.

There is no obvious reason to believe that the Nordic region should constitute the optimal size of an efficiently working capital market. However, while the Nordic nations certainly are too small individually, the world is much too large to be optimal. So, the rationale for organizing integrated capital markets on a Nordic base is mainly founded on the presumption that a wider base than the national means an improvement, and that it is realistic to begin by implementing it among the Nordic countries.

One qualification has to be made regarding deregulation of interNordic markets. It has been argued that doing so is not compatible with the OECD-code of liberalisation. However, the point is not to create new obstacles for capital movements in and out of the Nordic region, but to improve capital allocation within the area. It is rather so that Nordic capital market coordination will make the Nordic economy more efficient industrially – not more protected – and hence increase the economic welfare of the Nordic citizens without lowering economic welfare of anybody else. If this is incompatible with international codes of liberalisation, so is the current national organization of these markets. Hence, the argument appears to be "an excuse to do nothing".

4.2 Faster Nordic Diffusion of Industrial Knowhow

The point of removing regulations associated with the inter-Nordic allocation of capital resources is to increase the joint competitive position of the Nordic countries vis-a-vis the rest of the world. As far as financing is concerned, such deregulation will only benefit large firms marginally. They already have access to global markets. For small and medium-size companies, on the other hand, this may matter.

However, the major industrial potential of deregulating capital markets is not related to financing as such. Rather it is immanent in the relationship between capital control and industrial knowledge. Diffusion of knowledge is such a complex task that it cannot be planned. It has to take place through gradual experimentation, or what we have called spontaneous micro integration, involving numerous failures to achieve the necessary number of success stories. Evidence suggests that advanced industrial knowledge can only be diffused efficiently through the markets for ownership and control (Eliasson and Lindberg, 1987).

Hence, if the existing resource generation in the Nordic economies is to be strengthened, in the sense of forming a Nordic base for such activity, equity markets have to play a crucial role. Consequently the national characteristics of Nordic equity markets have to be deregulated. Then, experimentations in the sense of creating new business constellations across Nordic borders can take place, some of which will be successful.

A functional requirement for capital markets to work efficiently among the Nordic countries is the existence of a coordinated currency policy between the Nordic countries, hedging against the risks of sudden changes in the exchange rates. Hence, a common Nordic policy aimed at exploiting the Nordic potential in technology, based on diffusion through ownership control, means that the individual nations will have to solve domestic balance problems by other means than currency adjustments decided on separately in the individual countries. Generally speaking, balance problems will have to be solved in the short term through internal price and quantity adjustments, and in the longer term through the development of enhanced business capabilities.

The most straightforward way of strengthening these long term capabilities is through creating greater institutional homogeneity in Nordic factor markets. As we have pointed out, this will enlarge the industrial base, from which knowledge and skills develop. Capabilities will be strengthened through ripple effects of the creation of new opportunities for Nordic business.

In "Economic Growth in a Nordic Perspective" (1984) we concluded that the industrial base of the Nordic countries taken together was sufficient to form the critical mass needed to generate growth, once capital markets were organized to facilitate the necessary financing of spontaneous and efficient business combinations. In one sense we could say that the potential for economies of scale are not yet fully utilized. The exploitation of this potential, of course, depends – also critically – on the general educational level of the labour force. On this score one could say that the Nordic countries are already relatively well endowed in an international comparison. To what extent a reorganization of the educational system and research efforts in a Nordic perspective, or more public resources to research and education, are needed, is an open question that should be addressed by future research (see Eliasson et.al., 1986).

4.3 Risk Assessments in a Nordic Perspective

Nordic production structures differ in the sense that the economies are differently exposed to international markets, especially the oil market, and that their wealth is based on different business capabilities. Apparently, there should be a rationale for a supra-Nordic policy arrangement which could redistribute risks between the Nordic countries, and hedge the Nordic economies against the unpredictable fluctuations of raw material prices.

Our previous discussion on the potential of diffusing industrial knowledge through a Nordic equity market points to an efficient mechanism for implementing such risk sharing between the Nordic countries. Spontaneous micro integration across Nordic boundaries, which we assume to be the result of a more deregulated Nordic capital market, will also facilitate the spreading of business risks.

However, as far as differences in exposure to the fluctuations of the oil markets are concerned, these Nordic arrangements may not contribute to significant changes. Micro integration has to be based on what the companies see in their interests to pursue. Hence, when considering what is to be expected, the organization of the oil sector has to be taken into account.

The Norwegian oil business, which is the most important on the Nordic scene, and the one that really would matter as far as the redistribution of risks in this respect is concerned, is carried out by domestic and foreign oil companies. Most of these are quoted on stock exchanges. Thus, the option for non-Norwegian Nordic companies to buy shares in order to hedge their business against the negative impact of rising oil prices already exists, albeit within certain national restrictions on maximum proportion of foreign ownership.

From the Norwegian point of view, hedging against the impact of declining oil prices would be achieved by buying into Danish, Finnish and Swedish manufacturing. This means that oil companies operating in Norway will have to be involved. Except for Statoil, none of these face restrictions on getting involved in manufacturing if they find this profitable. However, buying into other companies, technologies and risk structures, requires management skills that may not exist within those organizations that happen to receive the oil rent, i.e. the oil companies and the Norwegian state. Furthermore, it may not be acceptable to potential candidates for acquisition, or for their nations of domicile, that the acquiring

companies are government owned, or controlled. However, what this points to is essentially the same thing as the lack of efficient financial intermediation. The policy proposal of this section, hence, is concerned with two achievements; to facilitate the emergence of efficient financial intermediators in the investment field, and to make sure that enough resources are channeled across national bounderies into a broad base of Nordic industries.

4.4 Closing the Circle Means Removing Tax Wedges between Investors and Savers

Nordic policy concerns are with a return to a long term, rapid and steady economic growth, and with the structural transformation needed for this to be achieved. In conclusion we ask in what way this process can be speeded up through policies.

Growing industries build on a larger share of soft capital associated with product development and marketing in particular. Particular forms of financing in larger volumes than before is required to finance the transformation of the Nordic industrial base. Desired in a long term, this places the organization of the Nordic capital market, and the equity market in particular, in focus.

The ongoing deregulation of the financial systems in the Nordic countries has contributed to a significant increase of credit supplies in all four countries. Households, the business community and the public sectors have become more indebted. We observe, however, this increased liquidity position has only marginally been transformed into the financing of manufacturing investments.

Private consumption has increased rapidly in Norway and Denmark. Furthermore, the increased liquidity in all four countries has been used to finance transactions in asset markets, especially in trading existing real estate and stock.

Asset prices have increased significantly over the last few years, with significant wealth redistributions as a consequence. Three questions are becoming critical:

(1) The increased stock prices have stimulated new equity financing, but not as much as would be expected and desired. Is this because of an undeveloped equity market organization of the Nordic economies, or because of insufficient demand for equity finance?

(2) Even though the mid 1970s was characterized by significant undervaluation of assets in the stock market, the turnaround has been so dramatic that one wonders to what extent the market is currently overvaluing assets, with a potential valuation reversal close ahead. Stable asset valuation is an important vechile for the allocation mechanisms of the capital market. Such instabilities in asset pricing, hence, will work against the positive scenarios through improved resource allocation that we are proposing.

(3) The wealth redistribution effects have been in favour of high income earners and already wealthy people. There are indications that these people are liquidizing their capital gains through borrowing against their wealth, thereby transforming wealth into consumption. This would be another destabilizing phenomenon, the significance of which is witnessed by very low or negative household savings ratios in Denmark, Norway and Sweden in the mid-1980s, as measured by national accounts.

The industrial policy issue which follows from these implications, may be serious. If, as we believe, investment opportunities in asset markets divert investments away from long term growth projects, and into consumption, the issue to address is how industrial projects can be made to offer a rate of return which will attract investors.

At a first glimpse, a saving-investment dilemma emerges. Real interest rates were shown in section 3.3 to be high, and apart from Denmark, very high compared to rates of return on productive investments in manufacturing. Hence, while investment and growth may require lower real interest rates, the rates of return to make private households save appears to be much higher.

The standard policy choice to remedy such a situation is between correcting incentives for savers in order to make them save, or to restrict access to credit. Restricting access to credit is difficult in the situation currently prevailing on the Nordic scene with financial markets which to a large extent are internationally integrated. Moreover, credit restrictions in essence mean that savers are forced to accept a lower return to saving than they want. This is not the right way to make them save. On the other hand, allowing the interest rate to increase reduces incentives to invest in manufacturing still further.

The real rate of return for savers, however, is not the same as the real rate of interest recorded in the market. Current tax regimes in Denmark, Norway and Sweden provide a very low, or even negative, after tax return for savers. In fact, the regimes favour heavy indebtedness of tax payers and promote dissaving, inflationary tendencies and a growing liquidity that may destabilize stock markets and real estate markets.

Distorted prices originating in the tax system appears to be one major cause behind the recent explosion of the transaction sphere in several Nordic economies, triggered off by the deregulation of financial systems. Savers experience a very low return to waiting after tax, despite high real interest rates. Therefore, the key to solve the apparent savings-investment dilemma seems to lie in tax incentives to private savers.

In this respect it is worth noticing that the explosion of the transaction economy has been most apparent in Denmark, Norway and Sweden, where interest incomes are heavily taxed. This strengthens the argument for revising the tax systems in favour of savings. In Denmark a new tax system has already been decided, and is to be gradually implemented from 1987.

However, if savings are to be channeled into investments through the bank system, the banks must provide the necessary risk capital to carry through soft invesments in industries. But, the traditional bank system is not organized to handle the new demands for finance. In fact, the question may be raised whether the excess supply of credit available for households is a response of a conservative financial system to the more risky industrial projects. Households – for the banks – may often be less risky borrowers than the modern firm.

This observation illustrates a potentially serious bias in the financial intermediation machinery. Resources may more easily be made available for consumption than for investment, indicating a need for innovating and restructuring financial instruments if the industrial transformation is to be speeded up.

Of course, it is not only the supply of risk capital, but also the supply of profitable projects which can slow down the transformation process in industry. Our point is, however, that deregulation of capital markets among the Nordic countries will facilitate the diffusion of industrial knowledge. New options for business will be created, and in turn business capabilities will be strengthened through experimentation and learning.

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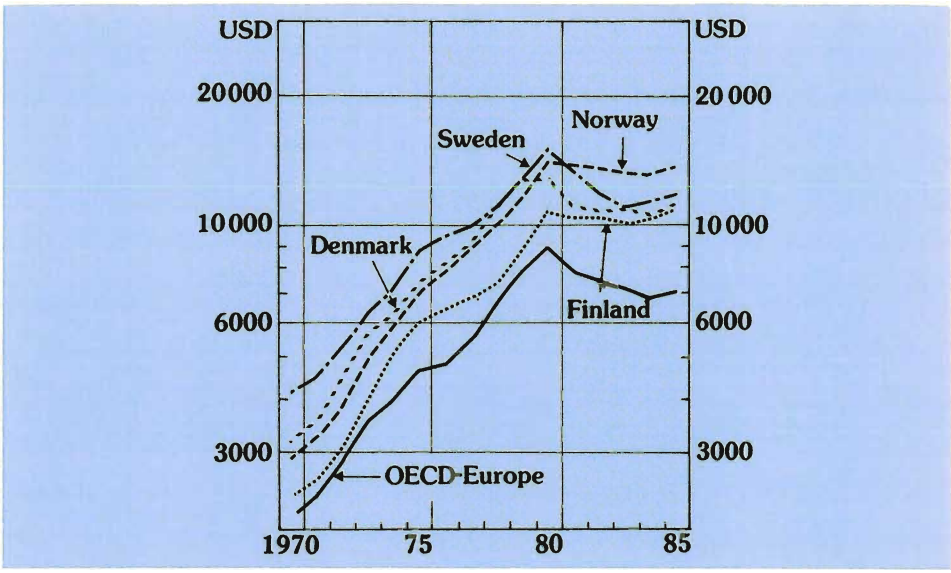
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Appendix I:1

Supplementary Figures and Tables

S-I:1 GDP per capita in USD, 1970–85

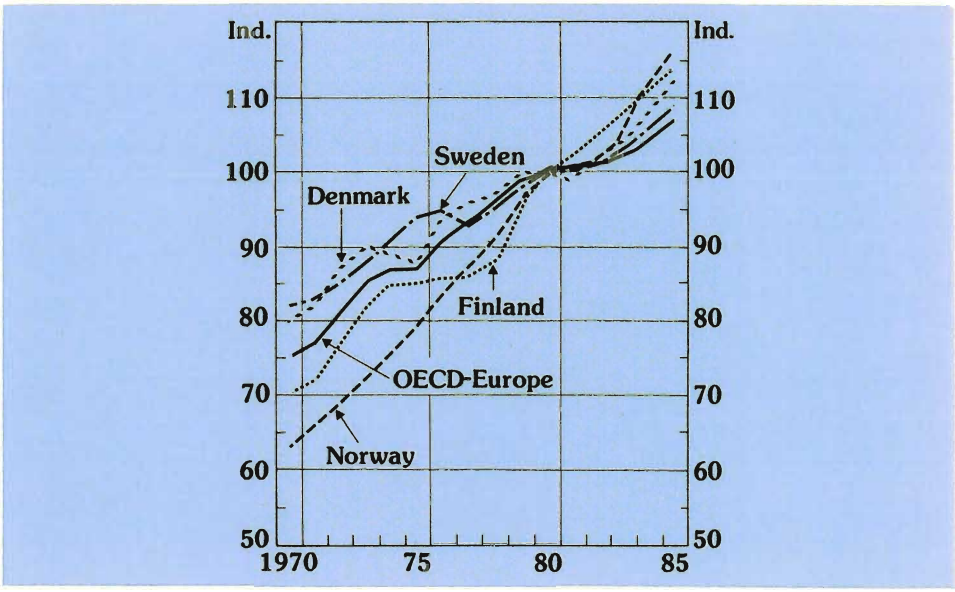
Current prices and exchange rates



Source: Statistical appendix and OECD

S-I:2 GDP volume, 1970–85

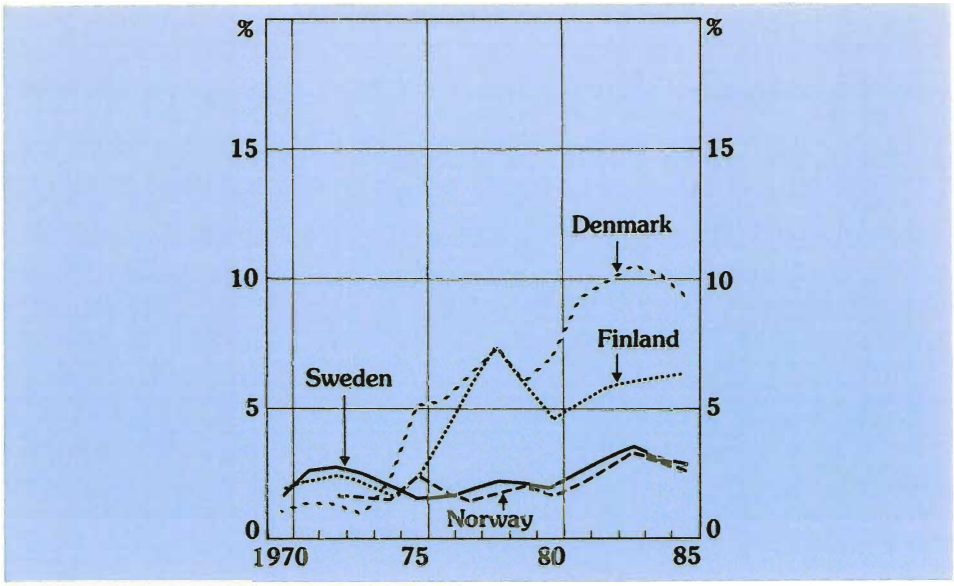
1980=100



Source: Statistical appendix

S-I:3 Unemployment rate, 1970–85

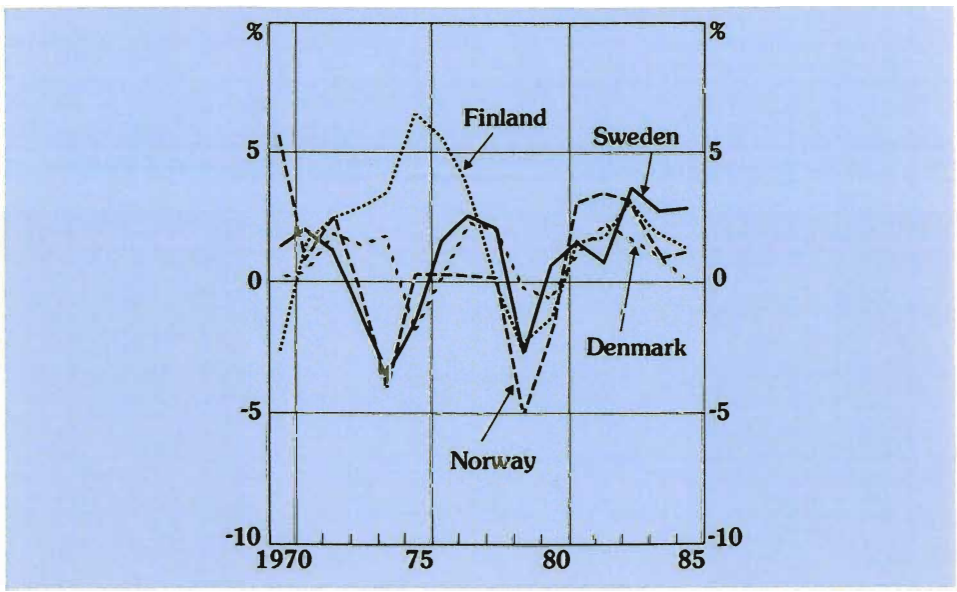
Per cent of labour force



Source: Statistical appendix

S-I:4 Consumer price inflation, 1970–85

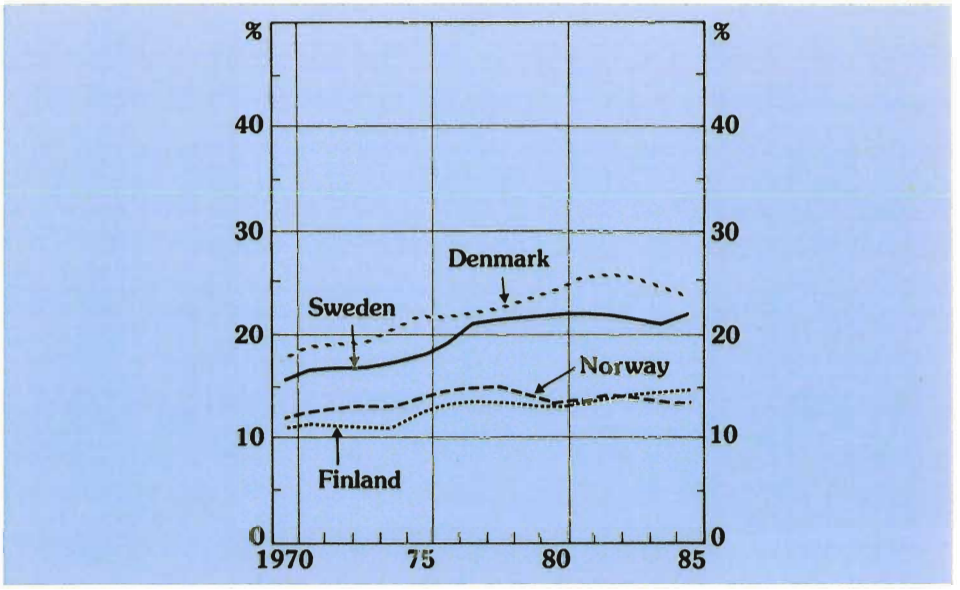
Percentage points deviation from OECD average



Source: Statistical appendix and OECD

S-I:5 Public sector production, 1970–85

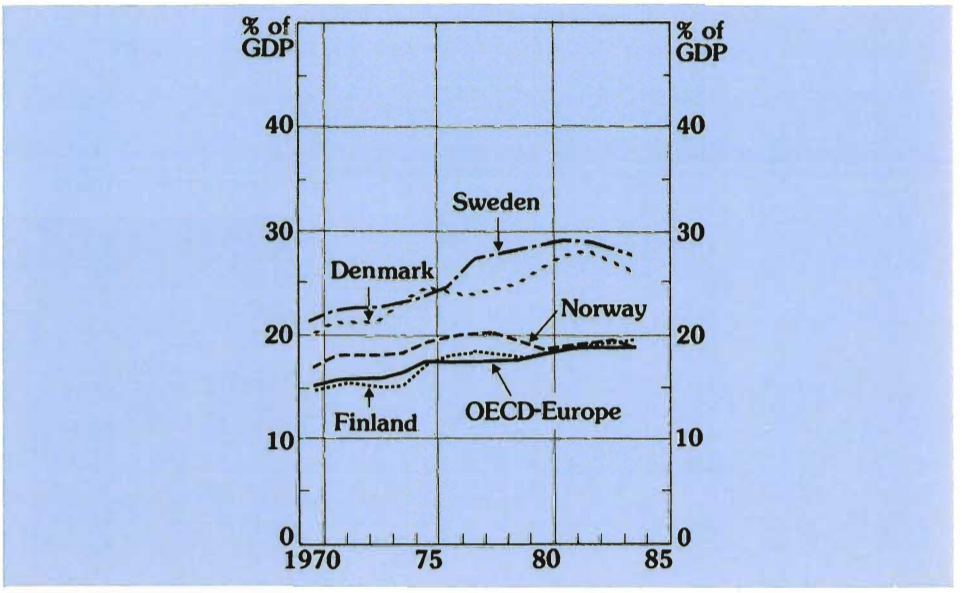
Per cent of GDP



Source: Statistical appendix

S-I:6 Central government final consumption, 1970–84

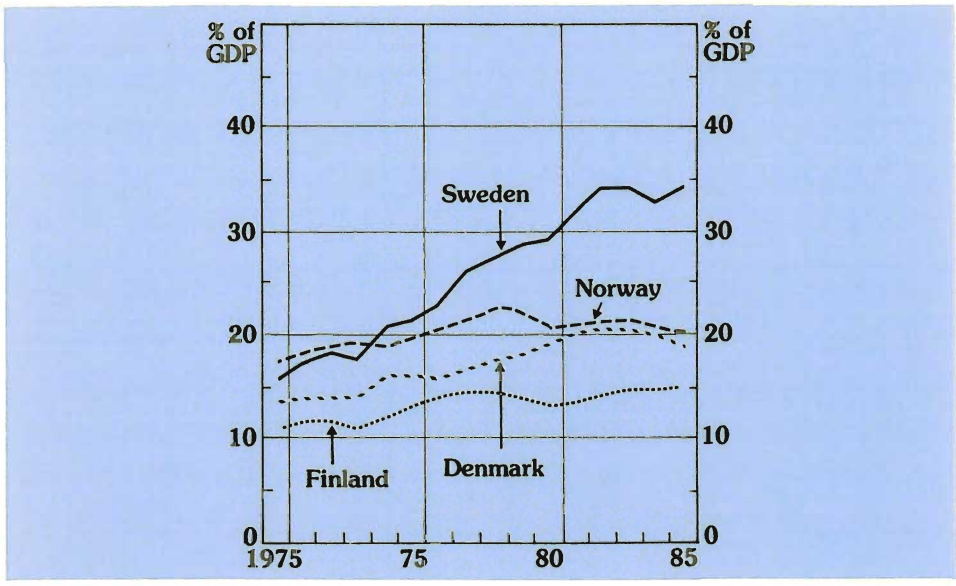
Per cent of GDP



Source: Statistical appendix and OECD

S-I:7 Public transfers to private sector, 1970–85

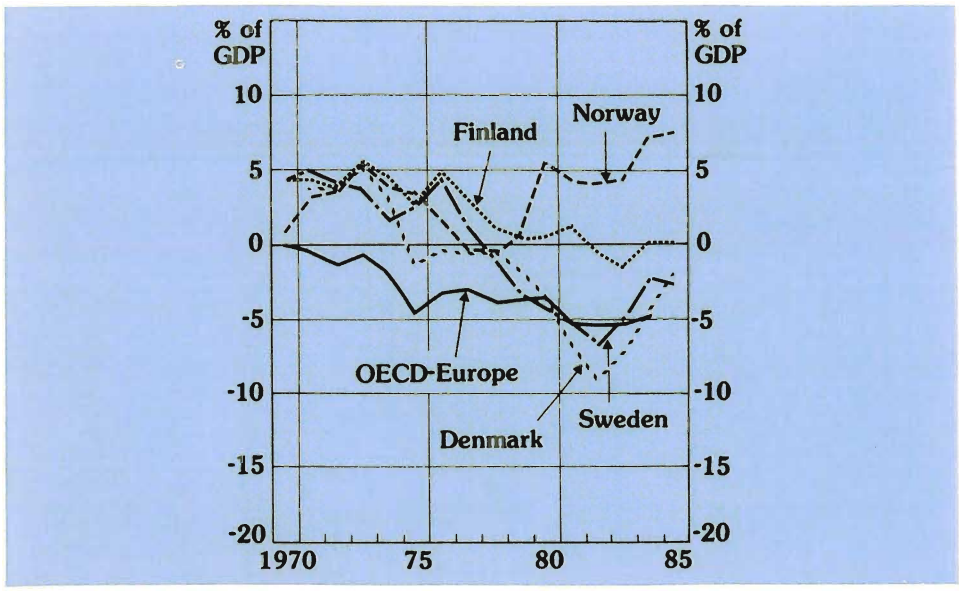
Per cent of GDP



Source: Statistical appendix

S-I:8 Central government budget balance, 1970–85

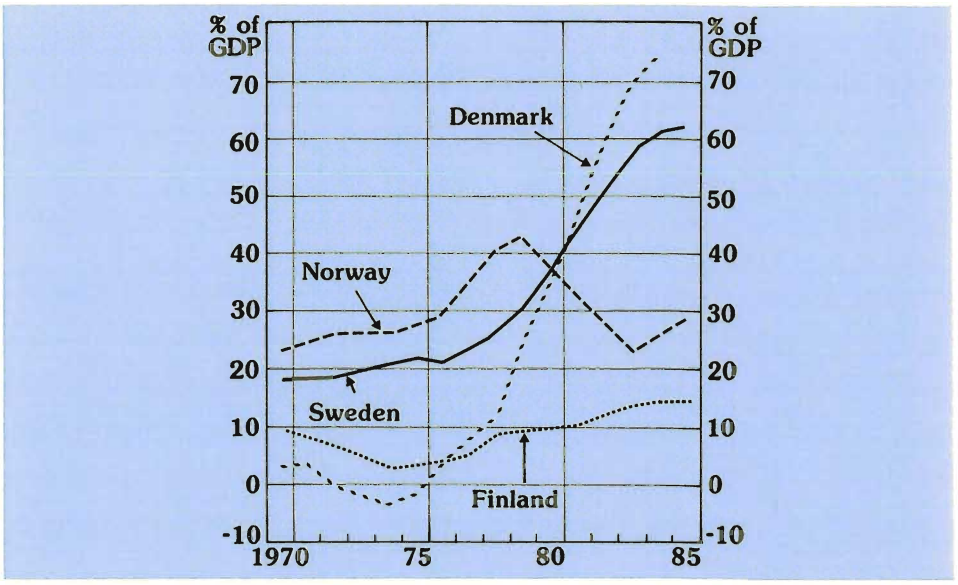
Per cent of GDP



Source: Statistical appendix and OECD

S-I:9 Gross state debt, 1970–85

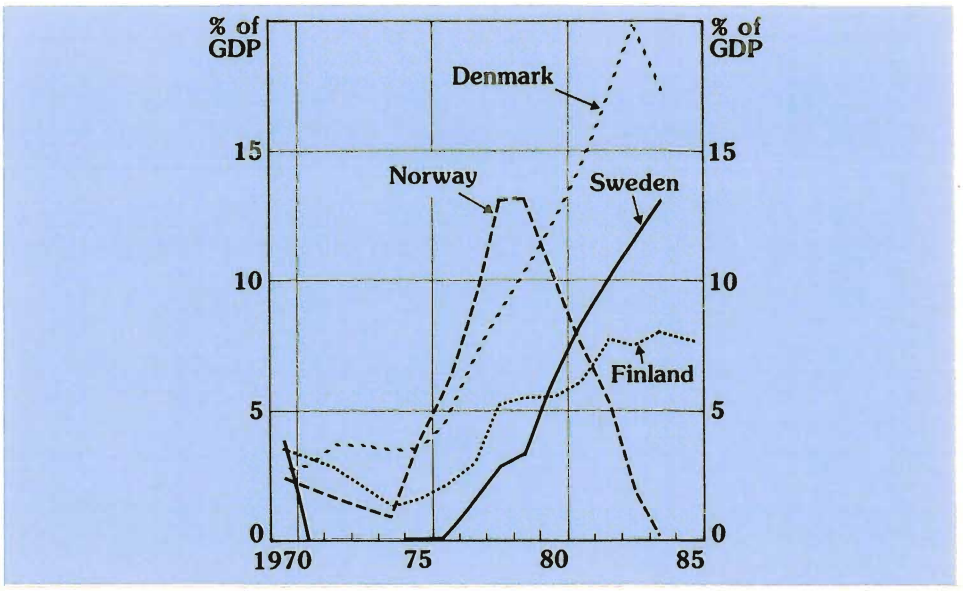
Per cent of GDP



Source: Yearbook of Nordic Statistics

S-I:10 State foreign debt, 1970–85

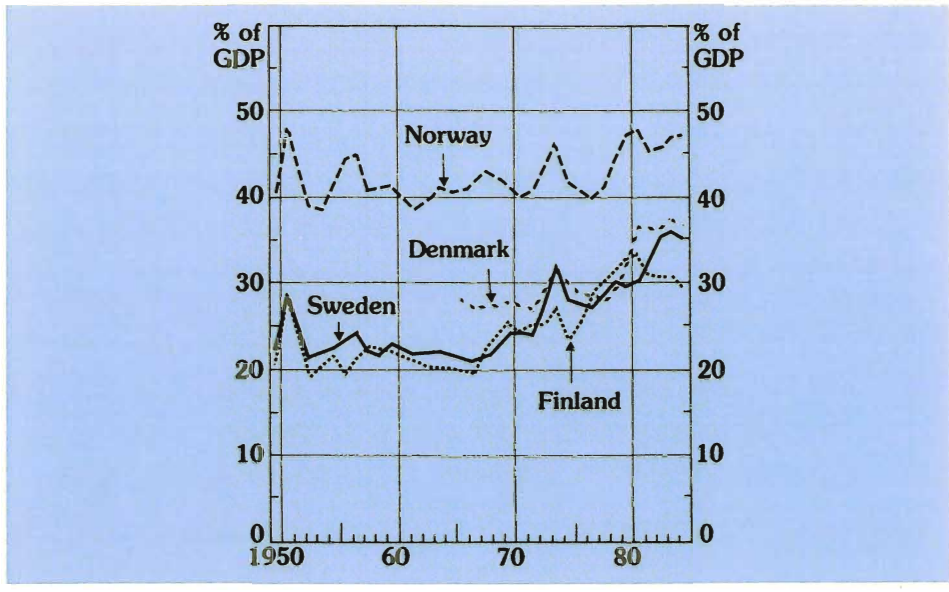
Per cent of GDP



Source: Yearbook of Nordic statistics

S-I:11 Exports, 1950–85

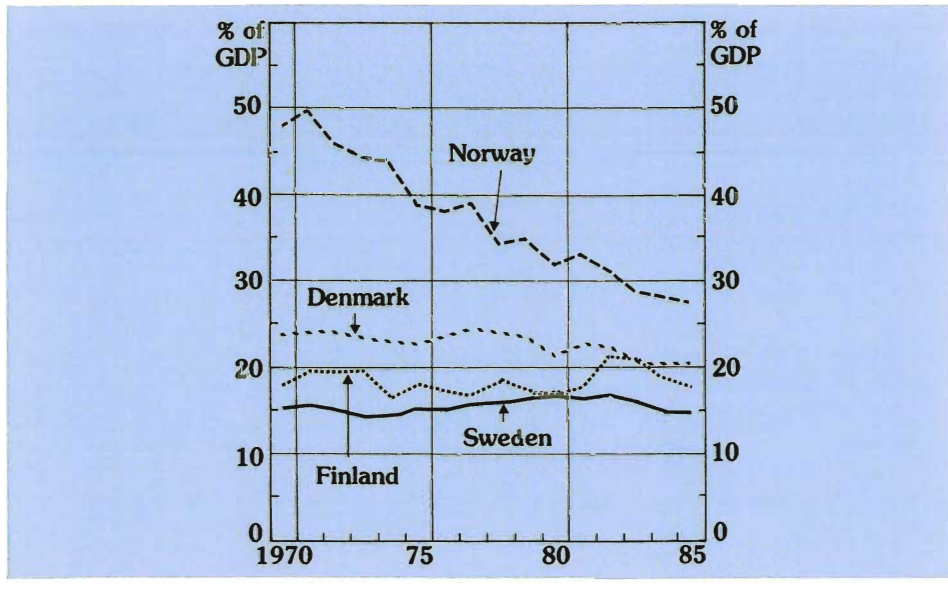
Per cent of GDP



Source: Statistical appendix

S-I:12 Exports of services, 1970–85

Per cent of total exports



Source: Foreign trade statistics

S-I:13 Ten most important export commodity items (SITC Rev. 2), 1983[1])

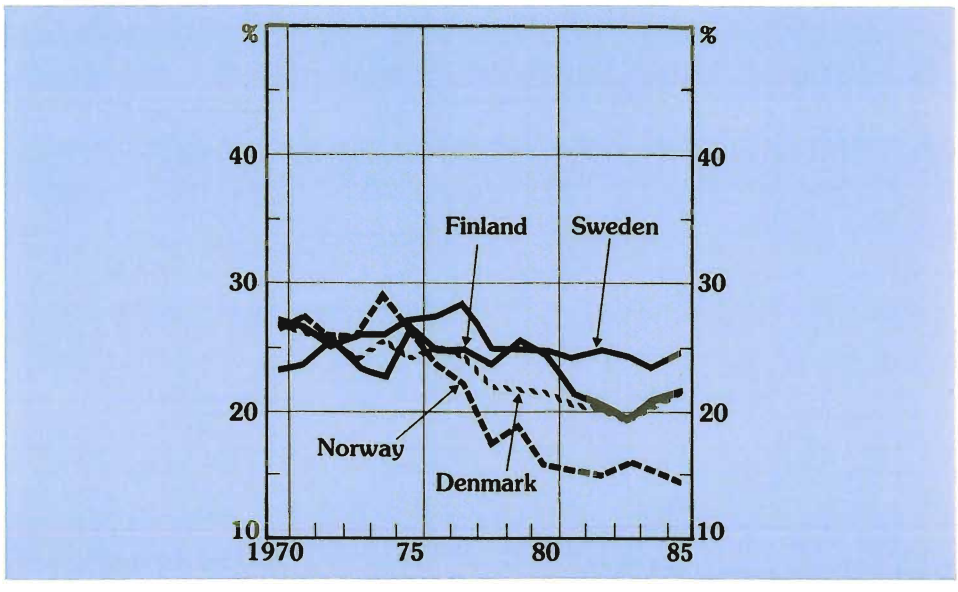
Per cent of total exports

SITC	Denmark	Finland	Norway	Sweden
01	11.5			
02	4.1			
03	5.0		4.1	
24		5.4		3.7
25		4.1		3.7
33	4.6	4.1	35.8	4.5
34			17.2	
58			1.6	
64		25.1	2.9	9.7
67		4.7	3.1	6.6
68		3.0	7.5	
72	3.8	4.7	1.3	4.7
74	6.8	4.4	1.4	6.6
76				4.4
77	3.2			3.6
78				13.6
79	3.2	6.6	7.1	
82	3.7			
84		3.8		
85	5.0			
	50.9	55.9	82.0	61.3

[1]) Two-digit SITC-level
Source: Foreign trade statistics

S-I:14 Nordic share in total merchandise exports from the Nordic countries, 1970–1985

Per cent



S-I:15 Ten largest export companies, 1985

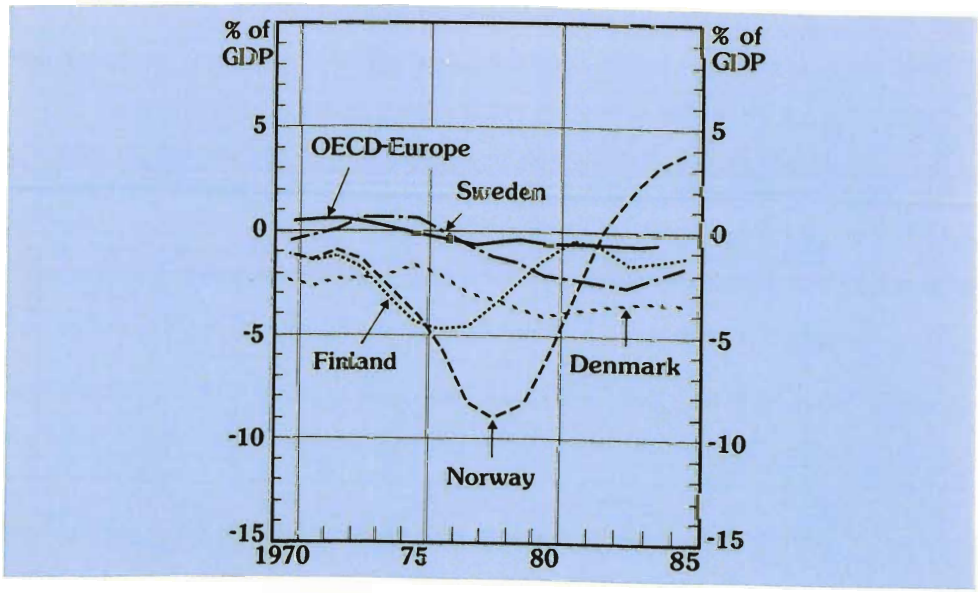
Per cent of total exports

Denmark[1])	Finland	Norway[2])	Sweden
Superfos	Rauma-Repola	Norsk Hydro	Volvo
Danfoss	Enso-Gutzeit	Statoil	Saab-Scania
Novo	Neste	Elf Aquitaine	Ericsson
ISS	Nokia	Elkem	Asea
F.L. Smidth	Outokumpu	Wilh. Wilhelmnen	Electrolux
Danske Pels Aukt	Yhtyneet Paperitehtaat	Årdal og Sundal Verk	Stora
Plumrose	Wärtsilä	Norwegian Caribian Liner	Sandvik
Sophus Berendsen	Kymi-Strömberg	Norsk Agip	SCA
Skandinavisk Holding	Metsäliitto	Total Marine	Boliden
Lego	Valmet	Kværner Industrier	Nobelindustrier
13.7 %	36.2 %	44.5 %	32.8 %

[1]) Danish data is not easy to come by. Companies which should have been included in the top ten list, are not listed. Hence, the share of ten largest exporters in Danish exports is higher than actually recorded here.
[2]) 1984
Source: ETLA, IFF, IUI and IØI

S-I:16 Current balance, 1970–85

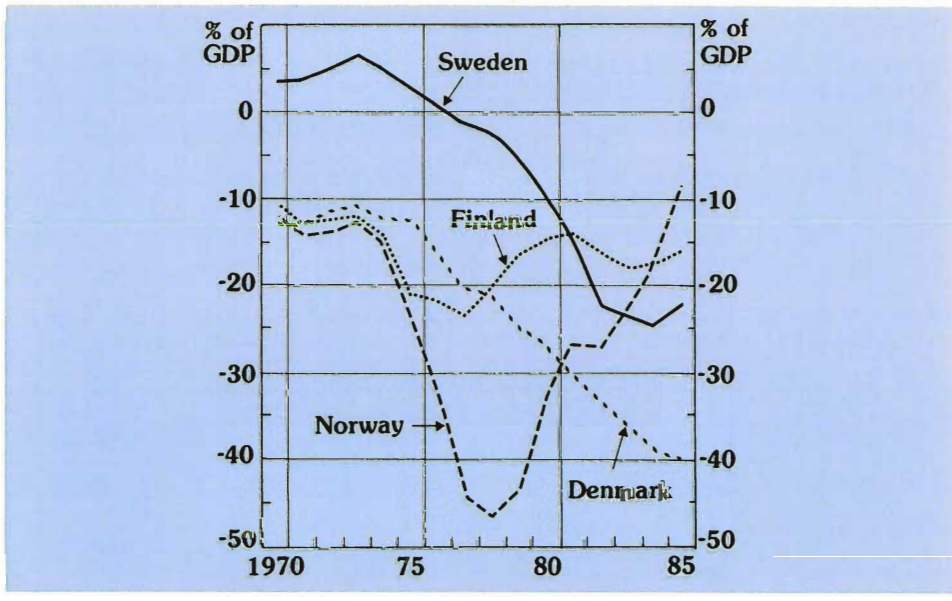
Five-year moving average. Per cent of GDP



Source: Statistical appendix and OECD

S-I:17 Net foreign assets, 1970–85

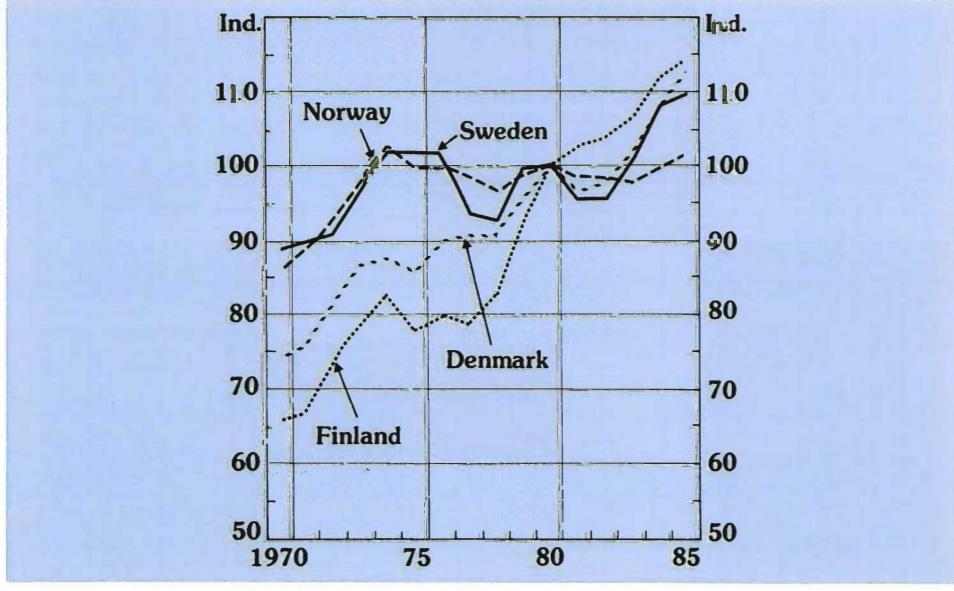
Per cent of GDP



Source: Statistical appendix

S-I:18 Manufacturing output volumes, 1970–85

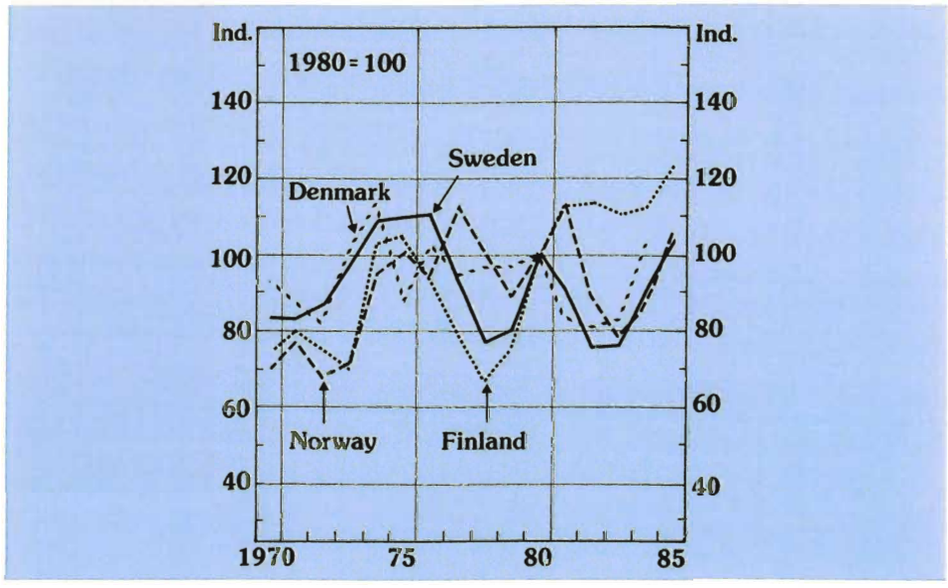
1980=100



Source: Statistical appendix

S-I:19 Volume of fixed investments in manufacturing, 1970–85

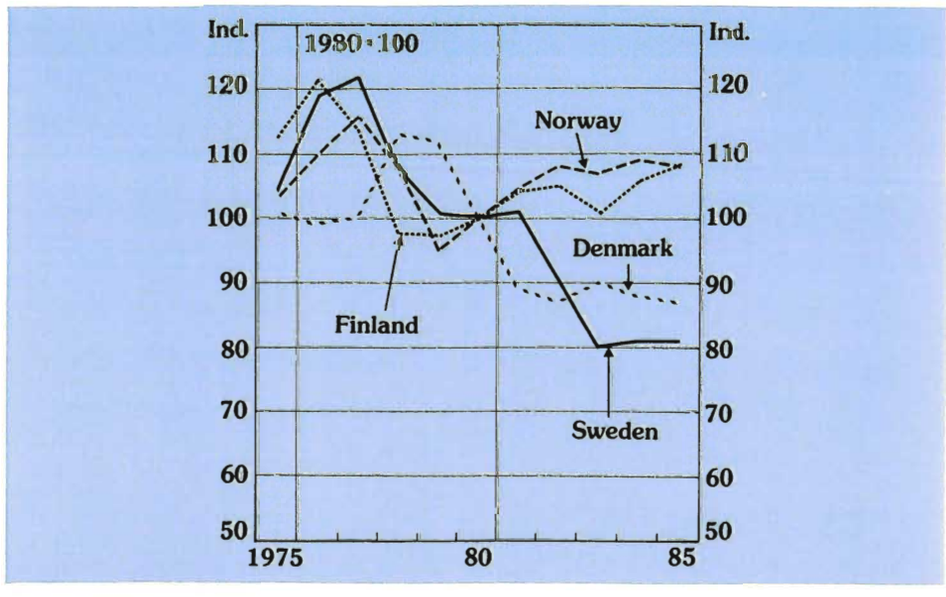
1980=100



Source: Statistical appendix

S-I:20 Relative unit labour costs in manufacturing, 1970–85

1980=100



Source: OECD, ETLA

CHAPTER II

International Outlook: Recovery in the Medium Term[1])

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[1]) This chapter was written by Timo Hämäläinen (Bank of Finland) during his stay as a visiting research fellow at ETLA.

International Outlook: World Economic Recovery in the Medium Term

1. Introduction

During the past ten years slow demand growth and large imbalances have characterized the international economy. The period of slackening growth began in 1973, when the world experienced the first oil price shock. The origin of slow growth can, however, be found already before that event. The growth of the money supply contributed to inflation and rising labour costs in the late 1960s in the US and globally and to the breakdown of the fixed exchange rate system in the beginning of the 1970s.

After the first oil shock, governments tried to avoid a recession by expanding the public sector. National income was decreasing due to the oil price rise but the share of labour income was kept up with inflationary wage demands. The profitability of the corporate sector deteriorated and the propensity to invest decreased. Insufficient labour demand and a permanent threat of inflation followed. Europe and Japan also suffered from the depreciating dollar in the late 1970s.

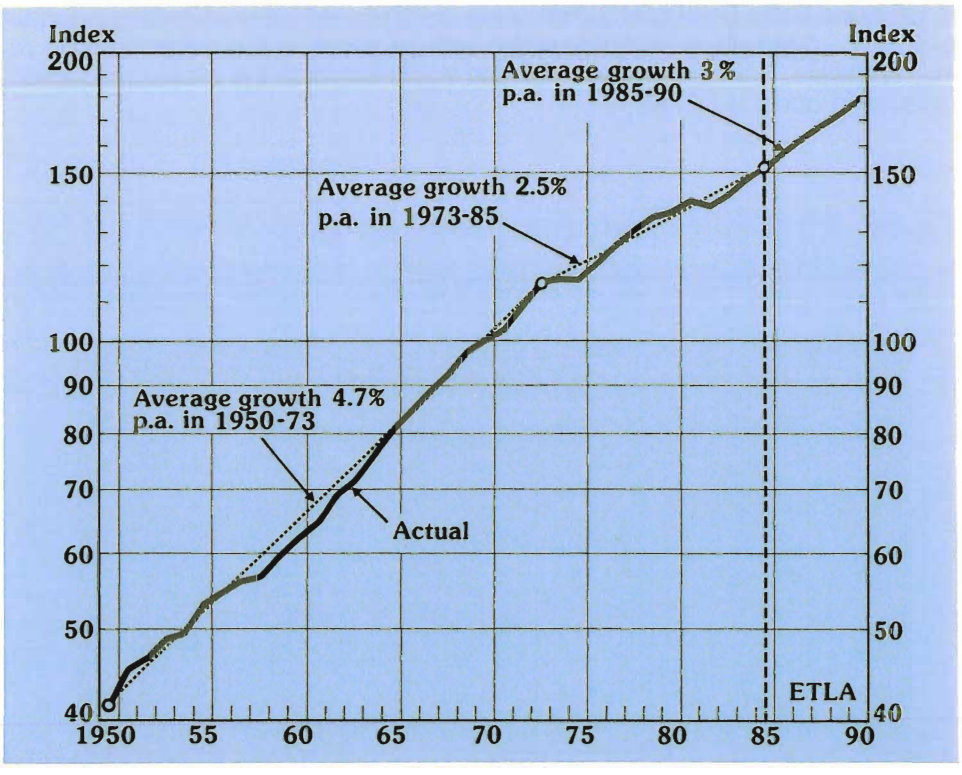
The second oil shock was followed by the deepest and most prolonged recession since the Great Depression in 1930s. There was hardly any growth in world trade and unemployment rose to levels unseen since the thirties. The recession contributed to the debt problems of the developing and Eastern European countries. Economic policy was tighter than after the first oil crisis. Financial policies were aimed at balancing budget deficits and monetary policies were tightened. High real interest rates were an apparent result of this policy. The supplyside policy in the US enlargened public deficits, which together with the tight monetary policy led to high interest rates and an overshooting dollar. The deficit of the US current account increased, but the expansionary fiscal policy and appreciated dollar stimulated world growth to a peak in 1984. Exports to the US expanded, but the growth of internal demand in Europe and Japan was prevented by restrictive fiscal policies and tight monetary policies designed to avoid the inflationary impacts of the overvalued dollar. High unemployment rates in Europe curbed wage increases, which in turn, together with slightly falling energy and raw material prices, restored profitability in the private sector and subsequently pushed up investment demand.

The slowdown of inflation, the restored profitability and reduced government indebtedness have created the basis for continuing economic growth in Europe. In addition, the collapse of oil prices in early 1986 will increase the real incomes of oil importing countries, and falling inflation rates will give further room for more expansionary economic policies well into the 1990s. However, there are still imbalances to be corrected. The US government and current account deficits have to be reduced, heavy debt service charges for the developing countries have to be alleviated and high unemployment rates must be decreased. The efforts by the biggest market economies to co-ordinate economic policies since the autumn of 1985 have been directed at correcting external imbalances through orderly management of exchange rates instead of the earlier free floating. This policy is planned to prevent a new surge in interest rates and to avoid a new recession in the world economy. The debt problems of the developing countries will eventually

be reduced by higher demand in industrialised countries. Implementation of a package of financial arrangements, comprising certain structural adjustments, would undoubtedly contribute to an earlier solution to this problem. Thus, the growth prospects for the world economy are no longer as gloomy as foreseen some years ago. Economic growth could rise to about the 3 per cent level in the latter half of 1980s, but the growth rates experienced in the 1950s and 1960s are not to be expected.

The following discussion of the medium-term prospects of the international economy deals with four themes: the oil price scenario, real interest rates, the exchange rate of the US dollar and finally growth prospects for world output and trade. The first three issues are considered as basic assumptions for the growth prospects of international markets.

Figure II:1. Volume of GDP in OECD countries 1970=100



2. Basic Assumptions

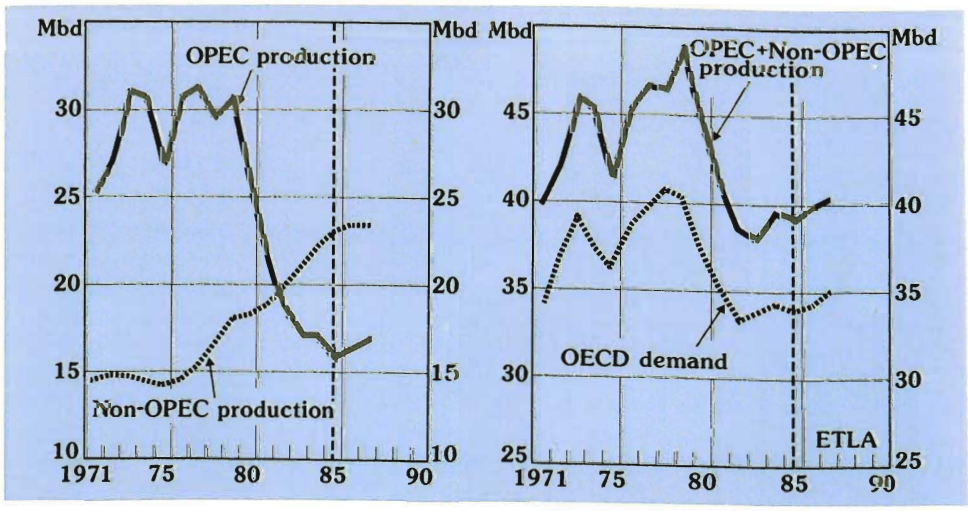
2.1 Oil prices

The price of oil is perhaps the most important single unpredictable factor affecting the world economy. Since 1973 OPEC-countries have been able to raise the price of crude oil from about 3 dollars per barrel to 34 dollars at its highest in 1981. These price rises led to increased oil production outside OPEC and energy conservation in developed countries (see Figure II:3). The capacity utilization rate of OPEC production fell to 60 %, corresponding to an excess capacity of 11 million barrels per day in 1985. Most of the decrease in oil production to was due Saudi-Arabia, and with further production cuts Saudi-Arabia would have almost totally fallen out of oil export business. Consequently, OPEC-countries could no longer fix the price of oil with supply restrictions, and they had to change their policy to maintain their market shares.

This policy change resulted in the collapse of oil prices to well below 15 dollars per barrel in early 1986. The question now is whether the price will fall still further and how long the low price level will prevail. The upper limit for the price is the exploration and developing costs of new oils fields, which in some estimates are set at around 17 dollars per barrel. On the other hand, the shut down limit for the oil fields already in production is estimated to be as low as 5 dollars per barrel.

In the longer run the price of oil will depend on the demand and supply conditions and on the oil extraction policy of Saudi-Arabia. Lower oil prices raise consumption somewhat, but not very much within a few years because major energy conservation and oil substituting measures still influence energy and oil demand. It is estimated that a 3 per cent growth in the world economy would lead to less than a 2 per cent growth in oil consumption with oil prices in the neighbourhood of 16–17 dollars. Such increases in demand would eliminate the excess production capacity in about a decade.

Figure II:2. Supply and demand of crude oil

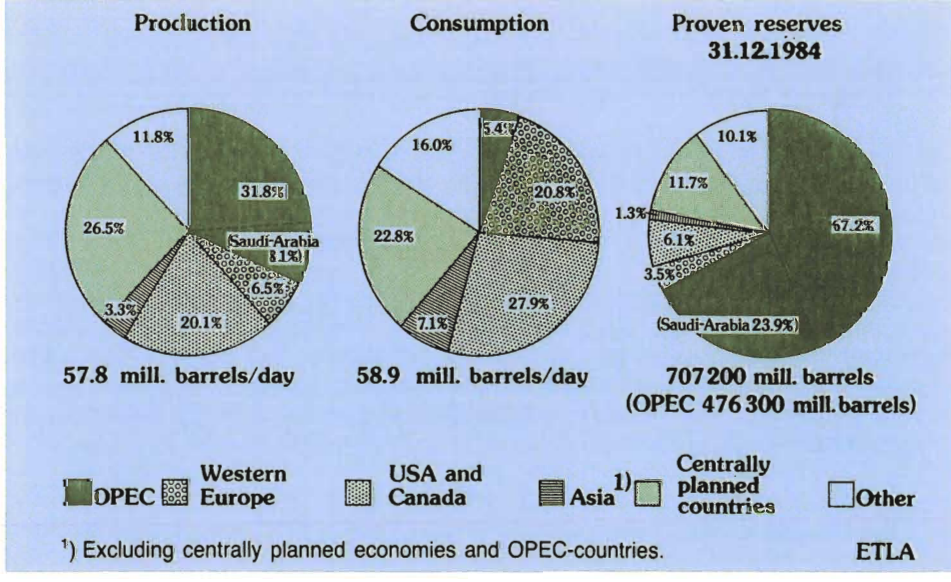


Supply also takes time to respond to price changes. A very low oil price would eliminate some of the non-OPEC production from existing oil fields. Future oil production would be curtailed as well because of low prices and uncertainty about the profitability of oil investments. Thus non-OPEC supply will not increase much giving room for increased capacity utilization in OPEC production. However, technical progress will lower the exploration costs of the non-OPEC producers and diminish the cost advantage of the OPEC production in the longer-term perspective.

The oil market is not expected to reach equilibrium until sometime in the mid 1990s, which could give rise to a possible new oil price shock. Saudi-Arabia has announced, however, that its policy is to aim for steady oil prices in real terms. If Saudi-Arabia uses its huge oil reserves as the price policy instrument of a monopoly producer (see Figure II.3.), this policy is also in line with its longer-term economic interests. Hence, it seems reasonable to assume that oil prices will follow a moderate trend well into the 1990s. No steep rise in prices is expected. As a baseline assumption for the medium-term forecast, crude oil prices are allowed to rise slowly from the November 1986 level of some 15 dollars per barrel to 20 dollars in the beginning of the next decade.

However, the uncertainties of this scenario must be emphasized. Failures in the setting of individual quotas by the OPEC member countries can easily lead to price competition and to a price level well below 10 dollars per barrel. This already happened in the summer of 1986. The possibility of additional price collapses will exist until the supply of and the demand for oil is balanced in the 1990s. There is also an upward risk in the price of oil. The OPEC members may be able to agree on such production limits, which could lead to excess demand for oil and to prices well above 20 dollars per barrel. The uncertainty in the behavior of the producers'

Figure II:3. Oil markets



cartel and in the price of the most important basic commodity is a new phenomenon which will prevail for several years. This uncertainty will undoubtedly have adverse effects on the investment behavior and the growth prospects of the world economy.

2.2. Economic Policies

Inflationary pressures have been dampened in the world economy and there is no sign of a renewed inflationary spiral. In these circumstances a rather accomodating monetary policy stance can be assumed. Thus the targets for monetary growth in major industrial countries could well exceed the growth rates of nominal GNP, giving room for some further reductions in interest rates. The real rates of interest are still high due to the rapidly falling rate of inflation. The recent slow-down of inflation is to a large extent due to the drop in oil prices. Towards the end of the decade reduced budget deficits may permit for a reduction in the nominal rates of interest. Inflation is also expected to return to slightly higher levels after a couple of years. Thus, the real rates of interest are expected to fall.

The intentions of the major OECD governments with respect to fiscal policy are to continue with a rather restrictive policy stance. In Europe and Japan, large budget deficits have already been successfully reduced, while in the US radical reductions of budget deficits are needed but hard to accomplish. It is assumed that a US budgetary balance cannot be achieved by 1991, as suggested by the Gramm-Rudman-Hollings act. However, reductions of the yearly deficits amounting to 0.5–1 % of GDP are to be expected. This might curb inflation expectations, lower real interest rates and have a favourable effect on the current account. In Europe and Japan the governments have been reluctant so far to stimulate demand in their budget policy, even though such measures have been called for by the US and smaller European countries. Deficits in the current accounts do not hinder more expansionary policies, especially in Germany and Japan, and mainly through tax cuts some relief of the tight fiscal policy is to be expected. Globally, however, fiscal policy will restrict economic growth, leaving the expansionary policy measures in the realm of monetary policy and lower real interest rates.

2.3. Exchange Rates

The mix of a tight monetary policy and easy fiscal policy in the US in the first half of 1980s is often regarded as a main reason for the high external value of the dollar. This was accompanied by the huge current account deficit in the US and the corresponding surpluses in Germany and Japan. These imbalances may further contribute to the decline in the value of the dollar. In autumn 1985 five leading countries decided on concerted action in economic policy and the orderly management of exchange rates. This was a clear change in the previous custom of having independent economic policies in different countries. Thus the confidence in the stability of world economic development has returned and a smooth adjustment of the external values of currencies towards "equilibrium" can be expected.

The effective exchange rate of the US dollar has fallen from its high in February 1985 down to the levels prevailing in the beginning of this decade. As it takes time to correct the large imbalance in the US current account, further reductions in the

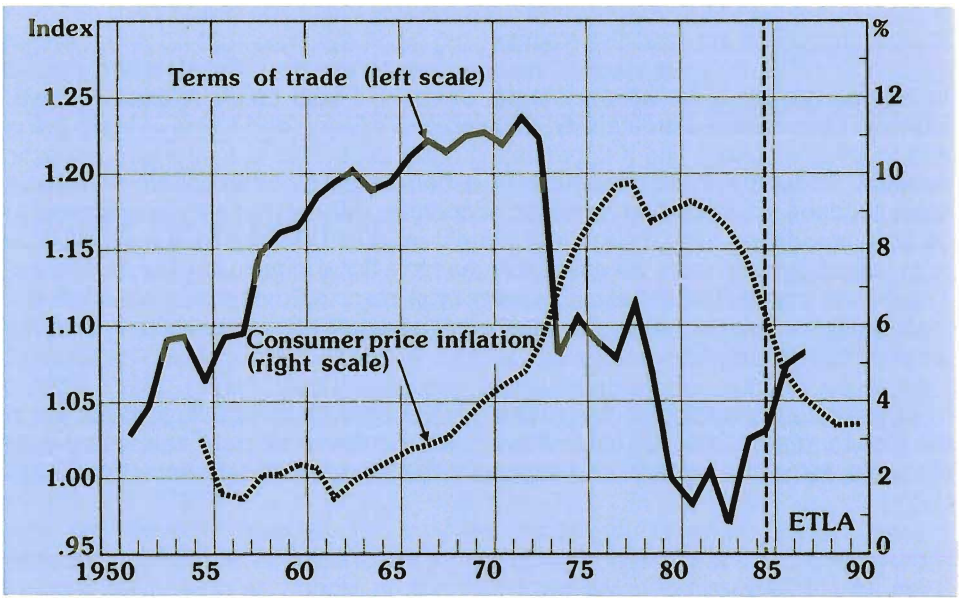
dollar exchange rate even below purchasing power parity can be assumed. This presupposes low interest rates in the US compared to the other countries. The efforts in the economic policy co-ordination contribute to a gradual decline in the value of the dollar, and no sudden loss of confidence is probable. Towards the end of the decade the dollar may strengthen again if the major imbalances are corrected.

3. Growth Prospects in OECD Economies

The growth of world output and demand is expected to accelerate somewhat in the next five years compared to the previous five-year period, but it is still slow compared to the 1960s. The share of services has increased in the output of industrialized countries, which is one explanation for the slower productivity growth. Also the effects of trade liberalization on the growth of productivity have been, to a large extent, exhausted. The demand impulses from the developing countries are smaller than earlier due to greater use of production technologies which save raw materials. Also the possibilities to finance import demand by borrowing are limited. In industrial countries the indebtedness of the public sector prevents major demand stimulus in government financial policies.

Demand management policies have also often been considered inefficient in the current situation, because there are several ridigities in the supply of production factors, especially in the labor markets. The structural policies aiming to remove the rigidities are probably slow to affect output growth. Thus, no major stimulus for economic growth can be expected from economic policies until real interest rates are low enough to stimulate investment activity.

Figure II:4. Terms-of-trade (1950=100) and average annual rate of change in consumer prices in industrial countries for different five-year periods



With respect to raw materials and energy supply, no bottlenecks are in sight in the medium-term perspective. Due to energy saving the supply of oil is estimated to exceed the demand well into the 1990s. The supply of most other raw materials is also more than adequate to satisfy the rather moderate growth of demand, and the prices of raw materials are expected to lag behind those of manufactures. High unemployment rates mean an excess supply of labour, but, at the same time, there is a lack of skilled labour in some industries. With respect to supply these considerations suggest that an estimated potential growth rate of 3 per cent can be achieved.

Both expansive and restrictive factors are affecting the demand in the world economy. Simulations with international econometric models suggest that a 25 per cent reduction in the price of oil would increase output by 1–1.5 per cent within a three year period.[1]) The first half of 1986 does not support these results, which generally assume policy relaxation as a consequence of lower inflation. The weak performance of industrial countries in 1986 may partly reflect the effects of expectations on further price decreases as well as cautious economic policies in the new situation. However, the pure terms of trade effect will benefit the industrial countries by close to one per cent of GDP, which should outweigh the reduced demand from oil exporting countries. In the medium term the growth rate of output is assumed to rise due to lower oil prices but perhaps not quite as much as the model simulations would indicate.

US restrictive fiscal policies are expected to dampen growth. Public expenditure will not increase at all in volume terms and some tax increases are to be expected. The reduction of public deficits will dampen inflationary expectations and lead to lower interest rates, which in turn will stimulate investment demand. Dollar depreciation will shift the real external balance into a surplus and contribute to GDP growth. The terms of trade deterioration due to depreciation is partly eliminated by lower oil prices. The current account balance will, however, remain in deficit in the medium term because of higher interest payments on an increasing foreign debt. Lower oil price and lower real interest rates together with the positive effect of net external accounts are assumed to outweigh the negative fiscal policy contribution, thus the average growth rate of GDP could well reach the 3 per cent level in the US in the next five years.

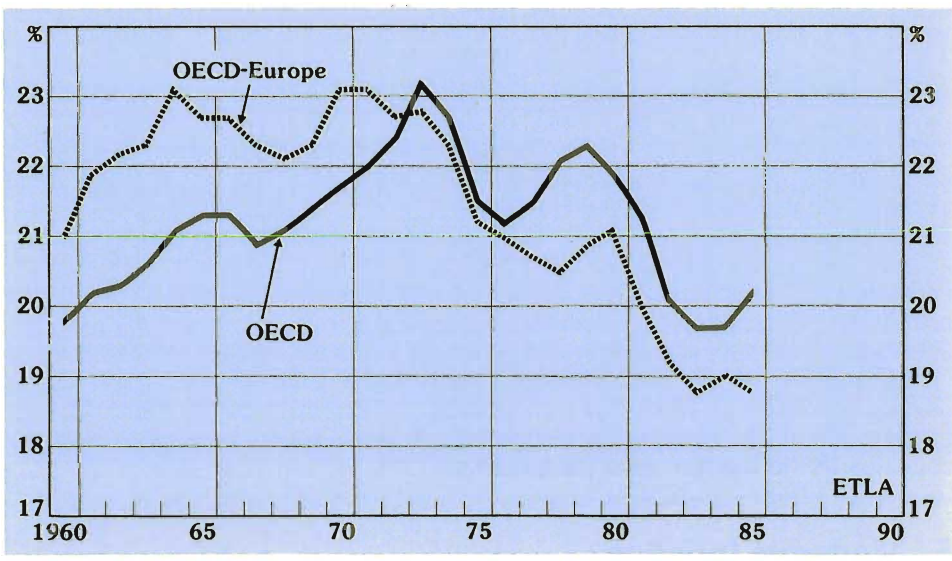
In Europe growth is based on internal demand. Fiscal policy relaxation, lower interest rates, restored profitability, decelerating inflation and terms of trade gains due to lower oil prices and a depreciating dollar contribute to a stronger domestic demand. So far European governments, especially the German government, have been cautious in stimulating domestic economies. Monetary policy is assumed to be accommodating even though real interest rates are still high. It is assumed that high unemployment rates will eventually lead to a fiscal stimulus by tax reductions. The growth rate of GDP still remains somewhat lower in Europe than in the US, the main reasons for this being the continuing cautious economic policies and the weak of export demand.

In Japan the appreciation of the yen has lowered growth prospects of exports and the growth rate of GDP will fall to the US and European levels. The measures to stimulate domestic demand and imports to balance the current account surplus

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[1]) See, e.g., OECD Economic Outlook No 31.

Figure II:5. Investment ratio in OECD countries



have so far been inadequate. Lower oil prices have also contributed to current account surpluses. Because of the numerous non-tariff obstacles to foreign goods, the effects on the world trade of the Japanese measures to increase domestic demand are rather moderate.

In summary, the growth rate of OECD output will accelerate from about 2 % in early 1980s to about 3 per cent, which is still clearly lagging behind the figures of the 1960s and early 1970s. In Europe, which is the main market for the Nordic countries, growth will be somewhat lower than in the total OECD area. In the next few years the growth rate of OECD output may rise above the average of the next five year period due to the favourable terms of trade effect caused by the oil price collapse. Later on the restrictive fiscal policy to correct the US budget deficit may outweigh the stimulative effects of reduced real interest rates.

4. World Trade Prospects

Since the first oil crisis the average rate of growth of world trade has only been half of what it had been earlier in the 1960s. With increased growth of output in industrialized countries the volume of trade is assumed to increase more than in the 1973–1980 period, but the figures experienced in the 1960s cannot be achieved. The growth of world trade is expected to amount to about 5 per cent per annum in the latter half of the 1980s. The growth rate of output is lower than in the 1960s, but the ratio of trade growth with respect to output growth is lower, too.

There are several reasons for a lower trade-output growth ratio. Trade liberalization, which contributed to the growth of trade in the 1950s and 1960s, will no longer have such an impact on the world trade. On the contrary, there are

growing tendencies in the US to return to protectionism due to the large current account deficits. The lower external value of the dollar will help to reduce these tendencies, but they still are a threat to free trade. The import demand of oil exporting countries will contract in the coming few years even if it will expand later on when oil prices are assumed to recover again. The terms of trade of non-oil developing countries will deteriorate as a result of rather weak demand for raw materials. Because of the rather modest possibilities in developing countries to increase their imports, the intra-OECD trade and trade in manufactured goods will increase more than that in raw materials.

In the short run, decreasing real rates of interest, the fall in the external value of the dollar and the reduction in the oil import bill all contribute favourably to the import possibilities of developing countries. In the longer run, the Baker plan for the structural adjustment and longer-term financial arrangements will help somewhat in the solution of the debt problem. Most of the existing loan stock of the developing countries has to be renegotiated or amortized before 1990. Consequently, the debt servicing problems will curb the import prospects of these countries in the medium-term perspective.

5. Moderate Inflation

For almost two decades the inflationary prospects have not been as good as they are now. Strict monetary policies have lowered the underlying world wide inflation rate to about the 3 per cent level, and falling oil prices contribute to even lower

Figure II:6. Average annual rates of GDP growth in OECD countries and average annual rate of world trade growth for different five-year periods

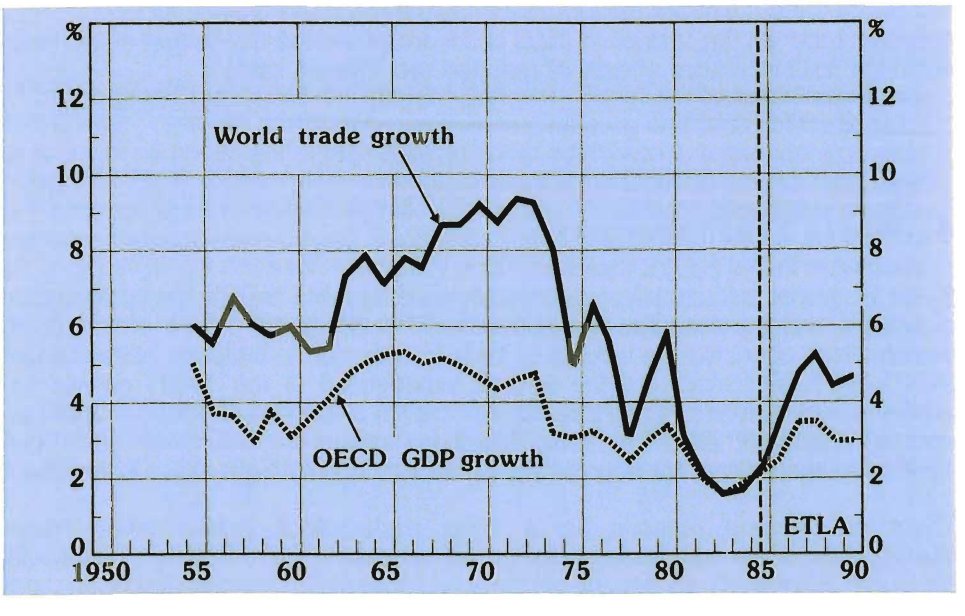


Table II:1 Assumptions of international economic environment

	Average annual change, %			
	1960→73	1974→85	1980→85	1985→90
GDP volume in OECD countries	5.0	2.5	2.1	3
Volume of world trade (industrial products)	9.1	4.1	2.3	5
Unit value of world trade (industrial products, in USD)	3.7	5.2	−3.4	5
Real price of crude oil	0.8	14.3	2.1	−10
Inflation (consumer prices) in OECD countries	3.9	10.4	6.7	3
Non-energy raw material prices	5.5	2.2	−6.5	5
Real interest rates[1])				
– USA	1.9	1.8	5.9	3
– Germany	3.8	3.4	4.0	3

[1]) Yield on long-term government bonds deflated by consumer prices. Average rates for the respective periods.

inflation. The econometric model simulations suggest that a 25 per cent decline in oil prices will reduce the GNP deflator by some 1.5 per cent within two years. It is assumed that the growth of the money supply will be kept at a level allowing about a 3 per cent rate of inflation with real growth of about the same order. Thus, after the deflationary pressures in 1986 due to the oil price collapse inflation is estimated to return to its underlying level. Wage inflation will settle down as a result of still high unemployment. The effect of dollar depreciation on US inflation is reduced by the fall in oil prices as well as by the moderate trend in other raw material prices. No inflationary shocks in raw material or energy supply are foreseen, and, consequently, a modest rate of inflation reminiscent of the 1950s and 1960s can be expected in the medium term.

6. Summary

Prospects for international economic recovery may remain optimistic for the medium term as oil prices are expected to rise moderately. The immediate response to lower oil prices has not, however, so far given support for this optimism; the negative effects on demand have been stronger than the gains from the positive terms of trade developments in oil importing countries. Furthermore, economic policies are slow to react in the face of lower inflation. Nevertheless, there are good reasons to assume that world output will reach its potential growth rate of 3 per cent in the medium-term perspective. For a couple of years the growth rate could even exceed this level. World trade could thus increase annually by some 5 per cent on an average. Inflation is expected to remain moderate as a result of cautious monetary policies and the absence of exogenous price shocks in commodity supply. In spite of the somewhat higher output growth as compared to the past decade, unemployment will stay at a rather high level, especially in Europe. Efforts in economic policy co-ordination are, however, essential in ensuring balanced growth and the prevention of any major economic crises in the world economy.

CHAPTER III

Denmark: Unsustainable Recovery

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1. The Recovery in International and Historical Perspective

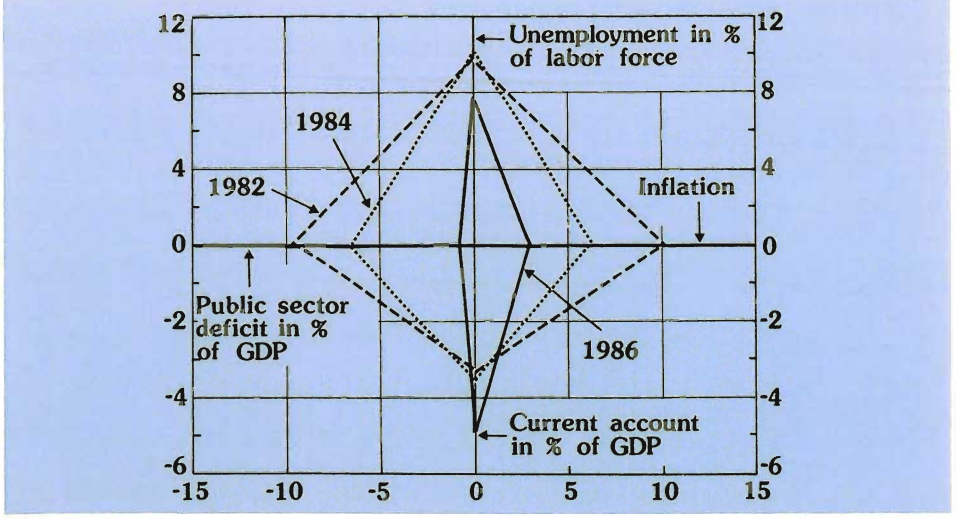
The Danish economic recovery since 1982 has been remarkably strong. In most key areas the Danish performance has been above the average of the OECD countries.

The economic progress in recent years must, however, be contrasted with the very poor performance in the second half of the 1970s and the early 1980s, when key indicators were generally below the OECD average. Broadly speaking, the 1970s were characterized by high unemployment and inflation. In the early 1980s, the public budget deficit came into focus due to continually rising expenditures (in particular rapidly increasing interest payments) and some warnings of an imminent state bankruptcy occurred. Since 1983 attention has shifted to the current-account problem, which has deteriorated gradually with the improved growth performance in recent years.

Despite the strong expansion of demand and production, *inflation*, as measured by the consumer price index, has decelerated from 10.5 % p.a. in 1982 to 4.8 % p.a. in 1985. Favourable international developments have been supported by the domestic incomes policy. In 1985, however, several segments of the private-sector labour market have experienced wage drift in excess of the guidelines of the incomes policy.

Employment has grown rapidly. From the beginning of 1982 to the beginning of 1986, some 238,000 new jobs were created (mainly in the private sector). This was sufficient to more than offset the continued growth of the labour force, and the rate of unemployment has declined from 10.5 % in 1983 to 9.3 % in 1985.

Figure III:1 Disequilibria 1982–1986
Per cent



Source: Statistical appendix and own estimates

Table III:1 Public-sector finances 1980–85
Per cent of GDP

	1980	1981	1982	1983	1984	1985
Public-sector spending	57.0	60.3	61.8	62.0	61.0	59.9
Of which:						
– Inv. & consumption	30.1	30.8	31.0	29.3	27.9	27.3
– Transfers, interest payments, etc.	26.9	29.6	30.8	32.7	33.1	32.6
Change in general public-sector balance[1])	−1.6	−3.6	−2.2	+1.8	+3.0	+1.9
Of which:						
– Cyclically adjusted balance	+0.3	−1.3	−3.1	+1.6	+1.5	+0.5
– Automatic reactions	−1.9	−2.3	+0.9	+0.2	+1.4	+0.4

[1]) + indicates a move towards restriction
Source: OECD and Central Statistical Office of Denmark

Public-sector growth and public-sector debt were major economic problems in the early 1980s, especially up to early 1983, when declining interest rates reduced the risk of an ever growing debt burden. During the same years, it has proven possible to reduce the public-sector growth beyond the cyclically induced slow-down in expenditure, but the main contribution to the improvement in the public-sector financial balance has come from the revenue side, i.e. from the growth in the tax base and increases in tax rates.

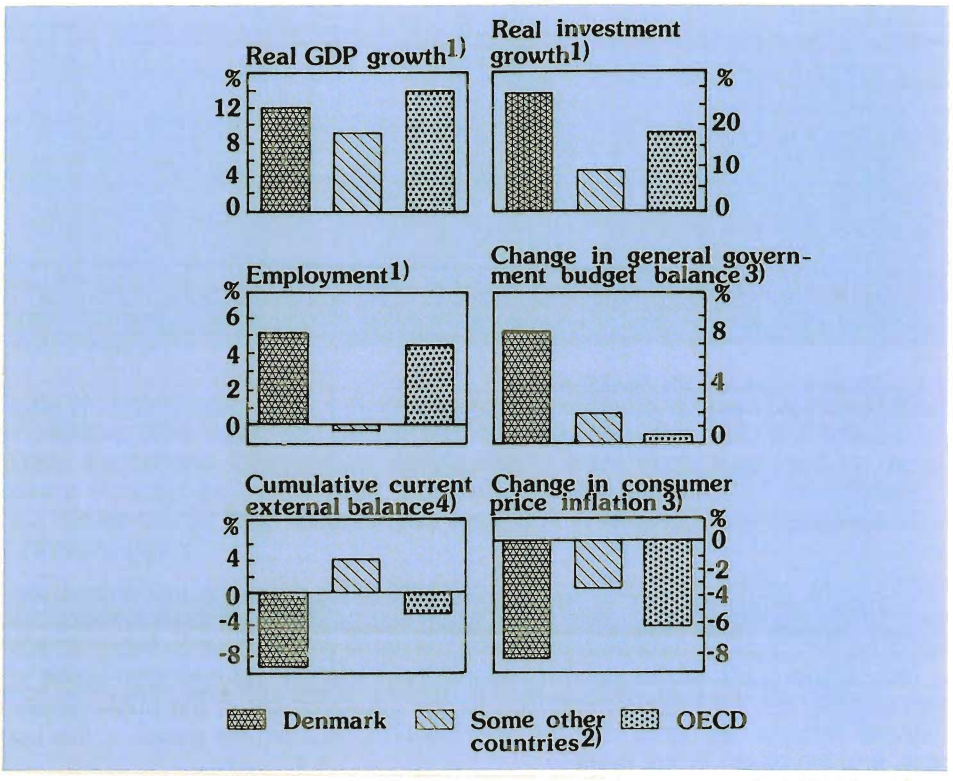
The *balance-of-payments* problem continued to be a serious problem, culminating in 1986 with a record current-account deficit of more than 30 billion DKK (about 5 % of GDP).

Nevertheless, some structural improvement has taken place. The trade balance – especially for commodities – has improved. The single most important factor behind the continued balance-of-payments problem is the interest payments on the large external debt (primarily public debt). These payments amounted to about 26 billion DKK in 1985. Since 1982, the private sector as a whole has run a surplus, while the continued deficit on the current account can be attributed solely to public obligations.

For the immediate future, the lower oil prices are likely to provide a tangible reduction in the value of imports. Like-wise, the declining exchange rate of the dollar will ease the burden of interest payments on the 250 billion DKK net foreign debt. All together, the effects of the lower oil price and the lower dollar may improve the current account in 1986 by some 10 billion DKK which makes the impending record deficit all the more serious.

Compared with the projections presented in Economic Growth in a Nordic Perspective (1984), the actual outcome over the years 1982–86 has been much better than expected. The one serious exception is the deterioration of the balance-of-payments.

Figure III:2 The recovery in international perspective
Per cent



1) % growth, 1983 to 1986
2) Weighted average of Sweden, Norway, Finland, Austria, Belgium, the Netherlands and Germany
3) Change in percentage points, 1982 to 1986
4) Cumulative deficit in % of GDP, 1983 to 1986
Source: OECD Country Survey, February 1986

Although domestic demand growth provided the basis of the recovery, international factors such as the strong dollar, declining inflation and interest rates have contributed greatly to the unexpectedly strong growth in 1983–86.

Concerning domestic factors, the biggest surprise has been the rapid reduction of public sector growth and debt problems. Other surprises have been the buoyancy of private consumption and investments, resulting in equally surprising employment growth. These positive factors have, however, been accompanied by unpleasant surprises: the Government's incomes policy has been only partly succesful and the deterioration of the balance-of-payments has occurred quite contrary to the anticipated gradual improvement. The negative development in the external account has been fuelled by a gradual appreciation of the Danish krone, caused by the stable exchange-rate policy. Private consumption caused imports to surge in 1985–86, particularly imports of durable consumer goods. At the same time the increase in domestic activity was much stronger than expected, as both investments and consumption boomed. This contributed to diverting potential exports to domestic use, thus further deteriorating the trade balance. The one

bright achievement has been the creation of jobs in the private sector which outpaced expected rates considerably.

Overall assessment of the recovery: hollow growth?

The international recovery provided a very favourable background for the improvement in the Danish economy, but the upswing in Denmark has been relatively less dependent on external demand factors than in other European countries. Domestic demand increased dramatically after the deep recession in the second half of the 1970s and early 1980s. The important demand factors have been private consumption and private investments, whereas the public sector has been largely demand-neutral. Over the medium term, however, a recovery based primarily on domestic demand factors cannot be sustained. Exports must become the engine of growth, but there is very little indication that it will.

The economic recovery, however, has been more than just a cyclical upswing. Structural changes have, in fact, taken place as a result of both policy initiatives and autonomous structural developments. Most importantly, the public-sector growth has been halted, and the private sector capable of producing commodities for export (and to a lesser extent services) has increased its share of the economy.

Despite the positive elements in the economic situation of Denmark, the remaining structural problems appear serious and may turn out to justify a characterization of the Danish economic recovery in 1982–86 as "unsustainable". There are three broad areas of concern:

- The recovery was to a large extent based on favourable external developments – windfall gains. Whereas Denmark has not benefitted much from increased demand in foreign markets, international inflation and interest rates have been declining. To the extent that exports have increased, a significant role has been played by the surge in U.S. imports following the rise of the dollar. Just as the 1986 drop in oil prices, these factors do not constitute fundamental improvements in the structure of the Danish economy and they are easily reversed.

- The unfortunate "structural" relationship between high growth and a deficit on the current account appears to be quite persistent. Basically, this poses the policy problem of striking the balance between relatively high growth with accompanying large deficits, and low growth with improvements in the external-account deficit.

- Some of the positive structural developments of the early and mid-1980s may prove difficult to continue for the rest of the decade. It may be difficult to eliminate the public sector deficit completely, and it will be increasingly difficult to reduce public expenditures further. Likewise, the incomes policy is likely to be further undermined in the 1987 wage settlements, and solutions to mismatch problems in the labour market are going to require progressively stronger measures that often run counter to the incomes policy. Thus, the progress noted in the first half of the 1980s is unlikely to continue, and the remaining structural problems are likely to affect growth negatively.

In the following subsections (numbered 2–6) the prospects for sustained economic growth and continued improvement in the balance problems are dealt with:

- *Economic policy issues*. Here the main point is that a short-term stabilization policy has become increasingly difficult to conduct as well as increasingly insufficient. Instead, structural barriers to growth should be addressed in order to improve the growth outlook over the medium term, and policy-makers appear to be aware of this challenge.

- *Export performance and competitiveness*. The main conclusion is that the current-account problem is unlikely to be solved by exclusive reliance on attempts to improve price competitiveness. Structural problems of country and commodity composition and the factor content of foreign trade must also be addressed.

- *Labour-market developments*. Despite the recent surge in employment, future advances are likely to be much smaller. Unemployment, which ceased to be a political issue in 1984–86, is likely to attract new attention, since growth pro spects, coupled with investment and productivity developments, may cause unemployment rates to remain at their present levels or increase during the rest of the 1980s. Growing awareness of structural changes is already evident in labour-market organizations and policies.

- *Investment patterns*. When analysing future growth prospects of the Danish economy, the recent surge in investments and the accompanying remarkably slow productivity growth attract special interest. A coincidence of positive factors account for the investment boom, but most of these factors are unlikely to persist during the rest of the 1980s. In addition to lower investment growth prospects, the structure of recent investments does not allow for much optimism concerning the possibilities for export growth and technological rejuvenation of the production base.

- Based on the previous analysis and the rather modest expectations for international and domestic key variables, a *forecast for the period 1986–90* is provided. The basic assumption of the forecast is that a deceleration of growth is a prerequisite for any decisive improvement of the balance-of-payments. Given that an improvement of the external account is politically paramount, it remains an open question whether the moderation will result from cyclical slowdown or policy intervention. Most likely, both factors will be at work. However, a period of slower growth may seriously hamper medium- and long-term growth prospects, if not administered very ingeniously.

2. Economic Policies

2.1 Macro-economic policies

During the recession of the 1970s, and especially in the early 1980s, a broad political understanding gradually emerged that exports should be the engine of growth. Consequently, temporary employment schemes, reduction of the working hours, industrial subsidies, etc., have not been prominent in countering the economic difficulties. Instead, more general policies, aimed at improving Denmark's international competitiveness by reducing production costs, have been conducted – especially during the latter part of the period.

In the years since 1982, when the Conservative-Liberal coalition Government took office, the official policy has been structured around the so-called "*policy of reconstruction*", which (apart from providing a verbal distance to the policies of the previous Social Democratic Government) aims at eliminating:

- the current account deficit by 1988 and from then on keeping a surplus on the current account, amounting to 1 % of GDP;

- the public-sector deficit by the end of the decade.

The aim of surplus on the current account remains in focus, but during 1986 the plans for balance by 1988 have been abandoned. On the other hand, balance on the public-sector finances was virtually achieved in 1986, although with a slight margin that may easily disappear again.

In addition to these aims, inflation was to be gradually lowered (that part of the overall strategy was achieved unexpectedly quickly) and unemployment is expected to be gradually eliminated over the next 15 years. Official estimates expected these objectives to be met by using the following main instruments:

- An *incomes policy* which, by means of wage guidelines and legislation, could keep nominal wage increases 1–2 percentage points below the increase of Denmark's main trading partners. The incomes policy has, broadly speaking, the dual purpose of keeping private consumption under control and domestic production costs low.

- *Fiscal restraint* with very low or zero growth in public-sector spending rather than increased revenues. At the same time, a comprehensive programme of modernization of the public sector has been announced and partly implemented.

- Gradual elimination of the *interest-rate differential* vis-a-vis international markets by adherence to a policy of stable exchange rates and liberalized capital flows.

- Increased private-sector *savings*.

The medium-term political objectives of the Government have been announced with emphasis on continuity and consistency of the policy strategy that would hopefully guarantee confidence in the Government and particularly in the Danish currency in order to avoid the traditional policy of recurrent devaluations. To

underline these intensions, a number of capital-market and currency liberalizations have taken place, and the monetary-policy instruments have developed into more market oriented systems (see Special Study 2 on the development of financial markets). This policy appeared to be relatively successful during the years of the domestic and international recovery. In more recent years, however, the validity of this strategy has increasingly come into question. These doubts have been fueled by more frequent "stop-go" policy interventions during 1985–86:

- In *March 1985*, the breakdown in wage negotiations caused the Government to intervene. The existing settlements were extended for another two-year period (the next round of wage settlements is due in early 1987), and the incomes policy already enacted by the Government was tightened: Wage increases in the private sector should not surpass 2 % in 1985 and 1.5 % in 1986.

- In *December 1985*, another policy package was launched, aimed at two major economic problems: the deteriorating trade balance and the over-heating of the construction sector. The measures aimed at reducing activity in the construction sector served both the purpose of reducing public expenditure and of strengthening the incomes policy.

- In *March 1986*, another attempt was made to stop the rapidly widening trade deficit. After the record deficit on the current account in 1985, the Government raised excise taxes. Following the two-thirds drop in oil prices between November 1985 and March 1986, oil taxes were increased. The level of energy taxation is subject to bi-annual reviews and adjustments.

- In *October 1986*, when the current-account deficit approached 5 % of the GDP for the year as a whole, new initiatives were taken to reduce private consumption and thereby imports, including taxation of interest expenditure on consumer credit, a ban on interest-free hire-purchase of consumer goods, and requirements of a sizeable down-payment in hire-purchase retail trade.

Risk factors in the economic policy

The economic policy suggested by the present Government is surrounded by several risk factors that may jeopardize the main features of the economic strategy:

- The incomes policy has already run into severe difficulties in 1985–86. Bottlenecks in specific sectors, such as construction, caused wages to increase at annual rates of 8–10 % before the December 1985 intervention. Generally, wage increases in 1985 and 1986 have been more than twice the specified maximum. Furthermore, there has been a marked tendency to increase fringe benefits for all types of white- and blue-collar workers, thus circumventing the wage restrictions.

- The liberalizations of the financial markets and currency regulations drastically reduce the possibilities of regulating the availability and the price of credit – and hence of regulating consumption. The severe competition in the financial sector is likely to increase in the years to come, as further liberalizations take place – notably in the banking sector and for mortgage-credit institutions.

– The internationalization of the financial markets may endanger the present stable exchange-rate policy. Should confidence in the Danish currency deteriorate sharply, the liberalized capital markets may severely complicate support actions for the currency. Further discussion of this problem is available in Special Study 2, dealing with the Nordic financial markets.

Private-sector consumption and savings

The current external-account problem is intimately related with the remarkable growth of private consumption in 1984–86. This growth was partly due to a sharp increase in the consumption ratio in the early 1980s. Furthermore, this was accompanied by an increased import content of private consumption in 1984–85.

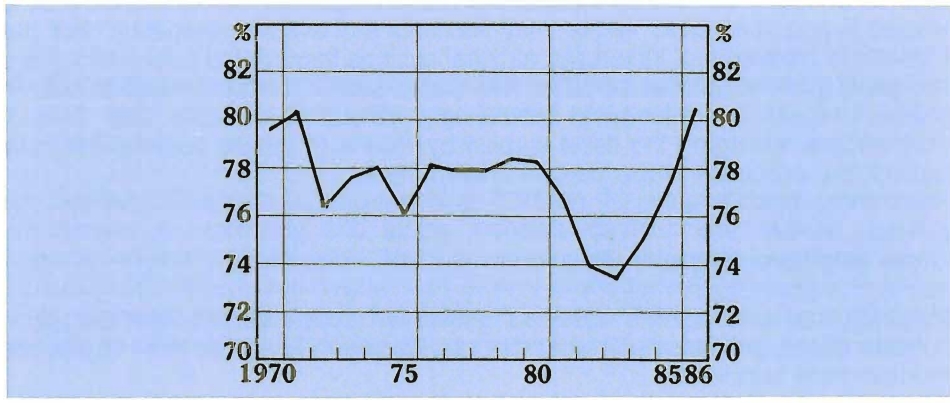
In the 1960s and 1970s, the private-sector consumption ratio remained relatively stable. In 1981–83, however, it fell sharply to an unusually low level. In 1984–86, the consumption ratio again increased sharply, approaching and surpassing historical levels.

The increase in savings propensity observed in the 1981–83 is of considerable interest in view of the long-term necessity (and expressed intention of the Government) of increasing private-sector savings.

Several factors contributed to the observed rise of the savings propensity during 1981–83: First of all, the shift in income composition from wage income to profits is important. The propensity to save out of profits is larger than the propensity to save out of wage income, and the share of non-wage income in total incomes has been rising steeply in the 1980s. A second factor behind the observed change in savings, was the gradual shift upwards in real after-tax interest rates which started

Figure III:3 The consumption ratio 1970–86[1])

Per cent



[1]) Private consumption in % of disposable income
Source: Central Statistical Office of Denmark

in 1981 and continued throughout the first half of the 1980s. Nevertheless, the real after-tax rates stayed negative except for the low marginal tax rates around 50 %. Combined with a third factor, i.e. the modest prospects for gains on real investments during the recession in the early 1980s, these factors all provided incentive for "passive" (low-risk) savings and investments in real estate, government bonds, etc.

The rise of the consumption ratio since 1983 reflects partly a reversal of the factors just listed, partly temporary factors. Growth of real disposable incomes (due to lower inflation) and pent-up demand for consumer durables, coupled with very easy access to credit, has contributed greatly to the growth of consumption in 1984–86. Wealth effects in conjunction with declining interest rates have been important, too. The rise in the propensity to consume is not a general phenomenon, however. Particularly self-employed people have experienced significant income growth during 1982–84 (the lags involved in translating the income of the self-employed into consumption are usually long).

The continued drift in the relative shares of the national income in favour of profits has not been reversed, however. Although such a development may generally increase the savings ratio, the continuation of this redistribution may cause serious difficulties in the 1987 collective wage settlements – not least in the public sector, where wage increases in the 1980s have been much slower than in the private sector.

The medium-term policy objective of raising the savings ratio of the private sector is widely accepted. However, the means of bringing about this development are not straightforward. Further gains from continued drift in the incomes distribution may not be possible. Instead, ways of increasing the savings propensity out of wage incomes must be found. Attempts are already being made; tax reform to take effect in 1987 the aims at increasing the savings propensity by reducing and equalizing the marginal tax rate on capital income (interest earnings, dividents etc.), where by the "tax value" of deductions for interest payments is reduced.

Improved conditions for and increased coverage of *pension* schemes are among the likely future instruments aimed at increasing the savings ratio. On this issue, the Government is supported by the trade unions' call for a pension reform. The main question is, however, whether the introduction of a pension system for blue-collar workers will truly raise the savings propensity for the country as a whole. If not, the public sector may have to run a savings surplus, but the immediate prospects of increasing national savings through the public-sector are not good. After a number of years with public-sector savings, marginal cuts in public budgets are becoming increasingly difficult to achieve and defend. Furthermore, enlarging the fiscal surplus by means of raising taxes is basically against the principles of the present Government.

Some long-term prospects

Naturally, the medium-term analysis should be supplemented with long-term considerations, and for some issues this step decisively alters the most immediate medium-term conclusion.

One such item is the *unemployment* problem. Whereas the medium-term unemployment prospects are not overly optimistic, the long-term situation may

improve greatly. The reason can be found in demographics: from an annual net addition to the total labour force of 1–2 % annually during the 1970s, the increases are likely to fall below 0.5 % in the early 1990s. Thus, the cumulative effect on the unemployment problem should be considerable, and it is reasonable to expect the noted development to eliminate the unemployment problem by the first decade of the 21st century.

With a relatively certain improvement in employment expected in the early 1990s, there is perhaps an incentive for any government to divert resources elsewhere – and let demographics solve the unemployment problem.

Another area of concern is the growth of the *public sector*; the recent gains are remarkable, but the long-term challenges are likely to prevent any serious further reduction of the public sector. Estimates made by the Department of the Budget point to a largely unchanged level of tax pressure for the rest of this century and for decades into the 21st century. Part of the continued burden arises from the changing demographic structure, with an increasing importance of elderly in need of services and pensions. A significant role is envisaged for the public sector to even out pension income differentials arising from the fact that today some households have a private pension scheme, whereas others do not.

2.2 Structural policies

For many years disequilibrium problems have dominated economics in Denmark. However, despite both the recurrent equilibrium problems and the lack of tradition in these areas, some structural policies have been conducted.

1) Labour market policies: aimed at improving flexibility, mobility and at controlling wage increases. Specific measures are discussed in detail in section 4 below.

2) Policies aimed at enlarging the tradeable goods sector and at reducing the domestically oriented sectors, such as public services, residential construction, etc.

3) Institutional changes aimed at increasing private savings. The measures have included promoting the development of a legal and physical "infrastructure" that supports savings and investments. The tax reform and the stock-exchange reform provide examples of this.

4) Technological development – especially with respect to enhancing exports – has received increasing attention. Details are available from the following discussion.

In Denmark there is a long-standing tradition for very modest government involvment in promoting and aiding industrial development. Instead, general macroeconomic policies have been considered as the most beneficial way of ensuring permanent improvement of growth and international competitiveness. This approach has generally been strongly supported by the private business sector, as often voiced by the Danish Federation of Industries.

Among the broad range of possible means for the public sector to help the private sector, not many have found use and, by international standards the economic impact of supply-side measures have been modest.

Public procurement has been of some importance, but in comparison with other countries, the use of such instruments has been barred by the EEC agreement on equal access for all member country companies to public tenders.

The creation of a modern and efficient economic and physical *infrastructure* must be included in an evaluation of the overall support to private business. In 1982, the previous government announced a "Public Investment Programme", specifying measures up to 1992 in areas of energy, traffic, communications and housing. Following many years' discussion, the Folketing in 1983 finally adopted a plan for the construction of a combined bridge and tunnel to connect the islands of Zealand and Funen. Highway construction, however, virtually stopped in the mid-1980s, despite protests from less developed regions such as Northern Jutland.

Concerning the use of *traditional industrial policy instruments* (e.g. discretionary subsidies, loans, guarantees, etc.) the Danish authorities have been hesitant. In comparison with other OECD countries, Denmark has employed only a limited measure of government support to industry. Thus in 1984, according to the OECD[1]), the ratio of total business subsidies (excluding agriculture) to GDP was around 1 %, while in the other Scandinavian countries the average was around 3 %. The relatively low level of support reflects the traditional hands-off attitude towards the business sector, but may also be attributed to:

- the virtual absence of ailing smoke stack industries in need of help;
- the indirect support to agriculture through the EEC Common Agricultural Policy (CAP);
- the existence of some industrial policy programmes in the EEC (see below).

Furthermore, industrial policy in Denmark has been concentrated on correcting perceived "market failures" – i.e. a defensive type of industrial support. At the same time, offensive industrial strategies, as suggested, for instance by the OECD "Positive Adjustment Strategy" and practised in several countries, such as Japan and France, have not been prominent in Denmark.

To the extent that industrial policies have been implemented, efforts have been concentrated in three broad areas: Export promotion, technological development and construction. Additional support has been given through labour-market policies (see section 4 below) and subsidization of shipyards.

The majority of traditional industrial policy measures are administered by the Ministry of Industry. As evident from table III:2, this group of support schemes peaked in 1982, which characterizes the defensive nature of most of these measures.

The decline in support expenditure after 1982 does not, however, fully reflect the increase in corporate profits.

Despite the long-standing tradition of non-interference in industrial development, recent years have witnessed a growing interest in measures of offensive industrial policy. The pressure appears to be particularly strong in the area of technological

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[1]) OECD Country Survey, February 1986. See also the special study by Bo Carlsson in "Economic Growth in a Nordic Perspective", 1984

Table III:2 Industrial support 1980–85[1])
Million DKK

	1980	1981	1982	1983	1984	1985
Defensive support:	815	1 645	1 963	1 288	911	893
– ship financing	658	1 457	1 706	1 163	752	717
– regional development	134	1 652	201	105	131	151
– other	23	36	56	20	28	25
Offensive support:	861	1 236	1 398	1 118	1 280	1 240
– technical development	459	438	534	585	592	802
– export promotion	145	186	215	231	240	244
– export finance	266	612	649	307	348	198
Total support	1 676	2 881	3 361	2 406	2 191	2 137
Memorandum item: Profits in manufacturing[2])	4 432	6 118	8 020	12 137	15 489	15 304

[1]) The table is confined to measures administered by the Ministry of Industry. The data are for direct gross expenditures of the Ministry
[2]) "Profits" are net operating surplus in manufacturing. Data from the Central Statistical Office of Denmark
Source: Ministry of Industry

development. During the 1980s, several government initiatives have been implemented in order to enhance the technological development. In 1984, a Technological Development Programme was introduced to help the diffusion of information technology into the business sector. The programme is backed by 1.5 billion DKK over the coming five years.

In view of the continued and mounting balance problems during the mid-1980s, the Government has initiated several projects that point to a much more offensive structural policy. The most remarkable indication is a joint ministerial document[1]) which outlined far-reaching objectives in this area. Although subsequent documents and decisions have been of much more modest character, it is still a remarkable demonstration of new policy approaches on the part of conservative and liberal parties. The industrial policy guidelines of the Government are announced annually by the Ministry of Industry[2]).

In recent years more comprehensive programmes have surfased: the programme on R&D (May 1986) and on industrial policy (October 1986). Examples of the policy measures envisaged (and partly financially backed) are:

– Strengthening of export promotion schemes;
– Improved assistance for technological innovation – particularly for smaller companies;

[1]) Debatoplæg om vækst og omstilling, Joint publication of the Ministries of Finance, Labour, Industry and Education, May 1986
[2]) Ministry of Industry: Industripolitisk redegørelse, various editions, in particular 1985 and 1986

- Elimination of bottlenecks in the labour market;
- Improvements of the general business climate through a stock exchange reform, modernization of monopoly legislation and improved conditions for "entrepreneurs";
- Simplification of rules governing the business sector and strengthening of industrial planning;
- Plans for a biotechnological development programme;
- Improved financing for shipyards.

Danish supply side policies must be viewed also in the context of the *EEC membership*. The Treaty of Rome makes no provisions for a common industrial policy, but in reality many aspects of the EEC membership are likely to have long-term effects on the structure of the Danish economy. For instance, the evolution of an internal market and the regulations pertaining to corporate, product and market (competition) conditions all have long-term consequences. Furthermore, specific EEC-policies exist in the areas of: sectoral (shipyards and steel) and regional development, support measures for small and medium-sized companies, financial support schemes (i.e. loans etc. through the European Investment Bank). Finally, a number of concerted action programmes exist in the area of technological development. The largest single programme is ESPRIT. The first phase of the programme covers 1984–88, and plans call for a total of 10 years. The aim of this program is to advance the development of information technology at stages prior to commercial use. Other programmes exist in the areas of data processing, microelectronics, telecommunications, biotechnology and energy.

3. Export Performance and Competitiveness

During the late 1970s and early 1980s exports were increasingly considered to be the long-term solution to Denmark's serious economic problems – in particular unemployment. With the take-over of the Conservative-Liberal Government in 1982, this policy was reiterated, and export was declared to be the growth engine of the economy.

Foreign trade occupies an important role in the Danish economy, with total exports constituting some 35–38 % of GDP in the early 1980s. However, compared with other small European economies, the Danish economy is characterized by a relatively small sector engaged in producing tradeable goods. Hence, the overall goal of the export promotion policy is to increase the size of this sector, and the measures envisaged were well known: improvement of price competitiveness, elimination of supply-side bottlenecks in domestic factor markets and (to some extent) discretionary export and technology promotion.

Since the late 1970s, the export performance has been good, but insufficient to counterweigh import growth. Evidently, neither domestic policies nor international economic conditions have favoured the adoption and implementation of a successful long-term strategy of export growth. The substantial improvement in export performance that was recorded around 1980 has not been maintained in

the mid-1980s. In 1985–86, the sharp deterioration of the external account has prompted a return to discretionary interventions to curb imports which may endanger export prospects also in the longer run.

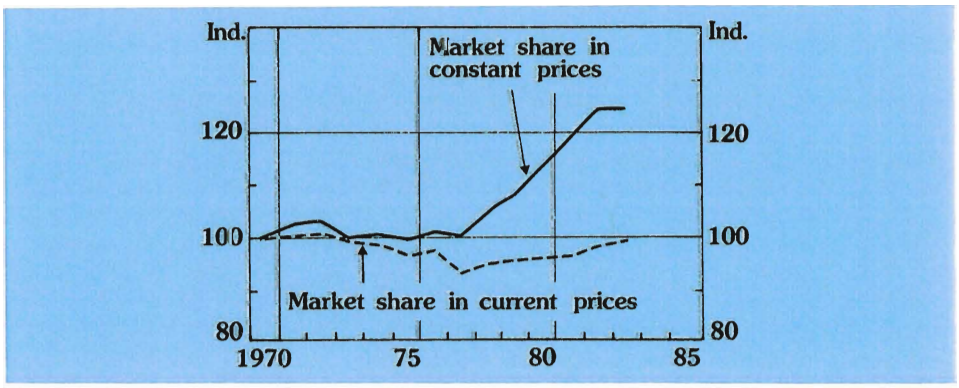
3.1 Export performance

The *structure of Danish exports* is still heavily dominated by agricultural products, accounting for about 1/4 of total merchandise exports. In OECD-Europe, only Greece and Ireland show higher ratios of agricultural export value to total merchandise export value. Up to 1975, manufactured exports (defined as SITC 5–9) constituted a growing share of total export value. Since then, the EEC Common Agricultural Policy (CAP) has provided the basis for an increase of the share of agricultural products in total export earnings. The country composition of Danish exports has been relatively stable, with about 85% of total merchandise exports destined for other industrialized countries.

The *overall growth* of Danish exports has been more favourable in the 1980s than during the previous 15 years. Compared with the export performance of seven other small European OECD economies, the growth performance of total export volumes during 1965–80 was worse in one country only (Sweden). In the years 1980–84, despite less favourable growth than during the former period, the Danish export performance has been remarkably good with a volume increase of more than 20 %, thus leaving Denmark with the third best performance among the same seven economies. In very recent years, however, growth of export has again declined – in manufactured goods as well as in agricultural products. The stagnation (and partial decline) in agricultural exports is particularly important, since this sector has traditionally been the positive and stabilizing factor in times of poor performance of manufactured exports.

Export performance can be measured in alternative ways. One common approach is to look at *export-market shares*. In the following only the performance of manufactured export is considered, since agricultural export is largely dependent on EEC agreements even when export is destined for overseas markets.

Figure II:4 Market shares of manufactured exports
Index 1970=100



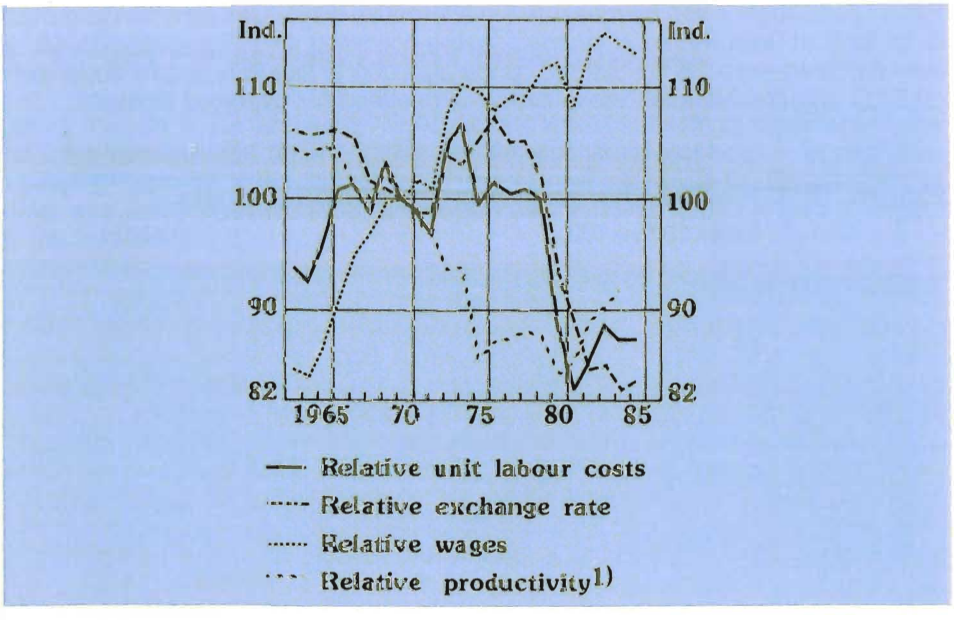
Source: Finance Report 1986, Ministry of Finance

The export performance of manufactured goods in the second half of the 1970s has generally been good. Export market shares, measured in constant prices, have increased remarkably since 1977/78. Thus, between 1977 and 1983, exports increased some 25 % more than overall growth in the Danish export markets. With respect to the long-term export earnings, however, market shares in current prices are more relevant, and here the Danish performance has been unsatisfactory. Current price market shares declined from 1970 to 1977/78, then increased some 5 % up till 1983. But this increase barely returned the market shares to their 1970 levels. The modest growth in current price market shares has been accompanied by a rather steady decline in terms of trade, which explains the continued deterioration of the external account during the early 1980s. In 1984–85, market shares (measured in constant prices) have decreased, but the negative effect on the external account has been moderated by improvements in the terms of trade.

3.2 Price competitiveness

Price competitiveness has occupied a central position in Danish strategies for export promotion over the years, and although the relationship between price competitiveness and export performance is not always clear, there is evidence of positive effects from improved competitiveness.

Figure III:5 Break-down of relative unit labour costs
Index 1970=100



[1]) The inverse of relative productivity
Source: OECD

Usually, the discussion of price competitiveness has centred on the level and development of *relative unit labour cost*. The relevance of this variable in explaining the competitive position of Danish exports and imports depends crucially on several assumptions – the most important being that labour costs are an important cost component, that exports are price elastic and that exporters are willing to lower export prices in return for volume gains.

In the second half of the 1970s, the competitive position improved and this was – to some extent – reflected in the growth of export market shares during 1978–81. Thus, the favourable development of Danish production costs that occured during the 1970s evidently was turned into lower prices on export markets. And this, in turn, increased export volumes and market shares.

The factors behind the improved price competitiveness were relative productivity growth and – especially between 1979 and 1982 – a sharply depreciating effective exchange rate. Relative wages increased in 1981–83, but in 1984–85 a positive effect from the incomes policy became apparent. In 1985–86, relative unit labour costs have deteriorated again as the currency gradually appreciated. Furthermore, wages have increased about twice as fast as provided for in the incomes policy aims, while productivity growth almost ceased.

On the assumption that the present policy of stable exchange rates within the EMS is to be continued, it is reasonable to expect a further increase in the effective exhange rate over the coming years, thus leaving future improvements in price competitiveness to depend crucially on relative wages and relative productivity.

3.3 Structural problems

The determinants of Danish export growth are not simply price competitiveness. Traditionally, a substantial share of Danish export markets has been considered as "market niches", where competition is limited or non-existent (at least temporarily) and where demand is price inelastic.

It is difficult to quantify the share of exports that falls into this price-insensitive category, but it is undoubtedly considerable. Hence, important parts of Danish exports may be rather insensitive to general macro-economic policy initiatives such as interest rate reductions and incomes policy.

One approach to include other factors than price competitiveness in the evaluation of export performance is to introduce the effects of country composition and commodity composition of Danish exports. The traditional way of evaluating performance by market shares is incomplete in that it takes into account only developments of markets and products where Danish exports are already present, whereas markets and commodities, where Danish exports are not present, are completely left out of consideration. In order to answer the question whether Danish exporters are present on the "right" markets with the "right" products, the overall export performance should be contrasted with the potential export possibilities.

A positive effect from the country composition of Danish exports occurs if the export markets of Denmark show above average growth. Similarly, a positive effect from the commodity composition of Danish exports occurs if the types of products exported from Denmark experience growth above average.

There is considerable evidence that Danish export has a number of unfavourable structural characteristics. Generally, the commodity composition of Danish manufactured exports was favourable in the early 1970s, and this accounted for about 5 % higher exports by the mid-1970s than would have been the case if the Danish commodity composition had been similar to the average for all industrial countries. The major reason for this favourable commodity composition was the lack of ailing industries such as steel, coal, etc. Positive effects of the commodity composition could be attributed to the importance of traditional, but medium growth commodities, such as furniture.

Focusing on the commodity composition of Danish exports, one such analysis[1]) demonstrates how Danish exports of manufactures in the period 1970–80 tended to specialize in low-growth imports into 16 selected OECD countries. When measured in current prices, total import into these 16 countries from the entire world in that decade increased annually by 13.7 %. Some commodities, obviously, grew faster, others more slowly. As apparent from the table below, Danish exports tended to concentrate on low-growth commodities of OECD imports.

A more general approach is the so-called *constant-market-share* analysis, where the export growth is decomposed into contributions from a number of explanatory factors: growth in world trade in general, the country composition of Danish exports, the commodity composition and finally a residual factor, which may be interpreted as a general measure of competitiveness.

Several analyses of the four Nordic economies are available[2]). A recent study on the Danish performance is provided by OECD[3]), and this analysis confirms the findings of most other studies.

The main conclusion to the analysis is that Denmark has been exporting to slowly growing markets, both in terms of country destination and in terms of products. In the OECD study, the four explanatory factors were found to have the following

Table III:3 Manufactured exports to 16 OECD-countries 1970–80

Growth intervals of OECD imports. (1) % annually	Shares of total OECD imports (2) %	Shares of total Danish exports (3) %	Danish export specialization (3):(2)
–11,4	15,0	31,0	2,07
11,4–13,0	21,3	22,5	1,06
13,0–14,4	18,0	15,5	0,86
14,4–17,0	28,3	20,4	0,72
17,0–	17,4	10,6	0,61
	100,0	100,0	

Source: Hansen, Jacobsen og Møller, Copenhagen 1983

[1]) Hansen, Jacobsen og Møller: Danmarks internationale konkurrenceevne, målt ved markedsandele. Copenhagen 1983
[2]) Special study by Eva Christina Horwitz in "Economic Growth in a Nordic Perspective", 1984
[3]) OECD Country Survey, February 1986

effect on export growth from the 1970s to the early 1980s (several time periods were analysed, always comparing exports in a selected period in the 1970s with exports in a selected period in the 1980s). The main result is that Denmark has been exporting to slowly growing markets; depending on the time period chosen growth of world trade in general exceeded Danish export growth (both valued in current dollars) by 10–30 %.

Depending on the specific time periods chosen, the effect of selected variables on the absolute changes in export value was found to be:

- The country composition effect fluctuated between –10 and –20 %.
- The product composition effect ranged from –0 to –15 %.
- The unexplained residual factor (to be interpreted as a measure of competitiveness, including price effects) varied from –5 to 10 %, thus providing the least negative effect on the export performance.

Estimation results when comparing the period 1982–84 with 1970–72 are depicted in figure III:6, where the upper diagram shows that only a few branches (pharmaceuticals, scientific instruments, electrical machinery and chemicals) have been gaining market shares (located below the 45°-line) in expanding markets (above the horizontal line indicating the average OECD import growth). Similarly, the lower diagram shows that Danish exports gained market shares in expanding markets only in a few countries, whereas market shares declined in a number of countries with above average growth in imports. It should be noted, however, that absolute proportions are not taken into account in these diagrams; increased market shares in the West German market could in principle provide "sufficient" outlet for Danish exports despite below average OECD growth – due to the size of this market. But the basic message conveyed is that Denmark has been exporting to slowly growing markets – both in terms of products and markets.

3.4 Factor content of foreign trade

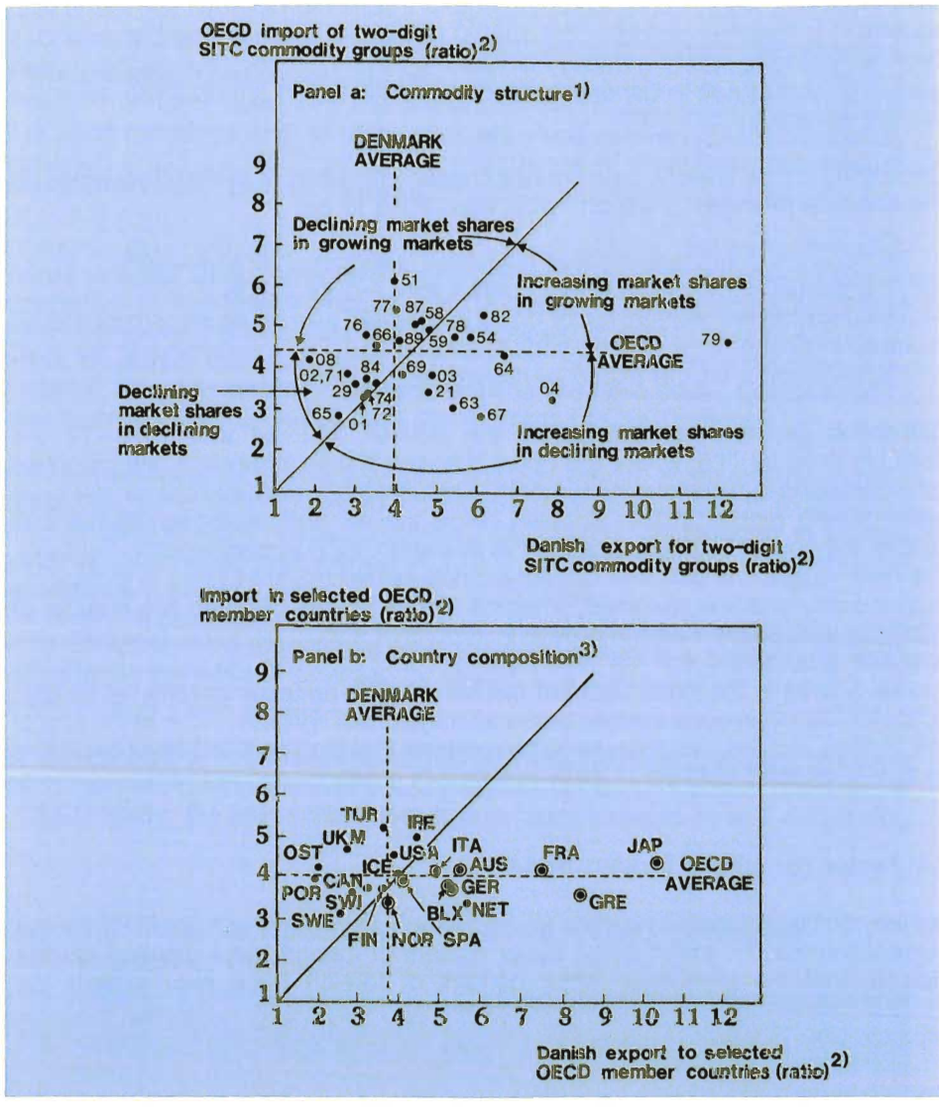
But why do Danish exports appear to specialize in low-growth markets? Part of the explanation may be found in the factor content of foreign trade. Several studies indicate that the production-factor content of foreign trade may explain the historical trade problems and also complicate future attempts to redress the trade imbalances.

One analysis distinguishes four types of production factors in foreign trade of manufactured goods: capital, labour, energy and R&D.[1]) The study of trade balances in each of these factors revealed that in each of the years 1966–80 Denmark was a net exporter of fixed capital. Since 1973, Denmark has also been a net exporter of labour. Of the two remaining factors, Denmark has been a net importer throughout the period. Concerning R&D, net imports have been decreasing, however. In figure III:7 the relative net exports of each of the four factors are calculated by relating net exports (imports) to total domestic use.

The study by the Economic Council further indicates that Denmark is a net importer of skilled labour and a net exporter of unskilled labour. Additionally, on the

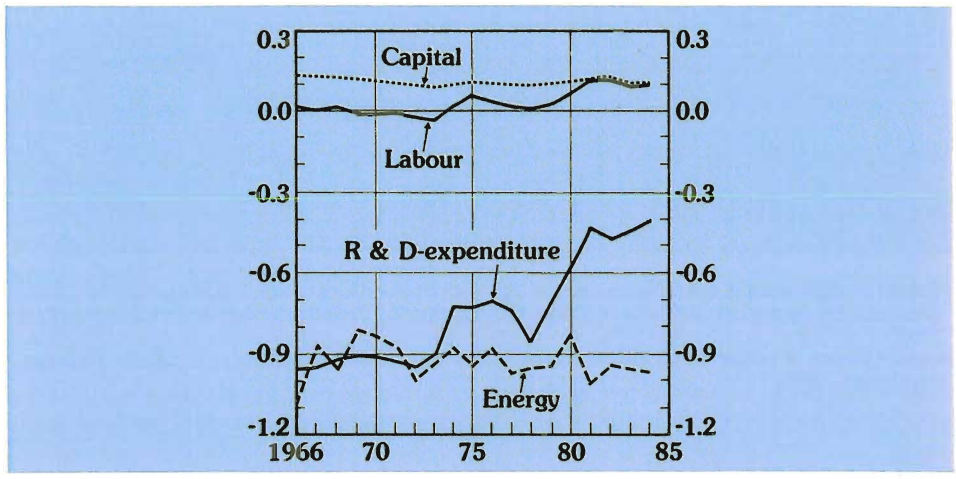
[1]) The Economic Council: The Danish Economy, May 1984.

Figure III:6 Commodity and country composition of exports



[1]) The 29 commodity groups included in this analysis constitute around 85% of Danish export value in 1984. SITC 793 (ships) has been subtracted from SITC 79
[2]) Ratio of the average value of exports (imports) 1982–84 to the average value 1970–72
[3]) The 21 countries included cover over 80 % of Danish export value in 1984. The 29 commodities shown above, not total trade, are used
Note: Growing (declining) markets denote markets which have expanded faster (slower) than the average OECD import market growth
Source: OECD Country Survey, February 1986

Figure III:7 Relative net exports of production factors 1966–84



[1]) Relative net export is net export in % of domestic consumption
Note: The data for 1980–84 are provisional
Source: The Economic Council: The Danish Economy, May 1984

basis of data up till 1980, there is a long-term trend of decline in the relative net import of labour with secondary education of medium duration, whereas there is no clear trend for low-skilled labour exports. A weak trend towards decreased relative net imports in 1966–80 is recorded for medium-skilled labour, but for labour with secondary education of both short and long duration there is no clear trend.

International trade in *manufactured high-technology products* has experienced a boom in the last decade, and this trend will most likely continue. Thus, the high-tech composition of Danish foreign trade will be an important determinant in the future balance-of-payments development.

Denmark, like the majority of small European countries, runs a deficit on the high-tech merchandise trade balance. But the share of high tech products in total commodity exports has, in fact, been increasing over the last 5–10 years, leading to a reduction in the deficit. However modest, this evidence points to improvements in the technological structure of Danish foreign trade.

Analyses based on the OECD classification of high-, medium- and low-technology further underline the structural backwardness of Danish exports. The main results of one such analysis is available in table III:4, where the Danish pattern of technology specialization is contrasted to that of selected OECD countries.

These findings may be interpreted in the context of the traditional product life-cycle model – here adapted to international trade. It appears that Danish exports are weak in newly introduced products, where R&D contents are relatively high. Instead, Danish exports appear to concentrate on products at subsequent phases in the life cycle – entailing a relatively high content of capital and skilled labour. In the last stages of the product life cycle unskilled labour attains increasing importance.

Table III:4 Export specialization 1983. Grades of intensity[1])

	Level of technology		
	High	Medium	Low
USA	1,70	0,85	0,82
Japan	1,36	1,80	0,33
West Germany	1,05	1,35	0,75
Sweden	0,79	1,09	1,02
Denmark	0,58	0,67	1,38
Norway	0,31	0,34	1,71

[1]) Export specialization is calculated as a country's share of OECD exports of a product to the OECD area, divided by the country's share of total OECD exports. The weighted average for a country is 1.00

Source: Dalum & Fagerberg: De nordiske lande og strukturændringer på OECD-markedet. Unpublished, 1985

However, evidence also points to a modest improvement of the technological composition of Danish foreign trade, and it may be difficult to draw a clear-cut conclusion about development trends of high-tech trade, and in particular about the explanatory power of this specific proxy in evaluating future export prospects for Denmark. Process technology, niche production etc., all provide reminders that embodied technology is not necessarily the most relevant measure.

In conclusion, the unstable relationship between price competitiveness and foreign trade, coupled with structural disadvantages of the Danish foreign trade structure, make it a dubious strategy to solve the current-account problem by relying exclusively on price competitiveness. Instead, there is growing awareness that structural problems must be addressed with increased quality and availability of production factors, and with increased emphasis on marketing and financing.

4. Labour-Market Developments

4.1 Recent trends in employment

The economic recovery since 1982 has been accompanied by a marked improvement in the employment situation. Compared with the OECD average, total employment growth has been faster, and the decline in unemployment rates has been faster than the OECD average also – although less dramatically, since additions to the labour force have been considerable in the 1980s, as was the case in the 1970s.

The employment growth in the 1980s has predominantly taken place in the private business sector, whereas the overall employment in the public sector has increased by only 2 % – mainly in municipalities, which have taken over new responsibilities from the central government in the 1980s as a result of the ongoing decentralization of public-sector activities.

Table III:5 Balance of manpower resources 1980–85

1 000 persons

	1980	1981	1982	1983	1984	1985
Labour force	2 625.7	2 652.8	2 683.4	2 706.4	2 756.7	2 809.9
Employed	2 441.9	2 409.8	2 420.6	2 423.3	2 480.4	2 558.1
Unemployed	183.8	242.9	262.8	283.0	276.0	251.8
Unemployment rate (in % of labour force)	7.0	9.2	9.8	10.5	10.2	9.3

Source: Central Statistical Office of Denmark

Table III:6 Employment growth during the recovery[1])

	Growth	
	Persons	%
Agriculture, fishing etc.	3.157	11.2
Industry and crafts	64.197	18.9
Construction	28.090	34.3
Trade (retail and wholesale)	32.762	14.5
Restaurants, hotels	4.182	16.1
Transport	17.456	14.2
Banking, insurance etc.	24.848	18.9
Repair	3.496	16.1
Other private services	−2.918	−7.3
Public services	52.799	8.3
Not specified	10.359	–
Total employment growth	238.423	14.4

[1]) Number of full-time employed, increase from first quarter 1982 to first quarter 1986
Source: Central Statistical Office of Denmark

Employment growth in the private sector has taken place in manufacturing, reversing a strong trend of declining employment in that sector during the late 1970s and the early 1980s. Employment growth has been remarkable in selected services – especially financial services, but the largest growth has been recorded for the construction sector.

Despite the favourable growth in overall employment, the available data do not point toward a decisive improvement in medium-term employment trends.

First of all, the recorded job creation has – to a large extent – occurred in domestically oriented sectors that will contribute only little to the trade balance. Furthermore, the employment growth may easily be reversed, since the jobs are concentrated in cyclically sensitive sectors, such as construction and trade.

Second, much of the employment growth recorded in recent years has been paralleled by slow growth (and in some sectors by a decline) in productivity. This

development is expected to be reversed when overall demand becomes more moderate. Slower employment growth will be one of the adjustments needed to bring productivity growth better into line with long-term trends.

Third, problems of mismatches in the labour market exist:

- Technological development and changing demand patterns, already cause serious mismatches of skills now. The educational system (including vocational training and supplementary labour-market training) has proven to be too slow in adjusting to new demands. In the areas of computing and engineering, for instance, bottlenecks have caused wage drift, and thus created serious difficulties for the public sector to hold on to certain types of labour with excess demand (e.g. specialists in the areas of computers, taxation, etc.)

- Other mismatches arise from the changes in the regional dynamics of growth in Denmark. In the 1980s, the trend of increased concentration has been reversed. Presently, the Western and Southern regions of Jutland are exhibiting higher rates of job creation in manufacturing than the traditional industrial areas around Copenhagen and other large towns.

New labour-market problems are likely to emerge in the longer time perspective. Most importantly, the unemployment problem of middle-aged and elderly people is likely to increase. These age groups have a relatively poor educational background, and they may find it increasingly difficult to compete with younger and well educated labour.

The challenges posed by future slower employment growth and existing and potential mismatches are serious. The question is then whether labour-market problems are likely to influence the Danish growth prospects negatively – either directly by not performing the function of a market properly, or indirectly by forcing political initiatives that will cause disruptions in the general business climate in Denmark.

4.2 Institutional changes in the labour market

The Danish tradition for labour-market intermediation is strong, and both employers and workers are highly organized. The legal framework for the negotiation of settlements is generally well-accepted. Consequently, both politicians and the labour- market organizations have preferred to settle labour-market issues without involving the government or the Folketing.

However, particularly in the late 1970s, the problems of stagflation made settlements more complicated and less successful than earlier. Government interest in controlling inflation and employment resulted in several cases of intervention in the settlement process. In the late 1970s and early 1980s, the labour-market organizations have undergone many changes. It is still difficult to assess the importance of these changes with respect to future labour-market developments, but the traditional unity of the labour movement (and to some extent the unity of employers) seems to have eroded considerably.

The Danish trade unions are organized according to professions, education and sex. There are a total of 31 different trade unions. The appropriateness of this form of organization has been discussed for many years. Plans of reorganizing the labour market in vertical trade unions (industrial unions), as in Sweden, have often

been put forward by the large Metal Workers Union. The main opponent to these ideas has been the SID (the Specialized Workers Union in Denmark) which represents unskilled workers with minimum pay. Among other things, consideration for the lowest paid workers has made SID plead for a single-union form of organization. Despite mediation on part of the LO (the Danish Federation of Trade Unions) no solution has emerged on the question of labour-union structure, and disputes are likely to continue among individual unions.

The trade-union movement has traditionally maintained strong ties (through the LO) to the Social Democratic Party, as is the case in Norway and Sweden. A softening in the relations between unions and party has taken place in recent years in that some unions have started to support financially also other left-wing parties. The debate on Danish membership of the EEC has also led to disagreements between elements of the labour movement and the Party, but the affiliation with the Social Democratic Party is still quite strong. There have also been less successful attempts at establishing non-political trade-union alternatives parallel to the existing system.

The pressure for finding a solution to the problems of the future structure of the labour movement must also be viewed in light of the dedication and loyalty of trade-union members. In this area important changes have occured:

- Most of the trade unions are huge organizations with a complicated hierarchy. Individual members easily become detached from problems and decision procedures.

- The evolution of the employment structure tends to reduce the number of blue-collar workers and increase the importance of white-collar jobs. Hence, more people are employed in jobs lacking strong trade-union traditions.

- The trade-union movement has been weakened by developments in their traditional core activities, i.e. wage settlements. Settlements have repeatedly been subject to public intervention and incomes policy, either indirectly through tri-partite negotiations, government announcements of wage ceilings etc., or directly by legislative intervention.

- In the late 1970s and early 1980s, a broader understanding for and acceptance of the idea may have evolved that it may not be in the wage earner's best interest to strive blindly for additional wage increases.

Thus, the trade-union movement has experienced a declining leverage in the traditional areas of wage settlements. Prompted by structural changes as described above, trade unions have increasingly moved into new areas of activity.

Among these, the question of a spreading of the ownership of the means of production ("Economic Democracy") has been much discussed throughout the 1970s. Since the late 1970s, the very far-reaching ideals embodied in "Economic Democracy" have developed into less radical calls for *profit sharing* schemes. Some of the points of dispute are still the same, however. Most important are the questions of whether profit sharing schemes should be compulsory, and whether employee shares may be owned or controlled by large centralized (regional) funds (as in Sweden since 1983). The employers generally favour voluntary and decentralized arrangements, and so far all proposals involving compulsory and centralized schemes have been rejected.

The question of the length of *working hours* has also been emphasized during the 1970s and early 1980s, when prospects for improvement in the unemployment situation were slim. Another new task which has received higher priority is the possibility of a reform of the *pension system.*

Generally, the evolution of the business environment and the increasing demand for flexibility and quality of the labourforce will be a constant challenge to the trade union movement, and will necessitate changes of existing structures. This is widely recognized by the labour movement, and numerous organizational changes and policy adjustments are presently being considered. However, basic changes will occur very slowly which entails that the rest of the 1980s may well experience disputes in wage settlements, wage drift and possibly even labour unrest. One particular worry concerns the large group of civil servants, which has benefitted very little from the recent economic recovery. Events in the mid-1980s in neighbouring countries clearly point to the possibility of large scale protesting.

4.3 Labour-market policies

In light of growing unemployment during the 1970s, specific labour-market policies received higher priority. Steps were taken in order to increase the total number of jobs. The table below gives an outline of the measures taken and their relative importance.

Unemployed persons who have been without employment for 12 months during the previous 15 months have the right to a socalled *job offer* of 9 months' duration in the private sector or of 7 months' duration in the public sector. The scheme is heavily subsidized by the central Government. If the person drops back into unemployment after this job offer, until recently he had the right to another job offer applying the same criteria. This has now been changed in the sense that the second job offer has been replaced by an offer of education for a period of 18 months. Simultaneously, unemployment benefits will be gradually reduced if the period of unemployment extends beyond 2.5 years. The total number of job offers reached a peak in 1983 and in the coming years it will be moderated by the transformation of the second job offer into an offer of education.

Table III:7 Labour market instruments
1 000 man-years

	1979	1980	1981	1982	1983	1984	1985[1])
Job offer	8,1	8,2	18,1	35,6	38,6	37,5	35,0
Job creation	–	–	–	–	4,3	5,3	1,6
Relief work[2])	7,0	6,5	6,4	5,6	1,0	1,1	1,6
Wage subsidy[3])	0,6	0,4	0,9	2,2	5,0	6,0	5,4
Special education programmes	1,5	2,1	2,7	3,2	3,6	4,8	4,9
Early retirement	35,0	54,0	61,0	69,0	81,0	87,0	94,0
Total	52,2	71,2	89,1	115,6	133,5	142,1	144,9

[1]) Preliminary data
[2]) Employment projects and relief work
[3]) Wage subsidy for youth employment (excl. apprentices)
Source: Ministry of Labour

Employment projects were intended to give work to persons above 25 years who had been unemployed for a very long time, while the *job creation* scheme has supported the establishment of new jobs for young people under 25. This practice has now been combined with other measures which have been taken to support the employment of young people.

The *early retirement* scheme makes it possible to withdraw from the labour market at the age of 60, receiving a payment of 70 % of the most recent income (in 1985 maximum 103.000 DKK). Such payment is gradually reduced to the level of the old-age pension over a period of seven years (the ordinary age of retirement being 67). The popularity of this arrangement is still growing.

With the change of government in September 1982 a reorientation of the labour-market policy began. This change of policy has come about partly due to the economic burden associated with employment schemes, partly because the arrangements are now considered useless as a permanent solution to the employment problems. It is clear that (leaving out the continued growth in the number of early retirements) efforts made to reduce unemployment by these means peaked in 1984.

It is part of the Government's objectives within the area of labour-market policy to abandon the specific measures taken to promote employment and instead make efforts to increase employment permanently through the general economic policy, especially through the *incomes policy*. Hence, labour-market policy has to some degree returned to its earlier role of supporting the general economic policy.

Measures of incomes policy were used already in the late 1970s, but they were strengthened considerably in one of the first major initiatives of the present Government in 1982, namely to suspend automatic indexation of wages until 1985. Furthermore, ceilings were imposed on public-sector wage increases for the 1983–85 settlements, and a freeze was imposed on unemployment and illness benefits. In the spring of 1984, the suspension of the indexation scheme was prolonged to 1987. Recent additional measures strengthen the incomes policy – partly by extending limits to profits and price increases. Another characteristic instrument, introduced in 1984, is the offer of cash remuneration for unemployed persons who intend to start their own business. Less characteristic of the present Government's policy is the reduction of the working week from 40 to 39 hours, which will take effect from 1987.

Whereas overall employment promotion has become less relevant during recent years, the problems of *mismatches* in the labour market have been increasingly recognized. Bottlenecks have occurred surprisingly rapidly during recent recoveries and can, under the influence of the strong structural changes in production, be expected to remain a problem.

Based on this background, the element of *education* in the employment policy has been emphasized. This can be seen in the above mentioned replacement of the second job offer by paid education (i.e. payment equalling the unemployment benefit). It is also evident in the changes of labour-market training and the new possibilities for technical schools to offer educational services to industry. It must be emphasized, however, that very long lags are involved in correcting labour-market problems through educational policies. Consequently, such measures can hardly provide a decisive improvement to the flexibility of Danish labour markets in the period up to 1990.

The recent surge in job creation is certain to slow down significantly during the rest of the 1980s. This will draw renewed attention to labour-market issues, and a re-evaluaton of policy instruments may become necessary. In particular, labour-market policies will increasingly be called upon to aid the structural improvement of exports. Whether the labour market can contribute positively to structural changes, or whether strong negative effects in the form of traditional wage disagreements will occur is uncertain; the labour market is presently characterized by disagreements and lack of strategies which point to a difficult period of adaptation to changing demands.

In conclusion, the following development trends may be expected:

- Mismatch problems, in particular with respect to skilled labour will continually create wage drift which, in turn, will endanger the strategy of improving competitiveness to promote exports. The wage settlements scheduled for early 1987 are likely to result in new wage increases, particularly for civil servants.

- Whereas present labour-market policies are likely to continue (i.e. increased reliance on wage differentials and modest growth of unemployment benefits, coupled with increasing importance of educational policies, etc.), the stagnation in job creation is likely to result in strong political demands for traditional reflationary fiscal policies with a view to increase employment. Such policies are all the more tempting when the public sector is likely to run a sizeable budget surplus.

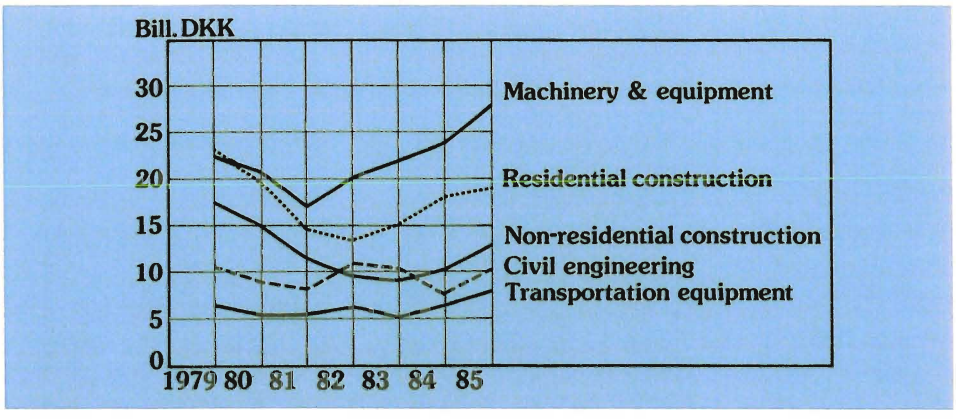
5. Investment Patterns in the 1980s

In view of the adjustment challenges facing Denmark in the second half of the 1980s, investment developments attracts special interest. For a proper evaluation of recent investment trends, a number of questions must be addressed. Which determinants provided for the recent investment boom, what are the prospects for continued high investment levels and what supply-side effects may be expected from the investment surge? In this section, two major conclusions emerge: first, the determinants of the recent investment surge are unlikely to stay as favourable as in 1983–86, and second, the recent fixed capital formation has been directed primarily at meeting rapidly expanding (domestic) demand and hence provide a less favourable basis for international competitiveness.

Private fixed investments in the business sector have exhibited a declining trend between 1960 and the early 1980s when measured as a share of GDP. In the second half of the 1970s, and in the first couple of years in the 1980s, the decline in fixed capital formation in both manufacturing and agriculture turned into a virtual investment downturn. In agriculture, the EEC farm price freeze in 1979–81 and the high interest rates, coupled with fixed-interest financial obligations all contributed to a severe recession.

Since 1983, however, the rate of fixed-capital formation has picked up considerable speed – especially in manufacturing, but also in agriculture. From 1983 to 1985, total annual investments in industry increased by about 60 % in volume, but the absolute level is still not exceptionally high by historical standards, international or domestic.

Figure III:8 Gross fixed investments by type
Billion DKK, 1980 prices



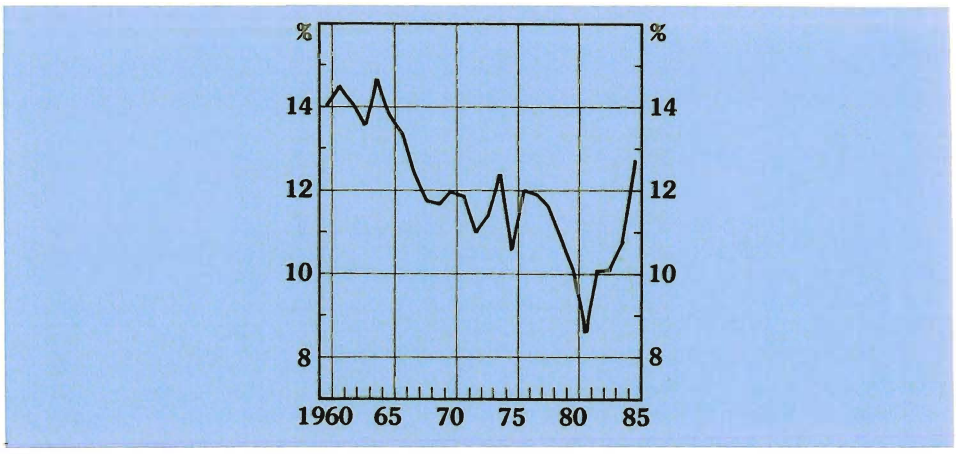
Source: Central Statistical Office of Denmark

5.1 Determinants of investment growth

The main determinants of private-business investments are usually considered to be the expected demand, the level of interest rates and the relative prices of labour and capital. Furthermore, it is generally agreed that realized profits and the return on investments are also of importance in investment decisions.

In the following sections some of the characteristic features of the investment upturn will be discussed. Particularly concerning the question of profitability and financing of real investments, conditions have improved dramatically since 1982 – despite the continued high real rates of interest.

Figure III:9 Private business investments 1960–85
Per cent of GDP



Source: Finance Report 1986, Ministry of Finance

In the 1980s a new factor has been added to the determinants of Danish investments, i.e. easier access to foreign capital at lower costs (rates of interest). This development has not been explicitly taken into account in the following discussion, but these sources are likely to be of increasing importance.

Realized profits influence investment decisions by two separate functions:

- Realized profits and the corresponding rates of return on capital may be used as indicators of future earnings and profitability.

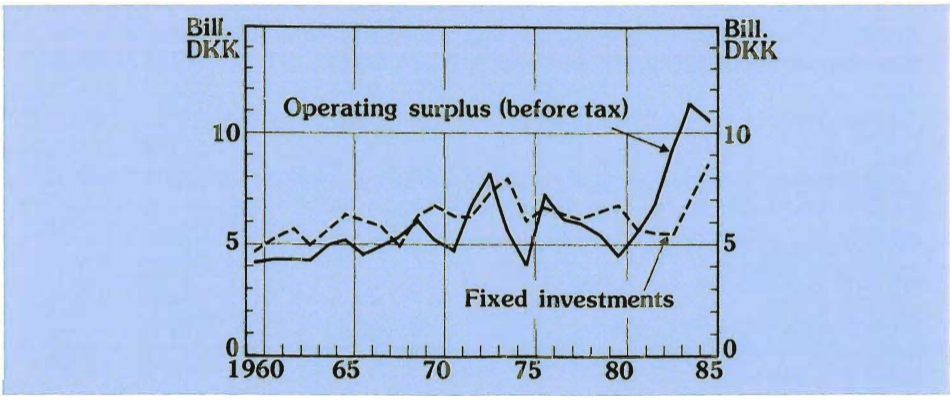
- Retained profits provide means of finance – particularly in immaterial and high-risk investments, e.g. investments in research and development. Furthermore, the larger internal funds make additional borrowing easier.

In the 1980s profits have improved markedly. Favourable developments in production and price have increased turnover of the private sector. The incomes policy has further improved conditions for investment by shifting the relative earnings of labour (wage income) and capital ("entrepreneural income" or profits) in favour of the latter. No matter how the relative income shares are measured, the shift in the 1980s has been remarkable. The political implications are important since wage earners are likely to demand a reversal of this trend – or some compensation, such as profit sharing or a pension reform.

Generally speaking, the main motive for investing is the expected future remuneration – irrespective of the type of investment. Hence, investment decisions depend on the prospects for profits associated with alternative investment projects. Similarly, the cost of borrowing financial means to carry through real investment, must be lower than the expected returns.

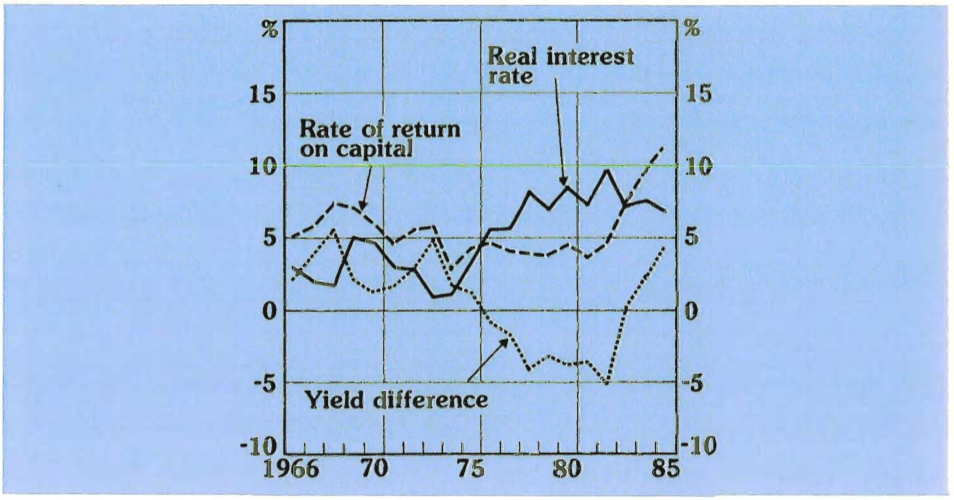
In order to analyse the effect of relative yields on alternative investments, the difference between the real market rate of interest may be compared with the return on real capital.

Figure III:10 Operating surplus and investments[1])
Billion DKK, 1980 prices



[1]) Manufacturing companies with 20 or more employees
Source: Danish Federation of Industries

Figure III:11 Rate of return on capital and interest rate[1])
Per cent



[1]) All data concern manufacturing industry. Rate of return on capital: Net yield on real capital, i.e. gross factor income less wages (actual and imputed) and depreciation in % of fixed capital stock at replacement value. Interest rate: real rate of interest, i.e. average interest on long-term mortgage bonds less growth in consumer prices. "Yield-difference": rate of return on capital less real interest rate
Source: Finance Report 1986, Ministry of Finance

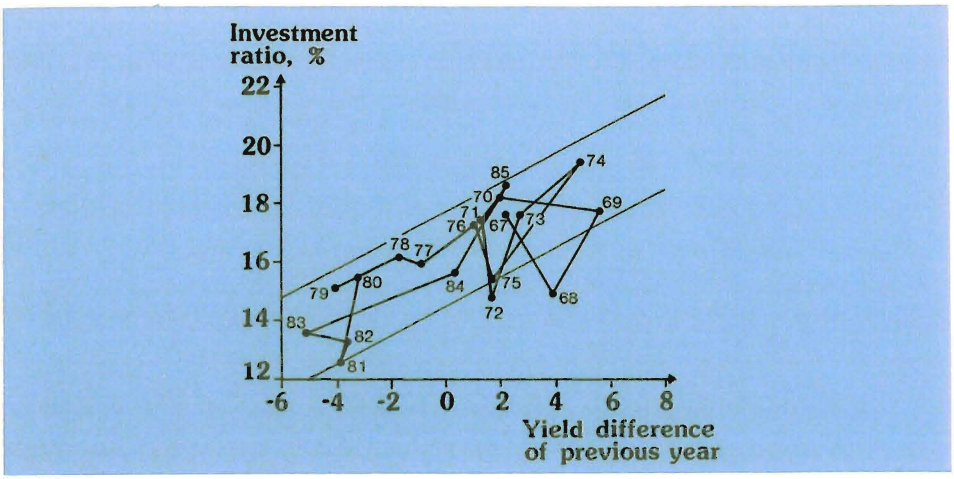
It is noteworthy that the "yield-difference" turned negative during the second half of the 1970s and the early 1980s. During the same period private-sector investments declined (both in absolute and relative terms). Negative "yield-differences" occurred in this period both as a result of very high real interest rates and of relatively low returns on real investments (naturally, interpretation of "positive" and "negative" differentials should allow for tax treatment which is not considered here).

Figure III:11 also clearly shows the need for a further reduction in the real rates of interest. The recent improvement in returns on real capital must necessarily stabilize, and if a renewed decline occurs, the real interest rate may prove to be difficult to force downwards to avoid the "yield-difference" from turning negative again.

The relationship between the "yield-difference" and real investment activities is depicted in figure III:12. Here the "yield-difference" calculated in any one year is related to the investment ratio of the subsequent year.

The changes from one year to another appear to be dominated by movement in the southwest-northeast direction as indicated by the lines drawn between successive years. Hence, changes in the "yield-difference" from one year to the other is most often followed by a change in the same direction of the investment ratio. The data presented also point to a certain stability in the noted relationship.

Figure III:12 "Yield-difference" and investment ratio[1])

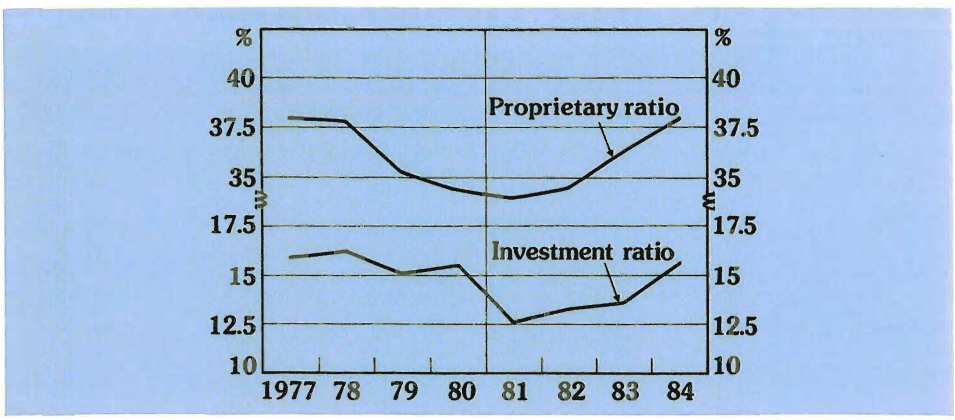


[1]) All data concern manufacturing. "Yield-difference" is defined as in figure III:11; the investment ratio is the ratio of gross investments to GDP at constant factor prices
Source: Finance Report 1986, Ministry of Finance

As stated above, realized profits influence investment decisions in several ways. So far, only the importance of profits as signals (proxy) for future yields has been discussed. An additional role of profits is to provide *means of finance*. Profits provide a direct source of financing but even more important is the indirect role of profits in giving access to additional sources of finance, i.e. new equity capital or loans. One measure of a company's potential ability to finance investments out of own funds is the "proprietary ratio", i.e. the ratio of equity capital to total assets.

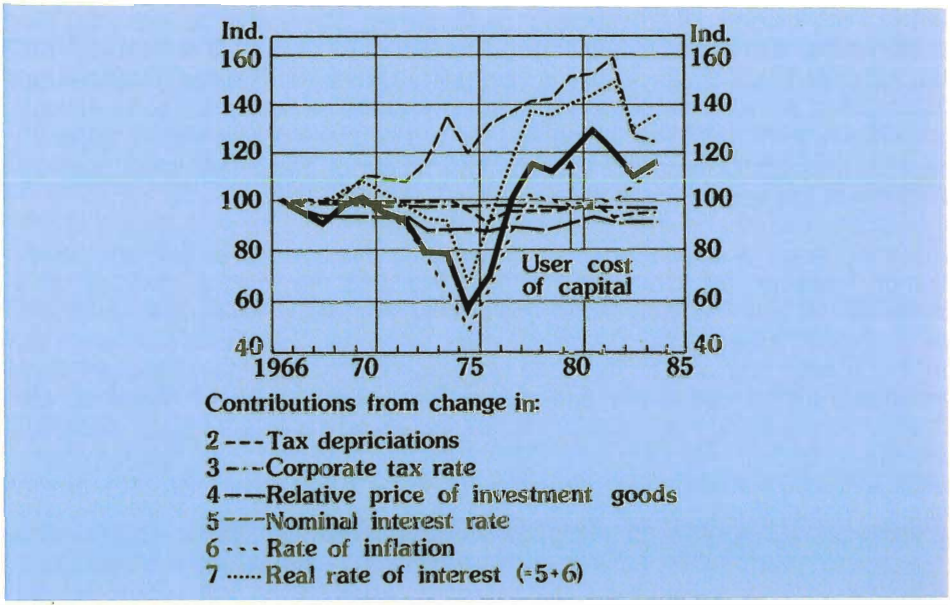
Figure III:13 Proprietary ratio and investment ratio[1])

Per cent



[1]) All data concern manufacturing enterprises with 20 or more employees. Proprietary ratio: the ratio of equity capital to total assets. Investment ratio: defined as in figure III:12
Source: Finance Report 1986, Ministry of Finance

Figure III:14 Break-down of user cost of capital[1])
Index 1966=100



[1]) User cost of private machinery (excl. agriculture and energy) relative to price deflator of GDP at factor cost. The formula used for calculating user cost is described in Erik Biørn: Analyse av investeringsatferd, Statistisk Sentralburå, Oslo 1979
Source: Economic Council: Dansk pengepolitik under forvandling, September 1985

As evident from figure III:13, the financial strength (as measured by the proprietary ratio) of the manufacturing industry has been declining generally in the second half of the 1970s and a low point was reached in 1981. Since then the ratio has been increasing to a level which roughly corresponds to the average during the mid-1970s. The development of the proprietary ratio is a fairly close reflection of the development in profits and profitability.

Among the other important determinants of investment activity, the relative cost of using capital and expected demand will be dealt with below.

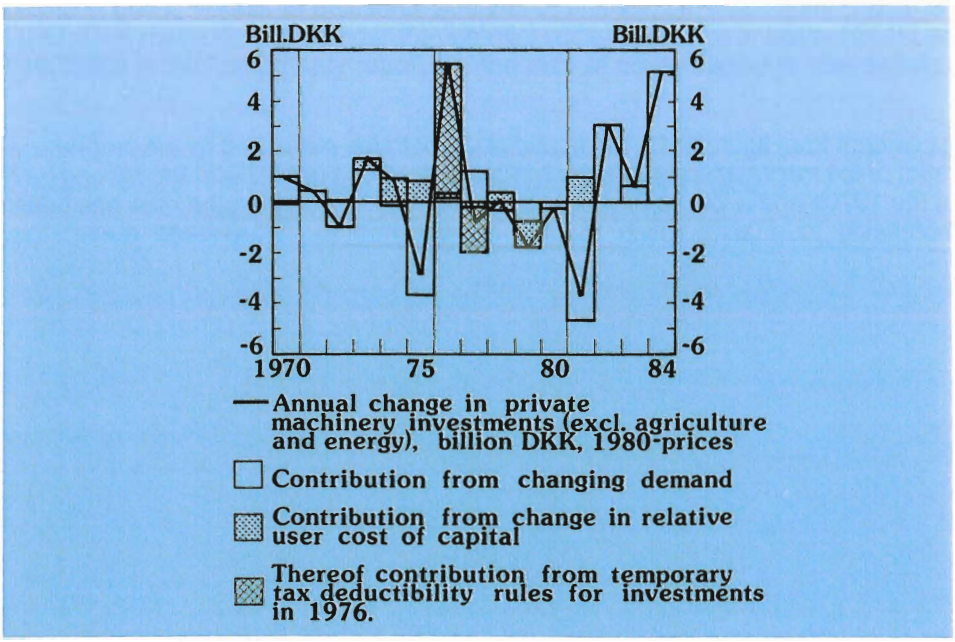
Clearly, the *cost of using capital* in production will be an important determinant for the overall capital stock in use and investment activity. The cost of using capital is usually described by calculating "user costs", i.e. a composite price of using real productive capital where the real rate of interest typically has decisive importance.

In the figure III:14 the development of the total user cost of capital is broken down into contributions from five individual factors. As can be seen, there was a declining trend in user costs in relation to the GDP-deflator up to the mid-1970s. Between 1975 and 1981 the user cost of capital increased relative to the general price development, and since then the relative price of using machinery has been falling. It should be noted, however, that the level is still rather high.

From the break-down of user cost it is evident that the single most important factor in explaining the development in total relative user cost has been the real rate of interest. For the 1980s, the negative effect of high real interest rates has been very strong. With the present prospects for moderate inflation during the remaining part of the 1980s, the danger of further negative effects on investments from high real interest rates is still acute. Also, it is interesting to note that the contributions from depreciation allowances, corporate taxation and the relative price of investment goods have been negative throughout the period – i.e. these factors generally have contributed to keep increases in user costs of machinery lower than the increase in the general price level.

The importance of capital costs in determining the general investment activity cannot, however, be established without including the relative costs of other production factors – notably labour and energy. For Danish producers the price of using capital has generally (since the mid-1960s) been declining relative to the price of energy and labour. The rapid increases in both wages and energy prices dominated in the mid-1970s and caused the relative price of capital to fall. Thereafter, the rising real rates of interest increased the relative price of capital, until the second oil price hike in 1980 reversed the trend and made relative energy prices increase somewhat. In sum, however, in the 1980s the relative user cost of capital (compared with labour and energy prices) has been substantially below the levels in the 1960s and early 1970s.

Figure III:15 Break-down of annual change in investment[1])
Billion DKK, 1980 prices



[1]) Annual, absolute changes in private machinery investments (excluding agriculture and energy)
Note: Data for 1982–84 are preliminary
Source: Economic Council: Dansk pengepolitik under forvandling, September 1985

Of all determinants of investment, *expected future demand* is generally considered to be the most important, and Denmark's case does not appear to be an exception. While it is difficult to document the positive expectations of private business towards future demand, there is no doubt that this factor alone explains a substantial part of the recorded investment behaviour in the private business sector during the recent recovery.

In figure III:15 the relative importance of demand in investment changes is analysed. Here, total variations in annual investments have been broken down into contributions from changes in relative prices and contributions from expected demand (actual changes in production with adjustment for varying capacity utilization serve as proxy).

These estimates confirm the importance of (expected) demand in investment decisions. Furthermore, investments during the economic recovery in the mid-1980s appear to be largely determined by expectations of future demand, which may also make the investment boom sensitive to any deterioration in confidence.

By way of conclusion, it is evident that the development in investments has been influenced both by cost/profitability/ financing aspects and by expected demand. The remarkable investment recovery since 1982 may be attributed to a positive development in most factors – marking a strong reversal of the investment crisis in the late 1970s and early 1980s.

The prospects for future investment growth are mixed. While further declines in the real interest rates are likely over the medium term, the decline is unlikely to occur fast enough to avoid the "yield-difference" from being squeezed (or even from turning negative again) as returns on fixed capital are unlikely to evolve very favourably during the rest of the 1980s. As argued in section 6, the strong recovery of demand since 1982 will not continue at an unchanged pace. Export prospects are still uncertain, and domestic demand is likely to slow down – due both to the investment cycle and to discretionary efforts made to reduce private consumption.

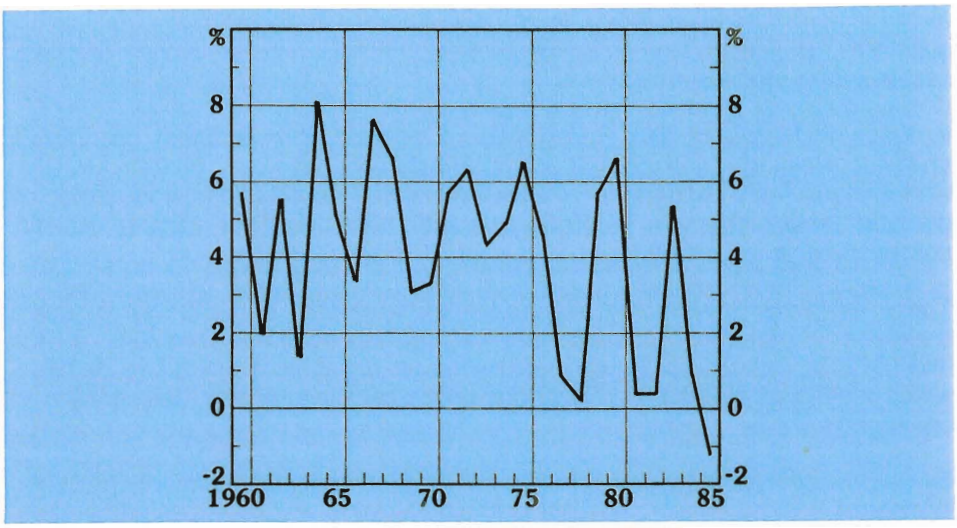
5.2 Investment for the future?

In general, the investment surge during 1983–86 provides a positive sign for the future productive capacity and the technological development of the economy. Nevertheless, a closer evaluation of the recent investments trends provides a less positive picture. First of all, the investment boom has been a major reason for the increasing current-account deficit in recent years.

Second, the investments undertaken in recent years have been of moderate technological standard. Using the foreign trade statistics to gauge the general character of capital formation (due to the very high import ratio of investments) reveals that investments have been directed to sheltered sectors or to sectors with low export prospects, e.g. machinery for agriculture, dairying and construction. At the same time, imports of technologically advanced production equipment has increased only moderately, and in 1985 it practically stopped, despite the continued growth in imports of investment goods.

Third, the modest technological level of imports must be seen along with another characteristic of the investment boom: investments have been directed toward

Figure III:16 Productivity growth in manufacturing[1])
Per cent



[1]) Productivity measured as GDP (at factor cost) per employee in manufacturing
Source: Statistical appendix

expanding capacity rather than to rationalization. From the point of view of the future competitiveness of Danish exports, investments aimed at rationalization are preferable to increases in capacity.

During earlier economic upswings, both investment growth *and* productivity growth have generally developed pro-cyclically. This pattern has been reversed during the recent recovery, as investments accommodated the rapid growth in domestic demand – and to a smaller degree in foreign demand. Evidence of this preoccupation with meeting domestic demand is available from the high rates of capacity utilization that prevailed during 1984–85. An immediate consequence has been the remarkable growth in employment, which surpassed the OECD average considerably.

Investments cannot, however, be looked upon as merely additions to fixed capital. "*Soft investments*" in human capital, know-how and organization may be equally, if not more important.

In surveys conducted by the Danish Federation of Industries, there are signs that industry is increasing investments exactly in areas such as export promotion and research and development, although the levels are still very modest.

Investment in R&D have, to a large extent, been concentrated outside the private sector in public research institutions. In recent years, Danish firms have increased the resources used for R&D. This development is closely related to the growth of corporate profits noted above. The sectoral R&D intensity varies considerably, as evident from table III:8. Food processing exhibits a low R&D intensity, but in more recent years (in particular 1986) the deteriorating export performance has prompted new efforts in this area.

Table III:8 R&D intensity in manufacturing[1])

Sector	Intensity[2])	1977	1979	1981	1983
Food processing	I	1,0	0,8	0,9	1,1
Clothing	I	0,5	0,5	0,4	0,4
Wood, furniture	I	0,4	0,3	0,4	0,2
Paper, graphics	I	0,2	0,3	0,2	0,2
Chemical raw material	III	4,1	3,7	3,4	3,3
Plastic, rubber	I	1,8	1,9	1,2	1,3
Other chemicals[3])	IV	6,7	8,7	9,7	11,5
Stone, clay, glass	II	1,4	1,6	1,3	1,8
Iron and metal goods	I	0,6	0,7	0,7	1,0
Engineering	III	3,7	3,4	3,6	4,3
Electronics	IV	6,0	5,9	6,6	7,7
Shipyards	II	2,4	2,1	2,6	2,9
Other transport	I	0,9	1,9	0,5	1,2
Measuring instruments	IV	12,9	13,0	10,7	11,2
Average		2,3	2,3	2,3	2,7

[1]) Total cost of research in relation to previous year's value added
[2]) Classification according to the level of intensity I (low) to IV (high)
[3]) Including pharmaceuticals
Source: Forskningssekretariatet in Møller, K.: Industrien er begyndt at øge sin forskning, Sparekassen, February 1985

During the 1970s, R&D investments expanded primarily in *small enterprises*. Between 1975 and 1981, the share of total R&D activity (measured by labour input), performed in firms with less than 100 employees, increased from 8 to 20 %. Similarly, firms with more than 500 employees reduced their share in total R&D activity by nine percentage points. Since 1981, however, this trend has been reversed. Large companies are now increasing their R&D activity faster than smaller firms.

6. Medium-Term Growth Prospects

In the preceeding discussion, the economic recovery of 1982–1986 has been deemed unsustainable due both to the likely temporary character of the external growth factors and the structural characteristics of the Danish economy.

As for the structural problems of the Danish economy, the recent recovery appears to have resulted only in marginal improvements, despite positive developments, for instance, in private-sector employment. Apparently, the long-standing trade-off between high growth with large external-account deficit and low growth with moderate external-account deficit still exists. No decisive structural changes seem to have taken place to eliminate this rigorous and unfortunate relationship.

Given the record current-account deficit foreseen for 1986 and the large foreign debt already accumulated, the primacy of improving the external account in the overall policy setting is certain to be strengthened in the most immediate future.

Hence, forecasting growth of the Danish economy must necessarily involve forecasting a growth path where the deficit is halted and gradually reduced. Due to the structural characteristics noted above, this basically implies forecasting low growth as high growth is incompatible with improvements on the external account. Besides this percieved necessity of a low-growth path, it is also judged to be the most likely course of events.

Consequently, the forecasts presented here assume that lower growth will in fact occur, and that this will bring the current-account deficit under control. The growth-retarding factors will be both cyclical moderation of autonomous demand factors and austerity measures on the part of the Government.

Whereas a low-growth path is considered most likely, a case for a higher growth scenario may also be advanced. In a positive version, the export and investment prospects may prove to be better than predicted in this forecast. In a less favourable version, private consumption may continue at the high level for some time. The latter version, however, would entail further deterioration of the external position, and the scenario would truly be a worst case one.

The main characteristics during 1986–1990 are expected to be:

- A slowdown of domestic demand (both consumption and investment, and continued slow growth in public-sector spending), caused by cyclical downturns and by the cumulative effect of austerity measures taken during 1985 and 1986.

- Continued low inflation with some acceleration towards the end of the 1980s.

- Interest rates are unlikely to decline further during 1987–88 due to the current-account deficit; in fact the tendency in 1986 is towards a widening of the interest rate differential vis-a-vis international markets. Depending on the foreign trade performance the differential may later resume the decline.

- Public-sector finances are expected to move into surplus already in 1986 and thereafter to balance or show moderate deviations of no more than 0.5 % of the GDP.

- Exports are forecast to grow only moderately, by an annual average of about 3.5 %. However, due to the low overall growth, this rate is sufficient to gradually reduce the current-account deficit from close to 5 % of GDP in 1986. In fact, a balance on the external account may be within reach during the forecast period, but it is more likely to occur in the first half of the 1990s.

- Employment growth will stop, a latend the number of unemployed is expected to increase (already in progress in 1986). With the possible exception of 1986, the unemployment rate is expected to remain above 8 % throughout the forecast period. In fact, an increase in the unemployment is expected to raise the unemployment rate to at least 9 % by the end of the 1980s.

Table III:9 Balance of resources and expenditure 1970–90

	1985 Bill.DKK	Average annual change in volume, %			
		70→75	75→80	80→85	85→90
GDP (at market prices)	612.9	2.0	2.5	2.3	2.3
Imports	224.7	1.0	2.8	3.3	1.8
– goods	191.1	0.4	2.4	3.2	1.6
– services	33.6	6.6	5.8	3.7	3.4
Total resources	837.6	1.7	2.6	2.5	2.1
Exports	226.3	4.1	4.6	4.4	3.5
– goods	179.9	4.7	5.4	4.9	3.6
– services	46.5	2.5	1.9	2.8	3.2
Consumption	489.3	2.1	2.4	1.5	1.8
– private	334.6	1.3	1.5	1.6	2.2
– public	154.7	4.1	4.7	1.2	1.0
Fixed investments	115.4	−1.3	0.5	2.7	1.5
– private (incl. residential)	102.5	−0.6	1.0	4.7	1.6
– public	12.9	−3.4	−1.1	−7.2	1.0
Inventory[1])	6.5	0.7	0.4	0.5	0.5
Total demand	837.6	1.7	2.6	2.5	2.1

[1]) Weighted contribution to GDP-growth
Source: Central Statistical Office of Denmark and own estimates

Table III:10 GDP by sectors 1970–90

	1985 Bill.DKK	Average annual change in volume, %			
		70→75	75→80	80→85	85→90
Agriculture etc.	28.9	5.2	2.1	6.8	1.7
Mining, energy, etc.	6.2	−18.1	..	441.4	20.0
Industry	115.4	3.1	3.2	2.7	3.1
Construction	30.9	−3.2	0.1	−3.1	0.9
Private services	191.8	1.2	2.4	2.4	1.9
– Wholesale and retail trade	71.0	2.1	2.1	2.5	2.9
– Transport and communication	41.3	−1.8	3.3	−0.5	1.5
– Banking and insurance	16.2	4.8	−1.9	4.7	0.6
– Other private services	63.3	1.5	3.6	3.0	1.5
Ownership of dwellings	47.1	6.5	2.5	1.5	2.1
Public services	114.1	4.9	5.2	1.9	1.0

Source: Central Statistical Office of Denmark and own estimates

Employment growth stagnates

Whereas the recent employment gains have been dramatically large, the level of unemployment is still high (in 1986 an estimated 235,000 persons, corresponding to 8.4 % of the labour force).

The less optimistic outlook for the rest of the 1980s is based both on the more moderate growth expectations, but also on the recent history of employment changes and the present structure of employment. As pointed out in section 4, the sheltered and domestically oriented sectors have absorbed a substantial share of total employment gains, and this level of employment is judged unsustainable in the face of declining domestic demand. In industry (including traditional export industries) labour productivity growth has developed so slowly that a temporary reduction of the labour intake is certain to occur. Over the medium-term, employment growth depends crucially on export prospects. Finally, public-sector employment, measured in persons, is forecasted to increase moderately, and the real use of resources will increase less, due to increased parttime employment and reductions in working hours.

Exports and balance of payments

Export prospects for the rest of the 1980s are moderate. Due to the expected slow-down in private consumption and investment, imports are also predicted to decline drastically, thus easing the negative pressure on the current account. Continued, but slow declines in the international interest-rate level will likewise reduce the burden posed by debt servicing.

As discussed in section 3, the price competitiveness of Danish exports has improved considerably in the late 1970s, but this development was reversed around 1983 due to increases in the exchange rate of the Danish krone. In the coming years the price competitiveness is expected to remain stable or improve somewhat.

An improvement in the terms of trade has taken place during 1985–86, as import prices have declined faster than export prices (primarily due to lower oil prices). This development is not expected to continue; over the medium term a move towards a deterioration in terms of trade is expected, both due to increasing raw

Table III:11 Balance of manpower resources 1975–90

1 000 persons

		Change[1])		
	1985	1975→80	1980→85	1985→90
Labour force	2 809.9	+157.6	+184.2	+98.0
Unemployment	251.8	+ 53.2	+ 68.0	+10.0
Employment	2 558.1	+104.4	+116.2	+88.0

[1]) Comparisons of year-end data
Source: Central Statistical Office of Denmark and own estimates

material- and energy prices but also due to expected currency adjustments within the EMS. For the rest of the 1980s, a retarding effect on export growth will be the modest growth of traditional export markets in general and the increasing competition from USA and Japan.

Manufactured commodities are, despite the very disappointing export performance in 1985–86 (in 1986 growth of nominal exports is expected to reach little more than 1 %), still counted upon to rise significantly after the very sluggish development in 1985–86. Investments in the manufacturing industry have been intensive in recent years, and the reduction in domestic demand will swing more production to foreign markets, irrespective of the moderate international growth prospects.

Agricultural exports in 1986 are likely to decline some 2–3 % in nominal terms, with volumes growing about 3 % and prices declining more than 5 %. This marks a new and uncomfortable development in that agricultural exports have traditionally exhibited moderate or high growth, thus providing an important counterweight to the fluctuations in exports of industrial goods. Furthermore, this development may be indicative of the very modest growth prospects during the rest of the 1980s. EEC agricultural prices are expected to stay depressed, and world market prices are low for most foodstuffs. Volume growth will be hampered by saturated markets within the EEC, and the low dollar will drastically reduce agricultural exports to USA (in 1985 the USA received a record share of almost 12 % of total Danish agricultural exports).

Within the *service sector*, shipping is expected to earn less foreign currency in the future due to the lower dollar and the continued global surplus capacity, which will become more visible during an economic slow-down. Other parts of the service sector are generally expected to do well, despite the recent increases in the negative contribution to the external account of tourism earnings.

Table III:12 Commodity exports and imports 1970–90

	1985 Bill.DKK	Average annual change in volume, %			
		70→75	75→80	80→85	85→90
Exports:					
– Agricultural (SITC 0,1)	49.8	3.8	5.2	4.1	2.0
– Raw materials (SITC 2–4)	23.4	1.4	3.1	7.9	3.6
– Manufactured goods (SITC 5–9)	106.7	6.2	6.2	4.8	4.3
Imports:					
– Agricultural products (SITC 0,1)	19.1	3.7	6.6	4.3	1.9
– Raw materials (excl.fuel) (SITC 2,4)	9.8	−3.6	5.3	−0.1	3.6
– Fuel etc. (SITC 3)	33.1	−1.8	−1.7	−3.4	−2.8
– Manufactured goods (SITC 5–9)	129.1	1.9	3.3	5.6	2.3

Source: Central Statistical Office of Denmark and own estimates

Domestic demand factors to slow down

Private consumption has been remarkably strong, with increases of 7–8 % annually during late 1985 and early 1986. This boom is projected to level off during 1986. Several factors point to this development: employment growth stagnates, and the propensity to consume stabilizes and possibly drops back from the relatively high level in recent years. Furthermore, the recent interest rate declines are unlikely to continue at the same pace, due to the continued deficit on the external account. Finally, discretionary intervention to moderate consumption (in particular imported consumer goods) have been introduced several times during 1985–86, and the cumulative effect on consumption may be rather large.

A reversal of the *investment* boom has been anticipated for some time, but the timing of the reversal is uncertain. Leading indicators have pointed to continued high growth in 1986 and perhaps in 1987. The present forecasts point to a levelling off of fixed investments already in 1986 and a decline in 1987. For the rest of the decade, close to zero-growth is expected.

The construction sector has been very buoyant during 1984–85, and the high level of housing starts in 1985 will raise activity in 1986 marginally, whereas 1987 is expected to show a decline. Apparently, households have taken some time to realize that the current deflationary regime has caused real rates of interest to rise dramatically. When broad recognition of this occurs, when the tax reform becomes effective in 1987, and when the cumulative effects of recent policy interventions materialize, a dampening of residential construction is certain to occur.

Public-sector finances under control

The remarkable improvement in central Government finances during the 1982–1986 period may be attributed both to improvements in the revenue and the expenditure sides, and, as evident from table III:1, this positive development is due also to changes in the fiscal policy in excess of the effect resulting from built-in stabilizers (although the contribution from the latter is generally larger).

Table III:13 Taxes and income transfers 1960–90

Per cent of GDP

	1960	1970	1980	1985	1990
1. Direct taxes	14.0	21.1	23.7	28.7	28.6
2. Social security contributions	1.4	1.6	0.8	1.9	1.2
3. Indirect taxes (net of subsidies)	12.0	14.6	16.2	15.6	16.6
4. Total current transfers from private sector	27.4	37.3	40.7	46.2	46.4
5. Current transfers to households	6.9	11.4	16.1	16.4	15.8
6. Net current transfers to public sector (4–5)	20.5	25.9	24.6	29.8	30.6

Source: Central Statistical Office of Denmark and own estimates

The tax base has improved through the creation of new tax incomes such as the "real-interest-rate-tax" (from 1983) and the repeated extension of energy taxation in recent years along with the strengthening of tax revenues as a result of the economic recovery. At the same time expenditure growth has been seriously halted, but overall public-sector expenditure has continued to grow about 0.5–1 % annually in real terms.

Despite the less optimistic economic outlook presented here, the public-sector financial problems may be disregarded for the rest of the decade. However, the public-sector surplus expected for 1986 is not large. As a result of the slow-down in growth expected for the coming years, it may prove very difficult to ensure a longer and uninterrupted period of surplus for the rest of the 1980s.

CHAPTER IV

Finland: Can the Good Macroeconomic Performance Continue?

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1. Introduction

As projected in the previous Nordic survey (Economic Growth in a Nordic Perspective, 1984) the high growth rates of the Finnish economy since the late 1970s are likely to come down to international levels – or below – towards the end of the 1980s. While the fall in oil prices will boost economic growth in most other industrial countries, growth prospects for the Finnish economy will be held back by shrinking exports to the Soviet Union. That is due to the bilateral nature of the Finnish-Soviet trade and to the fact that Finland's imports from the Soviet Union consist mainly of oil traded at world market prices. However, the negative effects of the diminishing bilateral trade – about 20 % of Finland's total foreign trade – will to large extent be offset by growing export demand in West European markets, and economic growth will not be slower than forecast before the collapse of oil prices. The shifts in export orientation will, in any case, speed up the ongoing adjustment process of many industries.

Export performance is of crucial importance for the whole Finnish economy: one third of total production and about 40 % of industrial production are exported. Hence the transformation process that export industries are facing is among the most important features about the economy during the latter half of the 1980s. Employment in many traditional manufacturing industries will decline, at the same time that there is lack of skilled labor in some industries and regions. In the 1970s, manufacturing as a whole entered a phase of intensive, productivity based growth, in which the rapidly increased R&D activity has played an important role. The productivity performance of Finnish manufacturing has well exceeded that in most other industrial countries during the past 5–10 years. This holds also for the total economy, but the differences in comparison with other industrial countries have been smaller than in manufacturing.

Despite the good productivity performance there has been a continued expansion of employment in the economy. This has been due to service industries – both private and public – which have increased their labor force very rapidly. When we add to the picture a good external balance in the 1980s and rather well-balanced public finances, the following questions may be asked: What are the causes behind the favourable developments? And to what extent and subject to what conditions could this good macroeconomic performance be maintained?

In the next section the key elements of macroeconomic developments in the 1980s will be described and the main factors behind the performance discussed. After that a comparison of the outturn with the previous Nordic projection is made and the main differences are briefly considered. Section 3 contains aspects of the ongoing structural changes in the financial markets and in manufacturing highlighting some of their implications for growth prospects over the next 5–10 years. In Section 4 the economic outlook up to 1990 by sectors is presented and main policy problems are discussed.

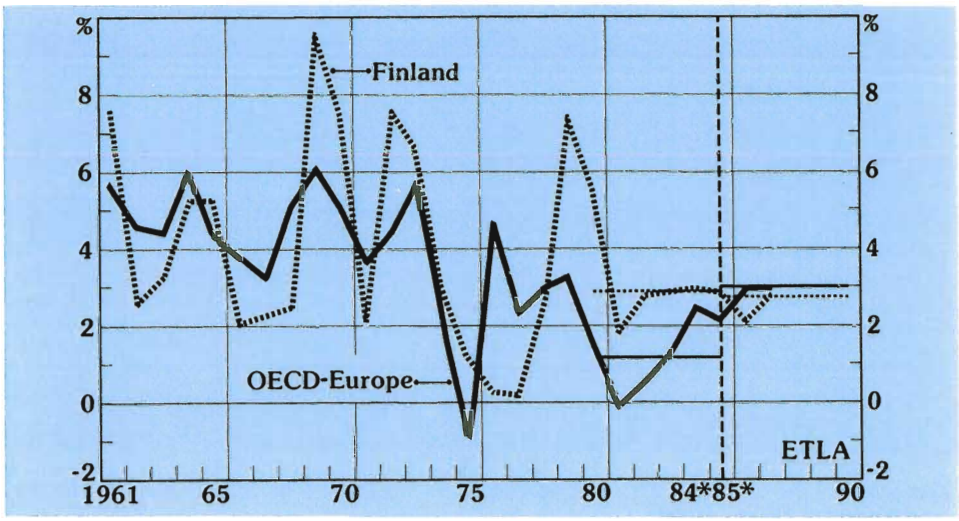
2. Macroeconomic Performance since the Late 1970s

2.1 Key Elements

Internationally compared, the macroeconomic performance of the Finnish economy has in many respects been excellent in the 1980s. Total output volume has grown in 1980–85 at an average rate of almost 3 % p.a., the corresponding figure for OECD-Europe being about one per cent and that for total OECD about 2 % (Figure IV:1). Furthermore, the growth rate over the past 4–5 years has been remarkably stable. Employment has been rising steadily and cost pressures have grown less than could have been expected from previous experience of situations where relative economic activity has exceeded that of other industrial countries (Figure IV:2). The unemployment rate, about 6 % in the 1980s, has been high by historical standards but internationally compared, on the other hand, quite low. The inflation rate, which exceeded the European average in the early 1980s, has during 1986 slowed down close to the international levels (Figure IV:3).

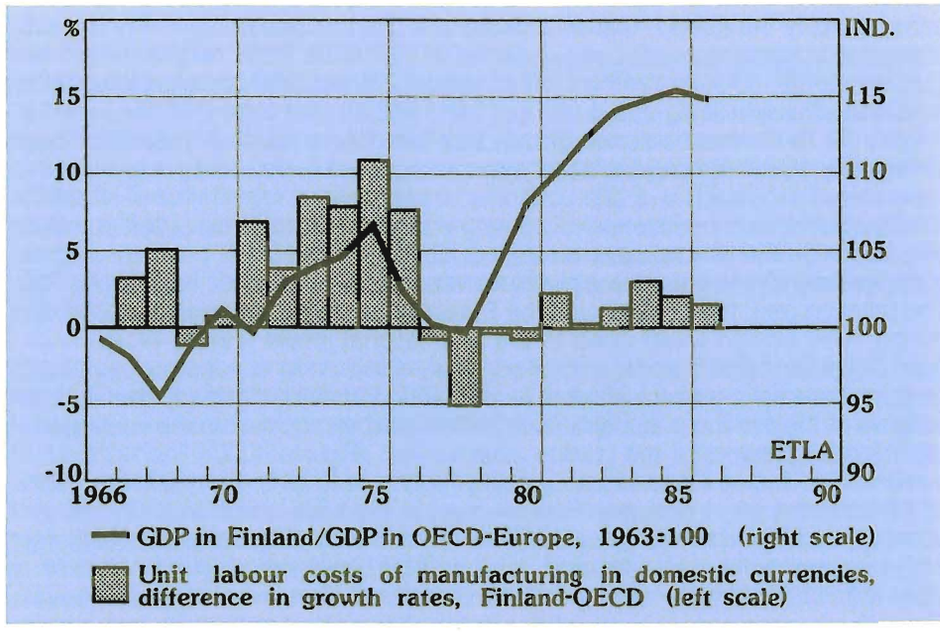
Despite the rapid growth of total output and domestic demand, the external balance of the economy has remained rather good, in contrast to the corresponding cyclical phases in the 1960s and 1970s (Figure IV:4). The volume of merchandise imports has increased only very slowly over the past five years, which indicates some structural improvement in the trade-off between the level of domestic activity and the external balance. That reflects, i.a., the effects of energy conservation, weakened demand for imported investment goods due to a downward shift in the investment ratio, and more efficient inventory management. The latter phenomenon has to a large extent been affected by high real interest rates and the introduction of new technologies.

Figure IV:1. GDP growth in Finland and in OECD-Europe, changes in volume 1961–1990



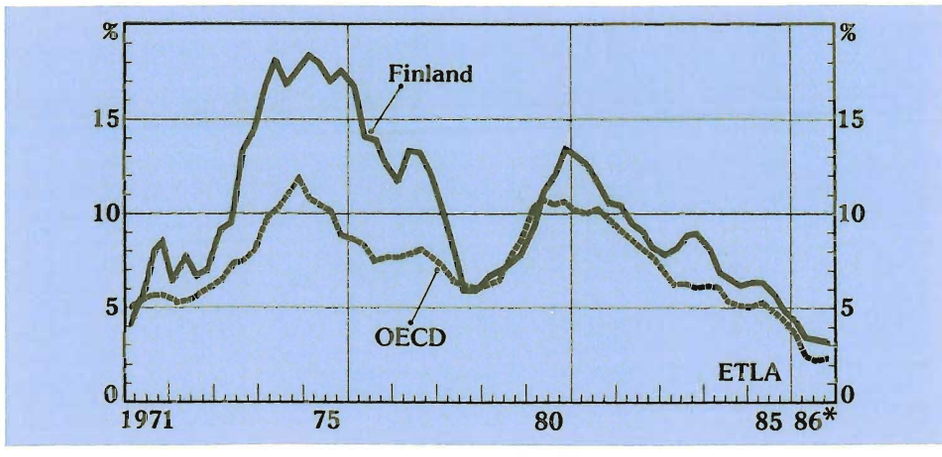
Sources: National Accounts, OECD and ETLA (1986).

Figure IV:2. Relative economic activity in Finland and difference in growth rates of unit labour costs, 1966–86



Sources: National Accounts, OECD and ETLA's estimates.

Figure IV:3. Changes in consumer price index in Finland and in the OECD countries [1])



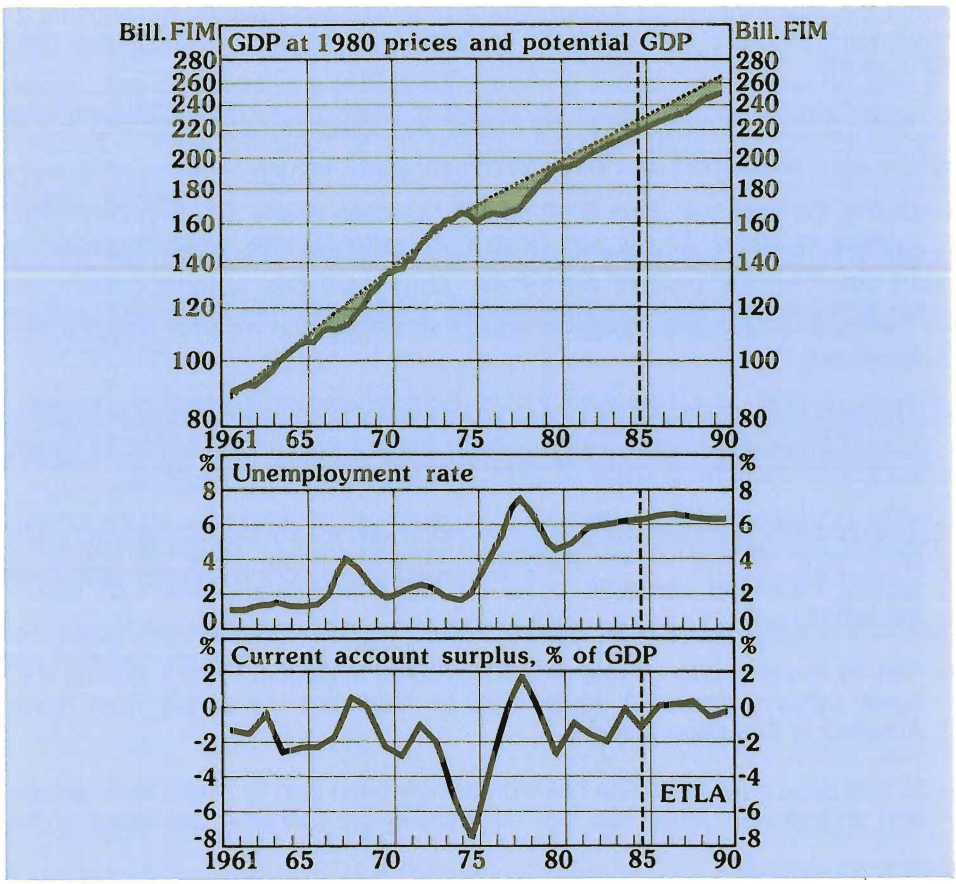
[1]) Weighted by the shares of the countries concerned in Europe's imports, as corrected by the composition of Finnish exports.

Sources: Main Economic Indicators (OECD) and ETLA's estimates.

As far as the public sector is concerned Finland has not been running large public deficits compared to many other industrial countries. There was a sharp increase in public expenditure in the late 1970s and early part of 1980s and public finances weakened remarkably, when economic growth slowed down and the ratio of total taxes to GDP was, in accordance with Government's reflationary package for the years 1977–82, prevented from rising. Particularly the state's indebtedness rose rapidly. However, the increase in the ratio of the state debt to GDP virtually came into a halt in 1984 and the current size of the gross debt – about 14 % of GDP – is among the lowest in the OECD countries. The net debt is only around 3–4 % of GDP.

It is not possible to indicate any single explanation for the favourable macroeconomic performance of the Finnish economy since the second oil shock. It is evident, however, that the government's medium-term reflationary plan, introduced in the late 1970s has had a bearing on the developments. The central objective of the

Figure IV:4. Total output, unemployment rate and external balance, 1961–1990



Source: ETLA (1986).

programme was to stimulate the growth of the open sector of the economy through various measures, which affected the profitability and competitiveness of industrial firms. In addition, the fluctuations in exports to Eastern markets (mainly to the Soviet Union) and to Western markets have balanced each other in such a way that the overall capacity utilisation rate has stayed rather high (see Figure IV:4). The bilateral trade has thus created a kind of built-in-stabilizer against the unexpected oil price shocks and subsequently contributed to some extent to the favourable macroeconomic performance of the economy. Furthermore, due to the increases in oil prices the average growth rate of exports to Eastern markets has been much faster than that to Western markets. In 1970–85 the real growth of exports to the Soviet Union averaged 7.1 % p.a., whereas the exports to Western markets increased at an average rate of 3.7 %.[1])

Manufacturing industry has played an important role in the economy during the 1980s especially as far as the improvement of the external balance is concerned. Internationally compared the performance of manufacturing industry has been quite good in terms of output growth, rise in productivity and profitability. There has not been so far such substantial interindustry structural changes that would have led to significant reductions in industrial capacity. Even industries such as steel and shipbuilding were able to avoid becoming affected by the general unfavourable developments. However, quite rapid adjustment process has been going on within the major industries in the form of product specialisation, movements in investment structure and improved productivity of production processes (see Section 31).

To sum up the key elements of the 1980s and causes for the rapid and stable growth the following points can be made:

- During the past five years GDP growth has been nearly 3 % with only slight cyclical variations. This is very close to the potential rate, which according to ETLA's estimates is about 3.25 %.

- The trade-off between domestic economic activity and external balance has improved.

- The sensitivity of Finnish exports to world market fluctuations has been smaller than in previous decades. This has been due to the balancing effects of Soviet trade and decreasing share of forest industry products in exports.

- The productivity performance of the economy, especially in manufacturing, has been good by international standards. That has partly offset the effects of rapidly increased domestic costs on the competitive position of export industries.

- The course of exchange rate of USD favoured traditional Finnish exports (i.e. forest industry products) up to 1985 by restricting the supply from North America to European markets.

- In economic policy attention has increasingly been paid to longer term issues, and an important target has been to improve the operating conditions of the

[1]) The macroeconomic impacts of Soviet trade on the Finnish economy have thoroughly been analysed in a project recently carried out at ETLA, see Alho et. al. (1987).

open sector of the economy. During the last few years the main concern of macro policies has been to preserve the relatively good balance achieved in the 1980s, a major aim being the curbing of inflation down to the international levels. All in all, after the very deflationary period of 1975–77 economic policies have consisted of relatively succesful mix of supply-side (or micro) policies and conventional macro policies.

2.2 Comparison of the NORD 84 Forecast to the Outcome

In the previous Nordic survey (Economic Growth in a Nordic Perspective, 1984, – subsequently to be referred to as 'Nord 84') a macroeconomic forecast was presented up to 1987. Although the forecast period is not yet ended, some comparisons of that outlook to the outturn have been presented in Table IV:1. As regards the main aggregates, the predictions presented in the Nord 84 seem to match very well the outcome so far. However, comparison of the sectoral forecasts reveals some important differences of relevance to the projections to be made for the latter half of the 1980s. Growth in the private services, especially business services and communication, has been a bit faster than expected. On the other hand, some labour-intensive branches of manufacturing, such as clothing and footwear and food manufacturing, have been growing even more slowly than forecast. The output volume of the textile, clothing and footwear industries will be below the 1982 level in 1987 owing to the gloomy outlook for Soviet trade. Growth prospects of these industries for the rest of the decade depend on their ability to adjust to the changed market conditons and to create new competitive edge in the western markets.

Also the wood industry, and especially sawmills, are in the middle of a deep restructuring process and the growth rate of this industry will be lower than forecast. The metal and engineering industries have shown a bit faster growth than predicted.

Projections of the external balance have been quite accurate: in 1982–85 current account has been on average slightly in deficit and since 1983 the net foreign debt in relation to GDP has gradually fallen down to about 15 % of GDP as predicted.

Looking at the forecast as a whole and the rest of the forecasting period (1986–87) it appears, from the current cyclical situation, that the five-year projections will prove slightly too optimistic.[1])

Both recent developments and the current situation as points of departure for the new forecast are dealt with in Section 4.

[1]) The forecast residual in Table IV:1 implies the average changes for the years 1986–87 (the rest of Nord 84 forecast) which should realize in order to make the whole forecast correct.

Table IV:1. Finnish Economy: Comparison of Nord 84 forecast with outcome

	1982 Bill. FIM	Average annual change in volume, %		
		Nord 84 1982–87	Outcome 1982–85	Forecast residual 1985–87
A. Balance of resources and expenditure				
GDP	236.7	3	2.8	3.3
Imports	74.3	2.5	3.5	1.0
Total supply/demand	311.0	2.5	3.0	1.8
Exports	75.5	4	3.3	5.1
Investment	56.9	1.5	2.0	0.7
– private	49.0	1.5	2.1	0.6
– public	7.9	1.5	1.3	1.8
Consumption	178.7	2	3.1	0.3
– private	131.3	2	2.9	0.6
– public	47.4	3	3.7	1.9
B. Manufacturing and mining				
Production				
– total manufacturing	55 977.2	3.5	3.7	3.2
– food	6 760.0	2	1.6	2.6
– textile and clothing	4 614.4	1	–1.3	4.5
– forest industries	9 465.0	4	5.0	2.6
– chemical industries	6 361.2	4	4.9	2.7
– metal and engineering	20 249.7	3.5	4.7	1.7
Investment	10 897.0	3.5	2.6	4.9
	1 000 persons 1982	Nord 84 changes to 1987	Outcome changes to 1985	Forecast residual
C. Manpower				
Labor-force	2 526	71	74	–3
Employment	2 377	86	60	16
	1982 % of GDP	Nord 84 % of GDP 1987	Outcome % of GDP 1985	
D. External balance and public sector				
Current account	–2	–1	–1.2	
Net foreign debt	16.1	15	15.9	
Public debt	15	18	16	

3. Structural Issues

3.1 Structural Changes in Manufacturing: The Challenges Ahead

3.1.1 Shifts in the Sources of Industrial Growth

Productivity performance of the Finnish industry, as conventionally measured, deteriorated in the latter half of the 1970s, just as in most other industrial countries. However, the slowdown was not strong (Table IV:2) and productivity growth has since the late 1970s outstripped that of the most important competitor countries.

Table IV:2. Changes in labour productivity (per employee) in manufacturing in selected countries, 1960–1984

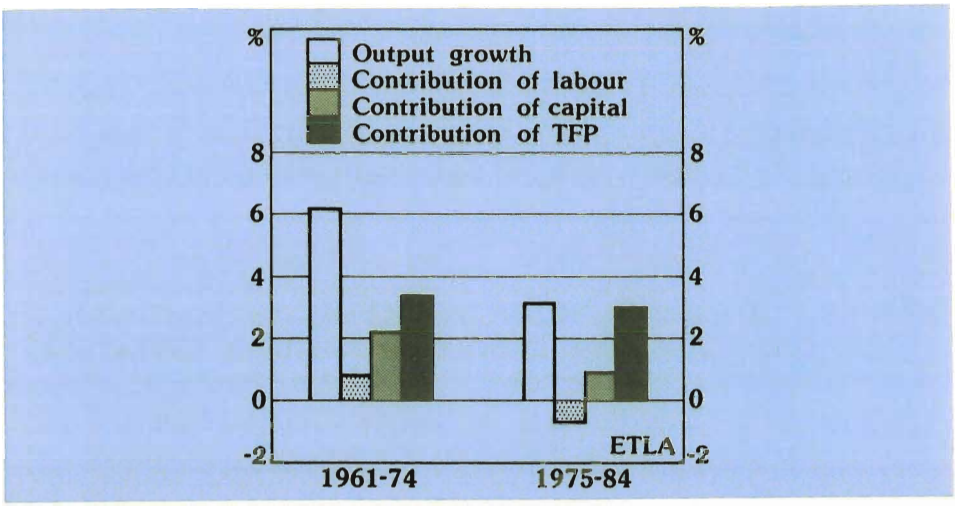
Country	Average annual rates of growth		
	1960–1973	1973–1979	1979–1984
France	6.2	4.2	3.0
Germany, F.R.	5.0	3.5	2.1
Italy	6.4	2.5	2.4
United Kingdom	3.6	0.8	2.9
Austria	6.0	3.5	3.3
Belgium	6.2	5.5	3.3
Finland	4.2	3.0	4.4
Netherlands	6.4	3.8	3.1
Norway	3.5	0.5	1.8
Sweden	5.3	1.0	3.6
Switzerland	4.2	2.0	2.2
Canada	4.0	1.5	2.5
United States	3.5	1.2	3.0

Source: ECE

There are several reasons for the good productivity performance of Finnish manufacturing. First, the rate of capacity utilisation has remained rather high because of the relatively stable export demand due to the counter-balancing effects of fluctuations in exports to the Western and to the Eastern markets. Secondly, there has been quite large structural changes within the major industries in favour of the high productivity branches. Thirdly, labour productivity growth has been due to relatively rapid increases in capital intensity and total factor productivity (TFP).

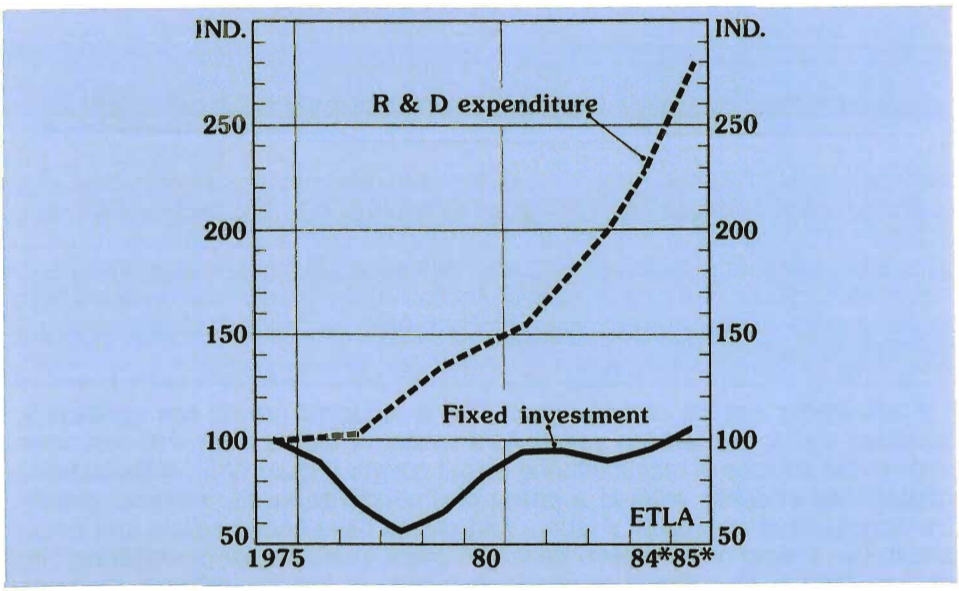
It is noteworthy that the contribution of TFP to industrial growth has significantly increased during the last ten years. As a matter of fact, a clear shift has taken place in the sources of manufacturing output growth (Figure IV:5). Manufacturing industry has evidently entered a phase of productivity-based, intensive growth. The contributions to growth of labour and capital have been neglible and output growth has almost entirely been based on gains in multifactor productivity. This residual reflects the effects of changing quality of inputs, technical progress, economies of scale, improvements in organizational skills,

Figure IV:5. Growth of manufacturing output and contribution of labour and capital input and total factor productivity (TFP) 1961–74 and 1975–84



Source: Ylä-Anttila (1986).

Figure IV:6. Volume of R&D expenditure and fixed investment in manufacturing



Source: Ylä-Anttila (1986).

As appears from Figure IV:5 and Table IV:3 the contribution of TFP to output growth in manufacturing was about 50 % in 1961–74 and about 95 % in 1975–84. The increases in TFP can partly be explained by R&D inputs as indicated by recent studies at ETLA.[1]) R&D outlays in Finnish manufacturing have

Table IV:3. Growth of manufacturing output in Finland and contribution of labour and capital input and total factor productivity (TFP), average annual changes.*)

Industry	Output growth	Contribution of labour	Contribution of capital	Contribution of TFP
Food manufacturing				
1961–74	4.7	0.5	2.2	2.1
1975–84	2.4	−0.7	1.0	2.1
Textile, wearing apparel and leather industries				
1961–74	3.9	−0.8	1.1	3.6
1975–84	1.0	−2.3	0.3	3.0
Wood industry				
1961–74	3.0	−0.7	1.7	2.1
1975–84	1.0	−2.2	0.5	2.8
Pulp and paper industry				
1961–74	6.5	0.7	2.0	3.8
1975–84	2.2	−1.7	0.6	3.3
Chemical industries				
1961–74	11.4	2.0	5.5	4.0
1975–84	3.0	−0.2	1.1	2.1
Basic metal industries				
1961–74	9.0	2.2	3.7	3.6
1975–84	6.1	−0.5	0.5	6.1
Machinery and engineering				
1961–74	6.9	1.6	1.6	3.8
1975–84	4.5	1.0	1.1	3.3
Total manufacturing				
1961–74	6.2	0.7	2.2	3.3
1975–84	3.1	−0.7	0.9	3.0

*) The change in total factor productivity ($\hat{T}_q$) has been calculated as follows:

$$\hat{T}_q = \hat{Q} - \Sigma w_i \hat{X}_i,$$

where $\hat{X}_i$ (=K,L) is the relative change of labour input and capital input, the weights (w_i) are the so-called Divisia-weights, i.e. value added shares of remunerations to labour and capital respectively. Labour input has been measured as hours worked and capital input as volume of net capital stock.

Regardless of their apparent simplicity there are several theoretical and index number problems related to these calculations, e.g., how the weights w_i should be determined, how intermediate inputs should be taken into account and what conditions the production functions have to satisfy in order to make the definition of TFP sensible. Many of these problems are not satisfactorily solved in economic analysis which has to be kept in mind when interpreting the results of empirical calculations.

[1]) See Wyatt (1983), Vuori (1985) and Ylä-Anttila (1986).

grown very rapidly during the last ten years. The volume of R&D expenditure has undergone an almost 2.5-fold increase since the mid-70s, whereas fixed investment has remained more or less at its 1975 level (Figure IV:6). The level of industrial R&D expenditure is, however, still quite low by international standards, corresponding to about 15 % of industrial fixed capital spending or 3 % of the value added.

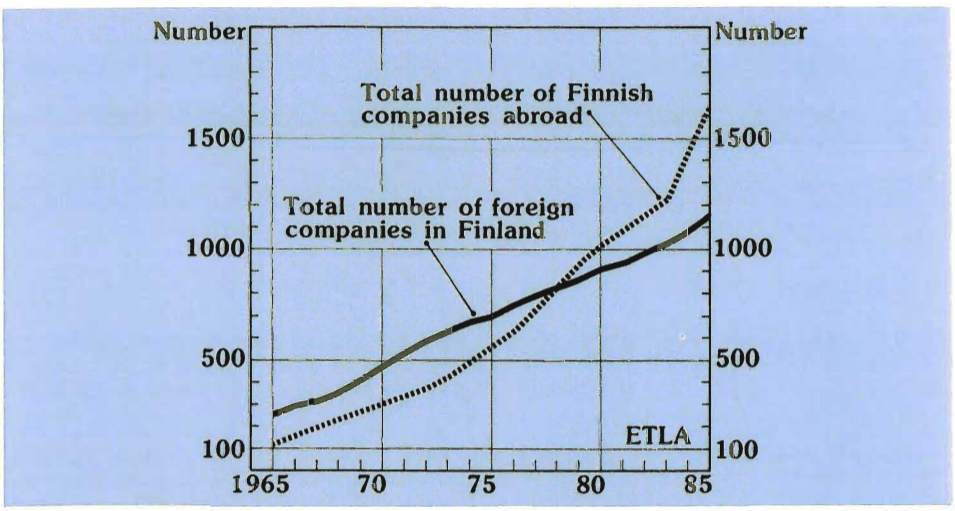
3.1.2 Rapid Increase in the Internationalization of Business Enterprises

The share of exports in total demand has during the last decades been increasing steadily in Finland: from about 15 % at the beginning of the 1950s it has risen to about 25 % today. The share of exports in industrial production has grown to almost 40 per cent.

In the late 1970s and early 1980s Finnish firms have entered a new phase in their internationalisation process. The number of Finnish-owned firms abroad has risen by 60 per cent since 1980 and in 1985 the volume of foreign direct investment of business sector was about 3-fold compared to the 1980 figure.

About one quarter of Finland's total exports are executed via foreign subsidiaries, and this share is even bigger for exports to e.g. United Kingdom, Federal Republic of Germany and the United States. The international operations are very much concentrated in large firms, and in 1984 some 50 per cent of the turnover of 70 largest Finnish-owned foreign subsidiaries was produced in those owned by the 10 biggest Finnish manufacturing companies. In turnover terms about one quarter

Figure IV:7. Total number of Finnish companies abroad and foreign companies in Finland [1])



[1]) Including up to 1983 companies in which direct Finnish/foreign ownership accounts for more than 20 per cent. Figures for 1984–85 include companies in which the corresponding share is more than 10 per cent.
Source: Bank of Finland.

of the foreign subsidiaries are in Sweden. Both intra-Nordic trade and the locating production and marketing units in the other Nordic countries have long traditions. This is facilitated i.a. by a common labour market of these countries. In recent years many acquisitions of companies in the same product line in other Nordic countries have taken place in each country. As a matter of fact, there is an active phase of branch rationalisation going on on the Nordic scene. Firms are striving for economies of scale not only in production but also in international marketing, financing and R&D activity.

Compared with many other industrial countries the internationalization process of Finnish companies started rather late and despite the rapid changes during the last 5–10 years the importance of firms' international operations is still much smaller in Finland than, for example, in Sweden. Foreign subsidiaries of Finnish industrial firms employ about 40 000–45 000 persons abroad, i.e., less than 10 % of total industrial employment in the home country, whereas the corresponding share for Swedish industry is around 40 %.

Both the increased foreign operations and the expansion of industrial R&D activities have added to the dominance of large multibranch corporations in Finnish manufacturing (cf. Oxelheim 1984). The ten biggest manufacturing companies account today for more than one third of total Finnish exports and about half of total industrial R&D outlay (Table IV:4). However, there are several newly established internationally oriented and rapidly growing small and medium-size high-tech companies which seems to lend some evidence on the increasing role of emerging companies (see Special Study 1).

Table IV:4. Ten biggest manufacturing companies in Finland: Value added, exports and R&D expenditure, 1985

Company	Industry/ main products	Value added		Exports		R&D expenditure	
		Mill. FIM	% of total manufac-turing	Mill. FIM	% of total manufac-turing	Mill. FIM	% of total manufac-turing
Nokia	Electronics	3 770	4.7	3 145	3.3	360	15.6
Enso-Gutzeit	Forest industries	2 880	3.6	4 230	4.4	28	1.2
Wärtsilä	Machinery, ship-building	2 700	3.3	4 135	4.3	145	6.3
Rauma-Repola	Engineering, forest industries	2 520	3.1	4 500	4.7	65	2.8
Neste	Petroleum refining, chemicals	2 845	3.1	4 515	4.7	78	3.4
Valmet	Manchinery, ship-building	2 405	2.8	2 330	2.4	130	5.6
Kymi-Strömberg	Electric machinery, forest industries	2 190	2.7	2 340	2.4	30	1.3
Outokumpu	Basic metals	1 985	2.5	3 810	4.0	130	5.6
Ahlström	Forest industries, machinery	1 855	2.3	2 195	2.3	52	2.2
Kemira	Chemicals	1 755	2.2	1 895	2.0	108	4.7
Total		24 545	30.3	33 095	34.5	1 126	48.7

Source: Talouselämä (Finnish Economic weekly) 20/1986.

3.1.3 A New Phase in the Restructuring of Industry

It is evident that many Finnish manufacturing industries and firms were able to benefit substantially from the "technology gap" up to the late 1970s or the early 1980s. In a small country with a well-educated labour force it has been advantageous to apply "second-fast" strategy and adopt advanced foreign technologies as far as possible.[1]) Today, when many industries have approached the technological frontier the potential for productivity improvements has diminished. Technological progress has to be based to a greater extent on domestic R&D activity and creation of new technical combinations. The rapid increase in industrial R&D investment in recent years indicates that this kind of restructuring process is going on. Still, the question remains whether this restructuring has been extensive enough to generate a new competitive edge required by changing world market conditions. Emphasizing the importance of internal R&D activity does not mean that the diffusion of technology has become less important. On the contrary, for advanced but small economies and firms facilitating the diffusion of new technical applications on a broader basis is often a prerequisite for staying at the frontier in the narrow segments, where particular domestic knowhow has been accumulated.

As stated above Finnish industry has so far been able to avoid major structural crises, experienced in most other industrial countries. However, some industries have within a few years moved to a situation, where cutting production or closing down of unprofitable establishments has taken place to an extent not previously experienced during the post war period. This holds true, e.g., for the wood industry, shipyards and the clothing and footwear industries. In the case of wood industry, mainly sawmills, the overcapacity problem has been evident for several years and situation has aggravated due to high raw-material costs, weakened domestic demand caused by decreasing construction activity, and due to increased supply of timber products on international markets by low cost producers. The problems of shipyards and textile, clothing and footwear industries are related to diminishing exports to the Soviet Union as well as to increases in labour costs. There are, however, large profitability variations across firms in all of the industries mentioned above, which means that restructuring will also take place within the industries.[2])

3.2 Financial System in Transition

Structural changes in the Finnish economy have also appeared in the financial system. The role of the credit rationing and administratively set interest rates that for decades characterised the financial intermediation has during the recent years rapidly disappeared, to give space for market forces. The factors behind these changes are similar to those behind the financial innovation process that during the last few years has occured in most industrial countries. Especially the internationalisation of banking and business has made firms more careful in their planning of financial operations in the more uncertain and volatile economic environment that has followed the oil crises. Accordingly, the unexploited profit

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[1]) Cf. Vartia and Vuori (1986).
[2]) Structural changes and their determinants within industries has been analysed, e.g., in Førsund et.al. (1985) and in Summa (1986).

opportunities that existed in the highly regulated Finnish monetary system were made use of.

The recent changes have mainly concerned the intermediation of short-term funds and have led to the emergence of a short-term money market, which in late the 1970s started as a so called "grey market" between firms. Altough the expansion of this market has been rapid, it is still rather undeveloped, consisting mainly of special-terms bank deposits. For the time being, the volume of the financial instruments handled in the market is far too small to create a properly functioning secondary market.

The banks have had, and still have, a central position in the intermediation of both short-term and long-term financing. The minor role of the securities market in the financial intermediation is at least partly due to the tax exemption of the bank deposits of households and the generous tax provisions which the deductibility of interest cost means for both households and firms. Pressures for changes have, however, increased also in the capital market, because the high real interest rate as well as the changing structure of industrial investment towards intangible capital spending increase demand for new risk capital.

The authorities have not been very active in the deregulation and internationalisation process of financial markets. Rather, they have adopted the role of an active observer who has reacted to changes in the markets, which particularly in the last two-three years have been very rapid.

Despite the recent rapid rate of change, internationalisation and deregulation of financial markets have lagged a step behind the corresponding processes of goods market deregulation and internationalisation of manufacturing firms.

The changes in the Nordic financial systems are dealt with in more detail in Special Study 2.

3.3 Has the Inflation-proneness of the Finnish Economy Disappeared?

The average rate of inflation during the post-war period has been faster in Finland than in its most important competitor countries. The proneness to inflation has often been regarded as a structural feature of the economy, related to, e.g., large variations in the exports. A large part of Finnish exports, today about 35 %, consists of various forest products which typically have shown larger volume and price fluctuations in the world market than other industrial products. Hence, the variations in output growth rate, in the inflation rate and in competitive position have in Finland been greater than in most other industrial countries. The impulses from large export fluctuations have from time to time led to "overheating" phenomena and to the acceleration of domestic inflation. The subsequent deterioration of price competitiveness has often been corrected by means of devaluation, which has created a kind of inflation-devaluation cycle – and the corresponding income distribution cycle – in the economy.

The situation has in recent years changed in some respects. The share of forest products in exports has gradually decreased, from about 70 % in the early 1960s to 35 % in 1985 (see Figure IV:10). A clear shift of emphasis in the economic policy has taken place, too. The policy line adopted in the late 1970s aimed at fostering structural change and stimulating investment in the open sector of the

economy in order to strenghten the competitive position in the long run. Especially in recent years the bringing down inflation has been regarded as the main objective of macro policies. In addition, competition policy has become more active, with a view to promoting competitive forces especially in the industries sheltered from foreign competition.

So it can be said that, in a certain sense, the situation has improved. In the early years of this decade the growth rate of the Finnish economy exceeded other countries' average growth rate, and this was partly conducive to a faster rate of rise in costs in Finland than elsewhere. However, the rate of rise in costs exceeded competitor countries' corresponding rates by less than it generally did in the 1960s and 1970s, despite the fact that in those decades the growth rate of the Finnish economy did not differ, on average, from other countries' growth rates. This change may have been partly due to the fact that labour productivity has risen relatively rapidly in Finland. Labour costs per unit of output have thus risen by less than the movements in nominal prices and costs would in themselves suggest.

The slowing down of inflation has partly been due to purposeful economic policies and, in part, to lucky external developments. It would seem, however, that the Finnish economy still has a somewhat greater proneness to inflation than most industrial countries, which provides a challenge to economic policy also for the latter part of this decade. In any case, inflation is expected to stay slow during the next couple of years but not to disappear totally or turn into deflation. Although changes in the average price level are expected to be slight, changes in relative prices may be large.

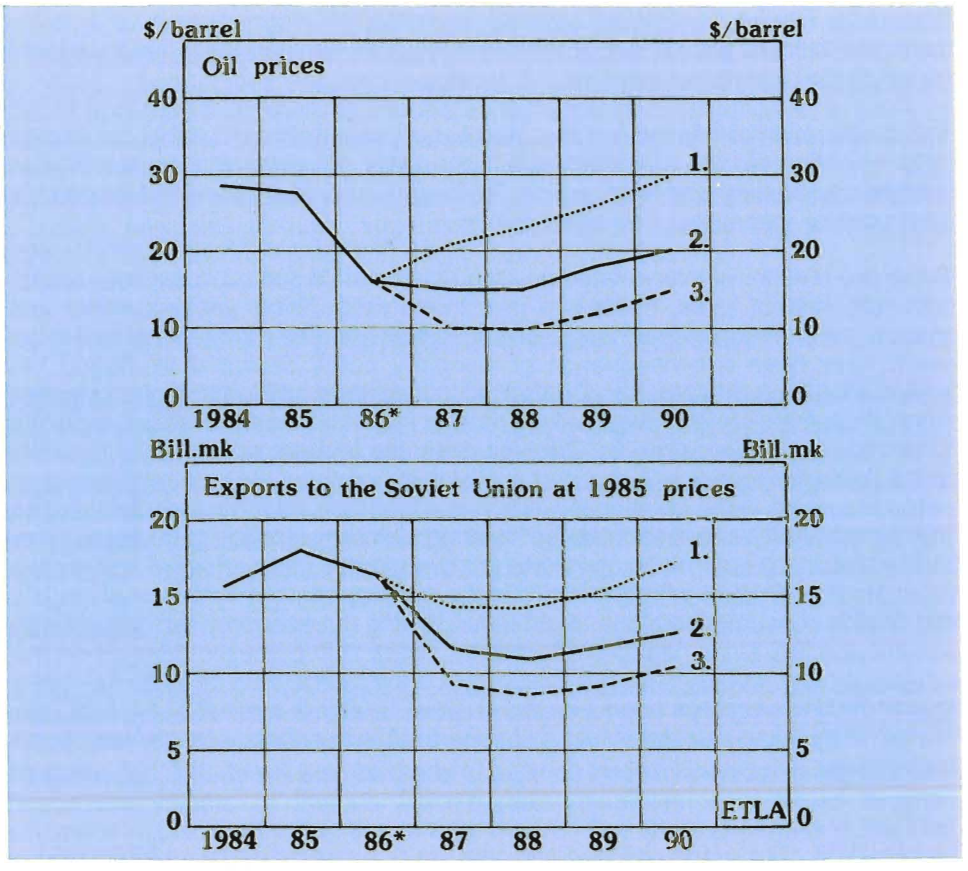
4. Macroeconomic Outlook to 1990

4.1 Recent Developments – Main Policy Challenges

The past favourable performance of an economy is not a guarantee of similar developments in the future, especially because the good results of the past cannot solely be attributed to conscious skilful management of the economy. After several years of internationally high growth rates the performance of the Finnish economy is likely to weaken during the latter half of the 1980s, despite the recovery in the main export markets. The growth of total output is forecast to be about 2.5 per cent p.a. in 1985–90 compared with about 3 per cent during the preceding five-year period. Since growth of the international economy is forecast to strenghten because of the drop in oil prices, output growth in Finland will be below the average of other European countries at least during the next couple of years.

The main reasons for this are the deteriorating prospects for Soviet trade. As mentioned above this trade is based on bilateral arrangements according to which the trade has to be balanced within certain limits agreed on by both parties. Since the main part (about 80 %) of Finland's merchandise imports from the Soviet Union is crude oil, the fall in oil prices drastically reduces the value of imports and, as a consequence, Finnish exports to Soviet markets. The share of exports to these markets in total Finnish exports in 1986 was about 20 % and in some industries like clothing and footwear and shipbuilding it was well above 50 %. In short, if oil prices stayed for a longer period at their current low levels, exports to the Soviet Union would decline correspondingly by 25–35 per cent from their current level. How this adjustment will take place and what kinds of instruments

Figure IV:8. The price of crude oil and Finland's exports to Soviet Union: Three scenarios [1])



[1]) The foreign trade prospects presented in this section are based on scenario 2, where the oil price assumption equals to that in Chapter II.
Source: Alho et. al. (1987).

will be available to control this adjustment are among the questions crucial to the course of the economy over the coming five years. In any case, the volume of exports to the Soviet Union is likely to decrease by about 20 per cent in 1987.

If oil prices will start to rise again in the late 1980s, the optimal strategy would be to let the trade surplus increase temporarily and try to even out the effects of the drop in exports in the course of several years by special financing arrangements. If, on the other hand, oil prices stayed at their current levels also in the long run, an adjustment process would urgently be needed especially in industries highly specialised in Eastern trade. However, despite the short-run contractive effects of oil price drop on the economy via bilateral trade, the improvement in terms of trade will, of course, have a positive impact on the growth potential in the longer-run.

In spite of the adjustment problems of exports and the weak price competitiveness of industry, the economic situation in Finland is good in certain respects. Inflation has slowed down, the external balance is good and the public sector's debt is not particularly big. The most notable immediate problem is formed by decelerating

economic growth and the increase in unemployment due to this. Economic policies have already for a long time rested on the view, however, that the elimination of unemployment cannot exclusively be based on countercyclical measures. The best policy is to relieve the immediate harm done by unemployment and to try to ensure longer-term prerequisites for economic growth, so that no large-scale unemployment would develop.

The deceleration of inflation has for a number of years been, and still is, the explicit main objective of both monetary and fiscal policy. Monetary policy has tried to prevent overheating and fiscal policy, for its part, to create conditions favourable for moderate incomes policy agreements.

There is a number of inter-related policy problems to be solved in the near future: high real interest rates, decline in investment ratio, rising unemployment and gradual deterioration of international competitiveness. The high real interest rates which have been a consequence of monetary policy designed to defend the foreign exchange reserve, have restrained investments and led to their postponement. Placements in the short money market have continued to offer a lucrative alternative to real investments. Bringing down the interest rates will be possible only if domestic costs can be held at a level that maintains the competitiveness of export industries in the traditional western markets. Special measures designed to improve competitiveness such as the lowering of energy taxation of business firms and the business income taxation reform have already been effected. Alternative expansionary policies which would directly support employment through public and private consumption alone might mean driving the economy out of the frying pan into the fire, since negative effect of an increase in domestic demand on the current account would make the lowering of the interest rates difficult. As stated above, Finland's present good external balance is largely a result of the fact that, through stimulating investment, it has been possible to enhance longer-run export possibilities.

Table IV:5. Balance of resources and expenditure, 1970–90

	1985* bill. FIM	Average annual changes in volume, %			
		1970→75	1975→80	1980→85	1985→90
GDP	334.9	4.1	3.2	2.7	2.5
Imports	995.0	4.7	3.5	1.8	3
Total resources	429.9	4.2	3.3	2.5	2.5
Exports	98.7	0.7	10.9	2.9	2.5
Investment	78.3	5.6	−1.9	2.6	2
– private	67.9	6.0	−2.3	2.4	2
– public	10.4	3.2	1.0	3.4	1.5
Consumption	247.8	4.6	2.6	3.1	3
– private	180.2	4.2	2.0	2.9	3
– public	67.6	6.1	4.4	3.8	2.5
Increase in stocks	0.9	..	..	..	..
Total demand	429.9	4.2	3.3	2.5	2.5

Sources: National Accounts and ETLA (1986).

The next few years will thus be a period of significant adjustment problems for the Finnish economy. Several industrial countries have already lived through a similar kind of adjustment period, often accompanied by large-scale unemployment. However, structural changes in the world economy should not be seen merely as a threat but also as opportunities which Finnish firms could utilize. Yet the utilization of these opportunities requires large-scale investments. These investments should not relate exclusively to physical capital equipment but also, i.a., to R&D, to training, and to the development of marketing and organization. Efforts should be made, by means of economic policies to promote adjustment through improving the conditions for research on the one hand and, on the other hand, to relieve the structural problems through, i.a., taking increasingly quickly into account the connections of technological and social change with training.

4.2 Foreign trade: Changing Patterns in Export Orientation

The volume growth of Finland's merchandise exports is predicted to be less than that in the world market. That is mainly due to the weak prospects of Soviet trade. In the period 1986–90 the volume of exports to Eastern countries is expected to decline by an average of 8 % p.a. The largest drop will take place in 1987 when the volume of exports to the Soviet Union is likely to diminish by some 20 %. It is worth emphasising that the forecast for the East trade is a calculation based on the assumption regarding oil prices presented in Chapter II. If the course of oil prices will deviate from that assumption, the East trade prospects will change accordingly.

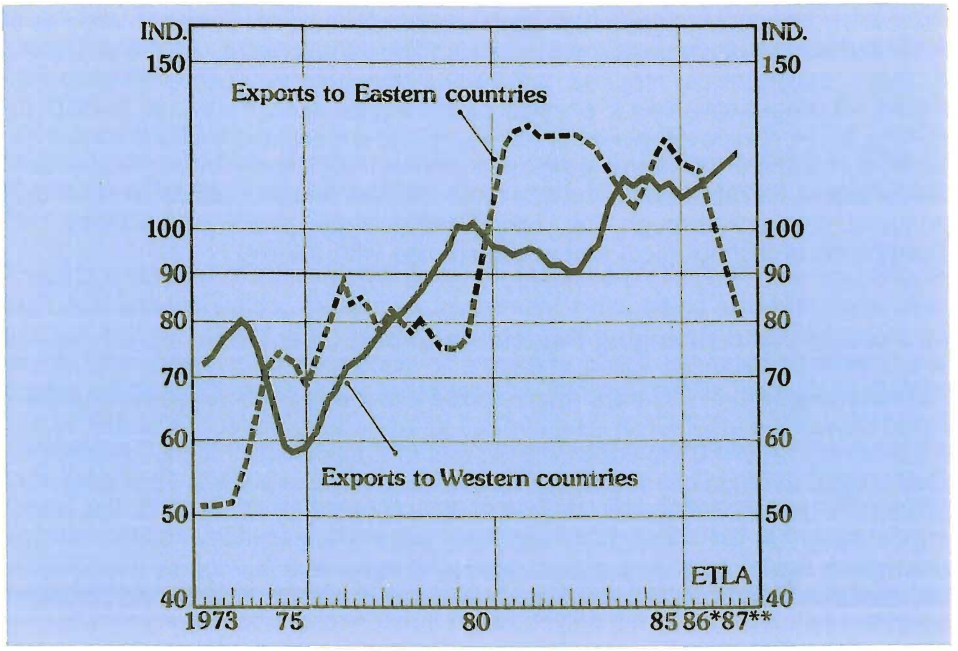
In the calculations on East trade prospects it has been assumed that balance in the clearing account for Soviet trade will be returned to a level below its credit limit by the end of 1990, whereas in the intervening years the present credit limits will be exceeded. Efforts will also be made to balance trade by increasing imports, and hence the volume of imports from socialist countries is expected to grow somewhat more rapidly than that of total imports. The share of exports to the East will decline from 20 % in 1986 to some 13–15 % in 1990 on the basis of the above scenario.

Table IV:6. Merchandise exports

Industry	1985 bill. FIM	Average annual change in volume, %			
		1970→75	1975→80	1980→85	1985→90
Wood industry	6.7	−7.5	16.4	−5.7	2
Paper industry	25.0	−4.7	10.7	3.3	3.5
Metal and engineering	30.7	7.3	6.4	7.1	3.5
Other industry	21.6	0.9	13.3	1.3	1
Total merchandise exports	84.0	−0.5	10.7	2.8	3
– to Western countries	63.8	−1.8	11.0	2.3	5.5
– to Eastern countries	20.2	6.3	6.3	5.0	−8

Sources: Foreign Trade Monthly Bulletin and ETLA (1986).

Figure IV:9. Volume of merchandise exports to Western and Eastern countries (1980=100)[1])



[1]) Four-quarter moving averages.

Sources: Foreign Trade Monthly Bulletin and ETLA (1986).

Figure IV:10. Merchandise exports by industries, % share in total merchandise exports

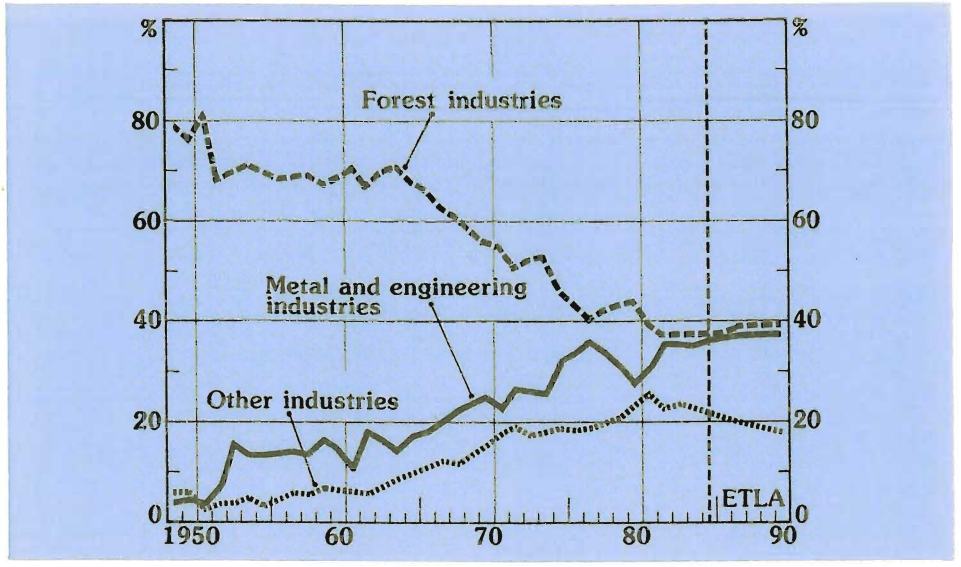


Table IV:7. Merchandise imports

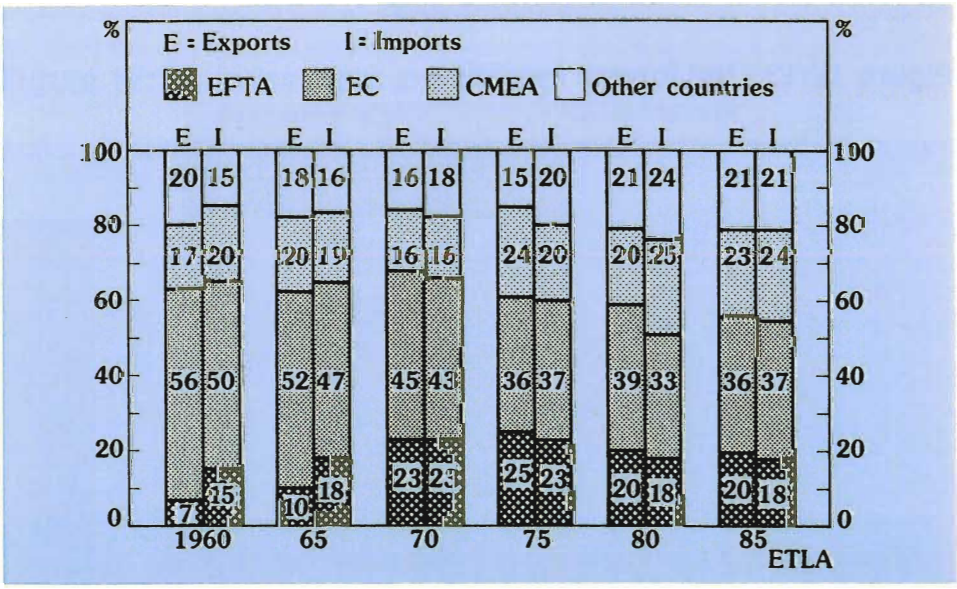
Commodity group	1985 bill. FIM	Average annual change in volume, %			
		1970→75	1975→80	1980→85	1985→90
Raw materials, etc.	50.8	3.1	4.2	−0.3	2
Fuels and lubricants	5.5	3.3	0	0.7	2
Investment goods	11.7	9.4	−3.8	1.7	4.5
Consumer goods	13.0	7.6	3.8	4.2	5
Total merchandise imports	81.4	4.6	2.3	0.8	3

Sources: Foreign Trade Monthly Bulletin and ETLA (1986).

Decreasing exports to the East will be compensated for to large extent by increasing exports to Western markets. Exports of engineering and metal industry products to the West will grow not only because of recovering demand but also as a result of the non-price competitiveness created through investment and product development. Exports of paper industry products will also increase slightly more rapidly than during the first half of the 1980s.

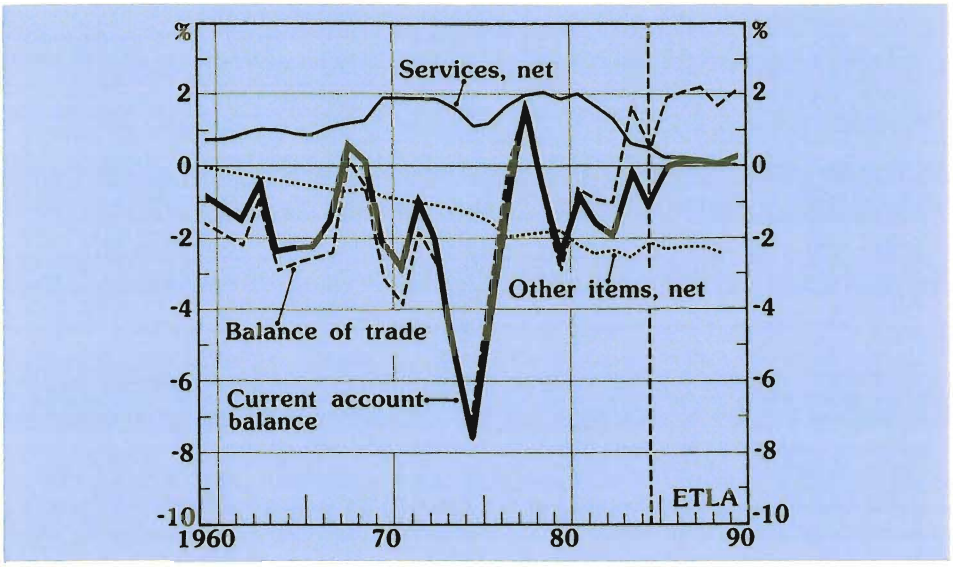
The price competitiveness of Finnish industry, as measured in terms of relative unit labour costs in same currency, is currently quite low by historical standards, which makes it difficult to gain market shares in the traditional European export markets. The export potential of the country still largely consists of products whose

Figure IV:11. Foreign trade by countries



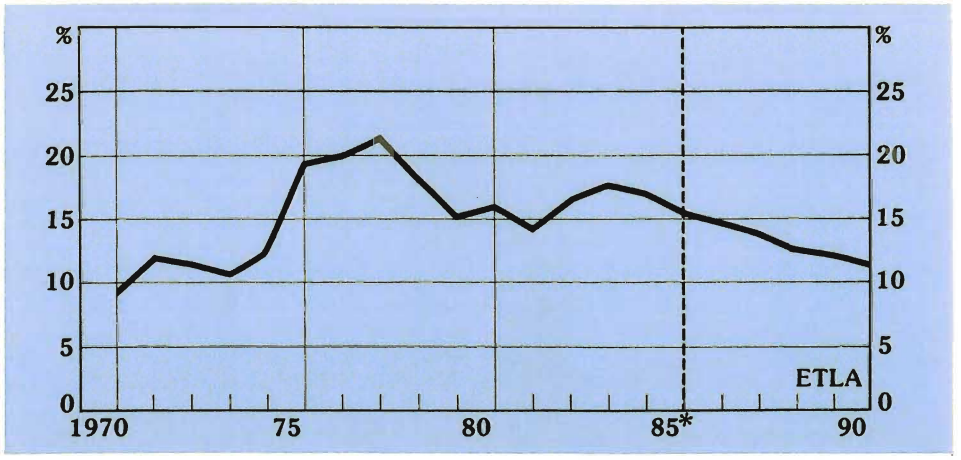
Source: Foreign Trade Monthly Bulletin.

Figure IV:12. Current account surplus by components
Per cent of GDP



Source: National Accounts.

Figure IV:13. Net foreign liabilities
Per cent of GDP



Sources: Bank of Finland Monthly Bulletin and ETLA (1986).

markets are growing rather slowly in the long run and whose price elasticity of demand is rather high. For example, the share of high-technology products, the markets for which are growing very rapidly, is still quite small in Finnish exports.

The volume of merchandise imports is expected to grow a bit faster than total output growth, i.e. by about 3 % p.a. on average in 1986–90. The fastest growing items are consumer goods and investment goods.

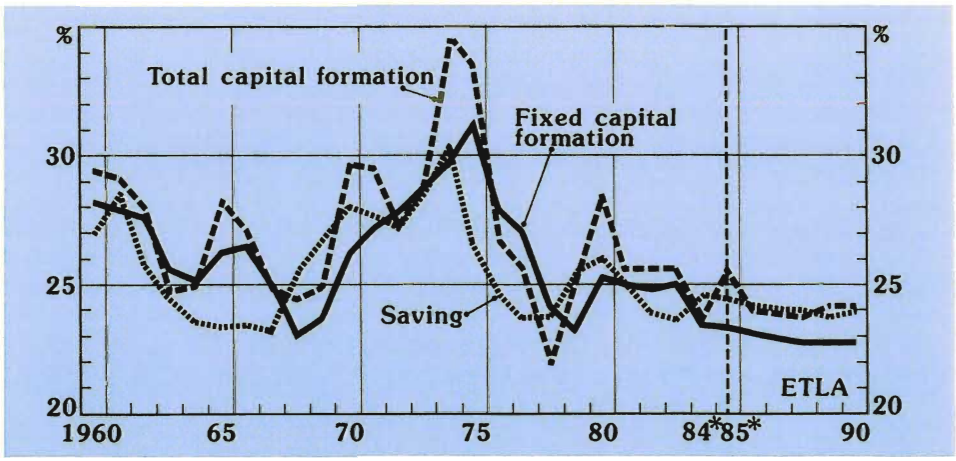
The current account was only slightly in deficit during the first half of the 1980s. For the latter part of the decade even a small improvement is expected and current account is predicted to be more or less in balance.

Net foreign debt in relation to GDP has gradually decreased since 1983 and the trend is likely to continue. By the end of this decade it is predicted to be about 12 % of GDP compared with about 16 % in 1985.

4.3 Investment: Slight Increase in Fixed Capital Expenditure – Rapid Growth in Intangible Investment

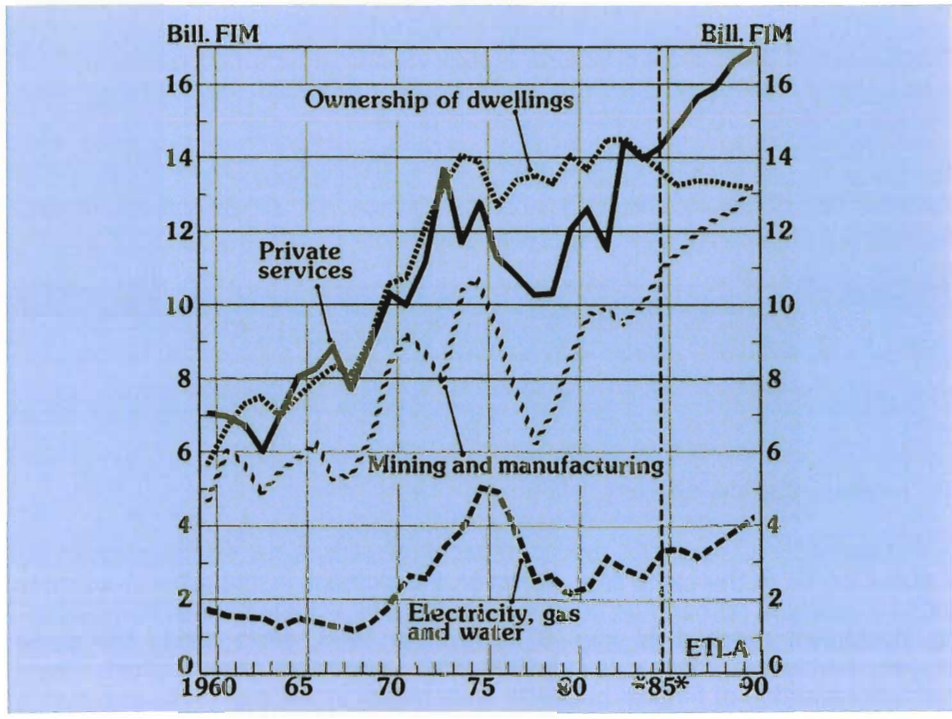
During the 1980s fixed capital formation has grown only slightly, at an annual rate of about 2.5 %. At the same time, however, the increase in intangible investment and in investment abroad has been substantial. The volume of fixed manufacturing investment reached its mid-1970s level in 1985, while during the same ten-year period the volume of industrial R&D investment grew 2.5-fold. Rapid internationalisation of Finnish business firms began in the late 1970s and during the last few years manufacturing firms' foreign investment in relation to total fixed investment has been about 10–20 %.

Figure IV:14. Investment and saving
Per cent of GDP



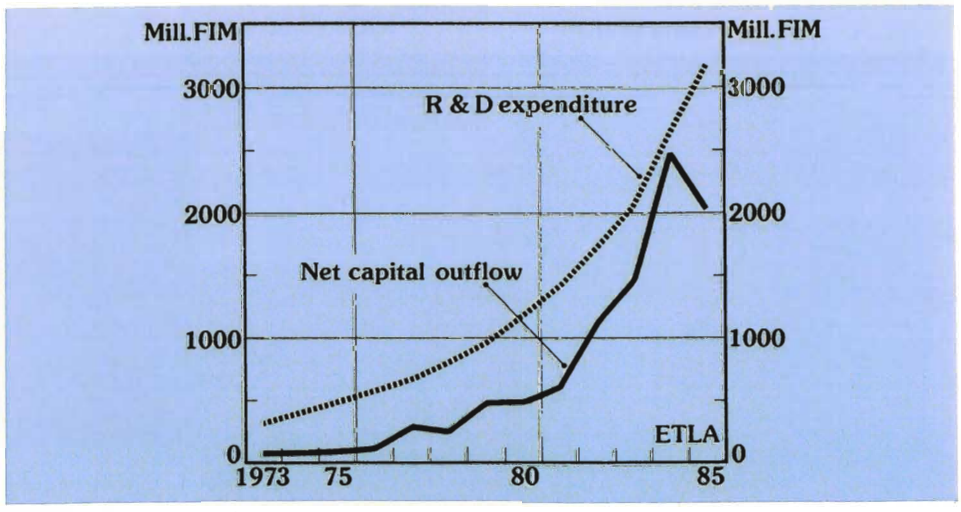
Sources: National Accounts and ETLA (1986).

Figure IV:15. Volume of private fixed capital formation by industries at 1980 prices



Source: National Accounts and ETLA (1986).

Figure IV:16. R&D expenditure in business enterprise sector and net direct investment abroad



Sources: Research Activity (Central Statistical Office) and Bank of Finland.

Table IV:8. Gross fixed capital formation by industries

Industry	1985* mill. FIM	1985* % shares at 1980 prices	Annual change in volume, %			
			1970→75	1975→80	1980→85	1985→90
Agriculture and forestry	6 266	9.2	4.1	2.4	−0.6	−1.5
Mining and manufacturing	13 374	22.4	4.8	− 4.2	4.5	4
Electricity, gas, and water	4 047	6.1	22.3	−15.1	5.6	5
Construction	1 757	2.5	1.4	− 1.9	4.3	0
Ownership of dwellings	20 910	28.5	5.4	2.0	−0.5	−0.5
Service industries	21 549	31.3	4.5	− 1.3	4.5	3.5
Private fixed capital formation	67 903	100	6.0	− 2.3	2.5	2
Government fixed capital formation	10 434		3.2	1.0	3.0	1.5
Gross fixed capital formation	78 337		5.6	− 1.9	2.6	2

Sources: National Accounts and ETLA (1986).

During the latter half of the 1980s, too, intangible investment is expected to increase more than investment in machinery and construction. Especially the share of R&D in total capital expenditure is likely to grow further. This trend will be reinforced by the fact that, as the capital market develops, various kinds of risk financing possibilities are becoming increasingly general. The internationalisation of business firms continues. The ratio of manufacturing investment to manufacturing output will slightly rise, at the same time as the share of machinery and equipment in manufacturing investment will continue to increase. The shortening working hours agreed upon in wage negotiations in Spring 1986 may increase the need for rationalisation investment.

The current high level of real interest rates will restrict investment activity at least in the near future. As it is likely that real interest rates will remain high for some time, for reasons indicated in Section 41, investments in financial assets will continually be preferred to some extent to real capital expenditure.

4.4 Private Consumption: The Fastest Growing Demand Component

Growth in private consumption expenditure has been very stable during the past five-year period, a bit less than 3 % annually with only slight cyclical variations. This has been partly due to tax reforms and changes in income transfers to households, which have clearly balanced fluctuations in real disposable income. Since the share of private consumption is about 40 % of total demand, the stable consumption growth has considerably contributed to the balanced growth of the economy.

Owing, e.g., to recent reforms in taxation the growth of real disposable income of households will further accelerate during the second half of this decade and is expected to be on an average about 3 % p.a. In accordance with this the real

Table IV:9. Private consumption expenditure and real disposable income of households

Consumption item	1985* Bill. FIM	Average annual change in volume, %			
		1970→75	1975→80	1980→85	1985→90
Food	45.6	2.8	0.6	0.9	1.5
Clothing	9.0	−0.1	3.2	0.3	2
Housing	31.5	5.3	4.3	2.9	2.5
Durables	11.7	5.7	1.6	3.0	3
Personal care	4.7	2.9	1.7	1.8	1.5
Transport	29.9	6.2	0.2	3.6	3.5
Recreation	15.0	7.5	5.0	3.8	3.5
Other goods and services	19.3	4.8	2.0	3.5	3.5
Other consumption[2])	12.8	0.5	2.5	8.2	5.5
Private consumption	180.2	4.2	2.0	2.9	3
Real disposable income of households[1])		4.8	1.9	2.6	3

[1]) Disposable income of households deflated by consumption prices.
[2]) Households' purchases from public sector and non-profit institutions, consumption expenditure of non-profit institutions and households' consumption abroad, net.

Sources: National Accounts and ETLA (1986).

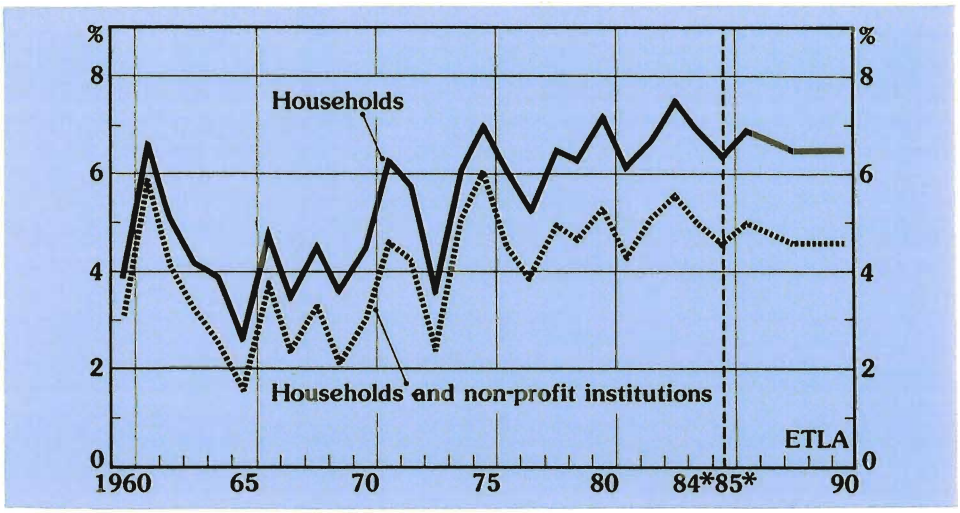
growth of private consumption expenditure is predicted to be the fastest growing demand component in the economy in 1986–90, increasing at an annual average rate of more than 3 %. The proportion of households' spending accounted for by transport, recreation and various services will further increase. The shares of dwelling and household equipment in consumption are likely to stay almost unchanged, whereas those of basic foodstuffs, clothing and footwear will further slightly decrease.

During the past two decades households' savings ratio has increased from 2 to about 5 %. Saving for housing purposes has up to 1980s contributed significantly to the increase in the savings ratio. During the next five years the savings ratio is estimated to stay approximately at its current level. Households' housing investment will diminish, but, on the other hand, investment in securities and other financial assets will increase, because of high interest rates, new tax provisions for households' capital income and the development of capital markets.

4.5 Public Sector: Deficits under Control?

In the 1970s public expenditure grew sharply, as a result of, e.g., various social and schooling system reforms. The financial position of the public sector deteriorated substantially in the late 1970s and early 1980s, when economic growth slowed down and tax burden was not allowed to rise in accordance with the government's reflationary package. Particularly the central government's indebt-

Figure IV:17. Households' saving ratio, %

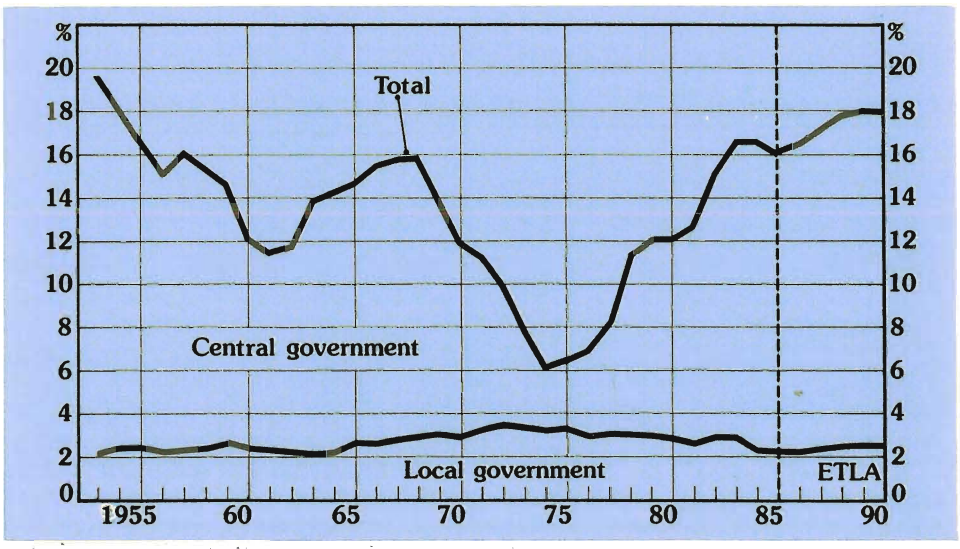


Sources: National Accounts and ETLA (1986).

edness rose rapidly until 1983. Since then the ratio of public debt to GDP has stayed at about 16 %, a figure not high by international standards. In 1984–85 public debt increased only slowly because of relatively rapid economic growth and tightening of taxation.

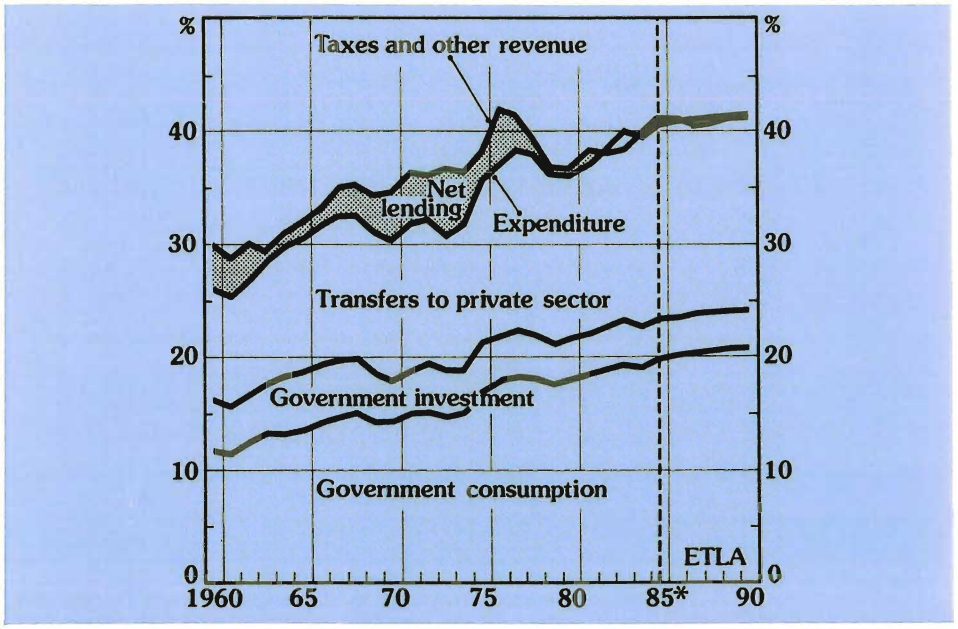
Figure IV:18. Public debt

Per cent of GDP



Sources: Bulletin og Statistics and ETLA (1986).

Figure IV:19. Revenue and expenditure of general government
Per cent of GDP



Sources: National Accounts and ETLA (1986).

Table IV:10. Taxes and income transfers, % of GDP

Income transfer item	1960	1970	1980	1985*	1990**
1. Direct taxes	10.1	13.1	14.5	16.5	16.3
2. Social security contributions[1])	3.6	5.7	6.3	7.2	7.2
3. Indirect taxes	13.2	13.3	14.1	14.2	14.3
4. Other current transfers	0.6	0.5	0.7	0.9	0.8
5. Total current transfers from private sector (1+2+3+4)	27.4	32.6	35.6	38.7	38.6
6. Current transfers to households	6.2	8.3	10.2	11.4	11.3
7. Subsidies	2.8	3.0	3.9	3.7	3.5
8. Current transfers to private sector (6+7)	9.0	11.3	14.1	15.1	14.7
9. Net current transfers to public sector (5−8)	18.4	21.3	21.5	23.6	23.9
Taxes per GDP[2])	26.3	31.1	33.7	36.6	36.5

[1]) Incl. imputed welfare contributions.
[2]) Incl. taxes, compulsory social security contributions to general government and compulsory fees and penalties.
Sources: National Accounts and ETLA (1986).

Public deficit (net lending to other sectors) was 0.5 % and 1.5 % of GDP in 1982 and 1983 respectively, but turned into a surplus in 1984–85 as a result of increasing of taxation. Surpluses turned into deficits again in 1986, which will persist throughout the 1986–90 period, since new tax reforms will decrease tax incomes of the central government. If the real growth of public expenditure can be restricted to about 2 % p.a. in the second half of the decade, which has been set as a target by the Ministry of Finance, the deficits could be kept at reasonably low levels.

The problem of the growing indebtedness of central government could, however, be accentuated within a few years owing to a slowing-down in economic growth and to current economic policies, in which preventing the tax burden from rising has been kept as one of the central targets.

It seems unlikely that expansionary economic policies similar to those of the late 1970s and early 1980s can be continued. So far it has been possible to postpone the aggravation of problems in central government finances, because of favourable economic developments and the rather low level of public debt. In the future, however, restraining the growth of public debt will clearly limit the scope for economic policies.

4.6 Production: Structural Changes in Manufacturing – Rapid Expansion in Services

The most marked changes in the production structure of the Finnish economy took place in the 1950s and 1960s, when the share of primary production in total GDP decreased faster than perhaps in any other European country. During the 1970s it fell under 10 % and has further slightly diminished thereafter. The share of manufacturing has stayed relatively stable, around 25 %, during the 1970s and 1980s, at the same time as the corresponding share has decreased in most other OECD countries, especially in other Nordic countries. The service sector today accounts for about 55 % of total output, a proportion which is about the same as, e.g., in Germany or Japan, but clearly less than in the United States or Sweden. About two thirds of service output is produced in the private service sector, a figure clearly exceeding the average for the Nordic countries.

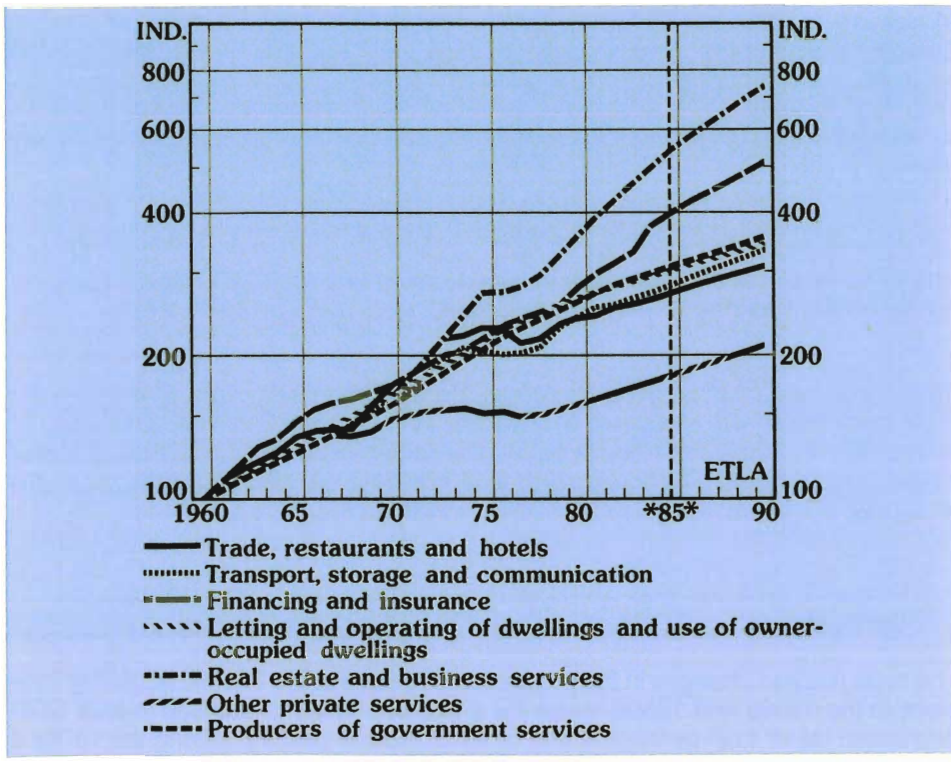
Output growth in the service sector is predicted to exceed the growth of GDP also during the coming five-year period. Among the fastest growing service industries are business services, banking and finance and communication, the average annual growth rates for which vary between 5 and 10 %.

However, there are also 'crisis industries' in the service sector. An example is the shipping industry, which is experiencing a difficult restructuring process due to, e.g., high labour costs. A number of Finnish vessels has in recent years been sold abroad and this process is likely to continue.

Exports of services account for about 15 % of total exports. In the 1970s and early 1980s especially exports of engineering and consulting services grew quite rapidly, but there has been a slow-down during the last couple of years. It is not likely that service exports will pick up significantly during the next five years, but in the long run the growth potential is evident.

Growth projections of GDP by industries are presented in Tables IV:11 and IV:12.

Figure IV:20. Volume of GDP in service industries (1960=100)



Sources: National Accounts and ETLA (1986).

4.7 Employment: Unemployment Rate Will Rise

Since the late 1970s employment in the Finnish economy has steadily increased, and during the 1980s over 100 000 new jobs have been created. This has not, however, quite offset the rapidly increasing supply of labour which has taken place mainly as a result of rising participation rates. The unemployment rate has risen from less than 5 % in 1980 to about 7 % in 1986.

In the second half of the 1980s both the supply of and the demand for labour will grow more slowly than during the last 5–7 years. However, large structural changes in the demand side and in the labour market as a whole will occur.

The unemployment rate has stayed around 6 % for some years, but it is likely to increase during the second half of the 1980s. At the same time there will be, however, lack of skilled labour force in many regions and industries, especially in engineering and ADP-services. The mismatch problem in the Finnish labour market has not, so far, been as severe as in many other industrial countries, but it will probably worsen towards the end of the 1980s. Regional mobility of the labour force has declined during recent years owing to demographic as well as both social and economic reasons. The share of the younger mobil cohorts in the labour force has decreased, the female participation rates have risen and made the

Table IV:11. GDP by kind of economic activity

Activity	1985* mill. FIM	1985* % shares at 1980 prices	Annual change in volume, %			
			1970→75	1975→80	1980→85	1985→90
Agriculture	13 190	4.4	0.8	2.3	0.8	−2
Forestry	10 977	3.7	−5.9	7.4	−2.2	1
Industry	85 794	32.1	3.8	5.0	3.1	3
Construction	23 138	7.3	4.3	−0.7	1.0	0.5
Services	171 581	56.1	5.1	3.2	3.5	3.5
– Imputed bank service charge	−7 969	−3.6	4.7	4.5	8.5	5
GDP in basic values	296 711	100.0	3.8	3.5	2.7	2.5

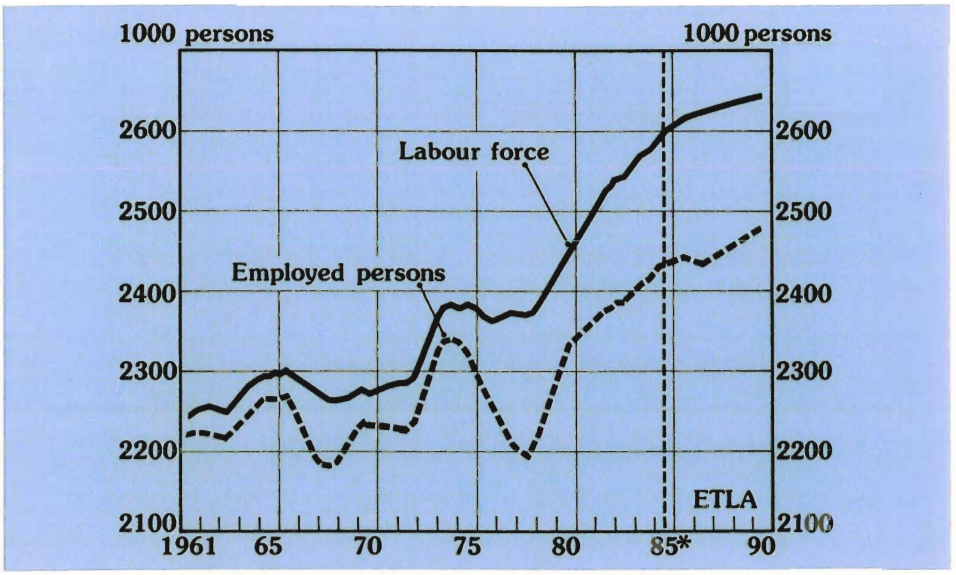
Sources: National Accounts and ETLA (1986).

Table IV:12. Value added in industry by kind of economic activity

Activity	1985* mill. FIM	1985* % shares at 1980 prices	Annual change in volume, %			
			1970→75	1975→80	1980→85	1985→90
Food manufacturing industries	8 714	8.9	2.4	2.7	2.1	1
Textile, wearing apparel and leather industries	5 128	6.2	3.4	2.2	−0.7	0.5
Total forest industries	13 515	18.7	−2.7	8.6	0.8	3
– wood industry	3 489	5.8	−5.6	11.1	−2.2	2
– paper industry	10 026	12.9	−1.0	7.3	2.4	3.5
Chemical industries	9 243	10.2	3.2	6.4	2.4	2
Total metal and engineering industries	27 265	32.3	8.6	4.3	5.4	4
– basic metal industries	3 193	4.4	5.0	11.2	3.7	2.5
– manufacture of fabricated metal products and machinery and equipments	24 072	27.8	9.1	3.3	5.7	4
Other manufacturing	11 324	12.2	5.4	3.4	3.2	2
Total manufacturing	75 189	88.5	3.6	5.0	2.9	2.5
Mining and quarrying	1 309	1.8	0.0	6.4	5.3	2
Electricity, gas and water	9 296	9.8	6.7	5.2	4.3	4
Total industry	85 794	100.0	3.8	5.0	3.1	3

Sources: National Accounts and ETLA (1986).

Figure IV:21. Supply of and demand for labour[1])



[1]) Four-quarter moving average.

Sources: Labour Force Statistics and ETLA (1986).

moving of families more unlikely, the unemployment benefits have improved etc. Hence, the increasing degree of segmentation in the labour market will further restrain the scope for reducing unemployment by means of demand management policies without causing inflationary pressures to rise.

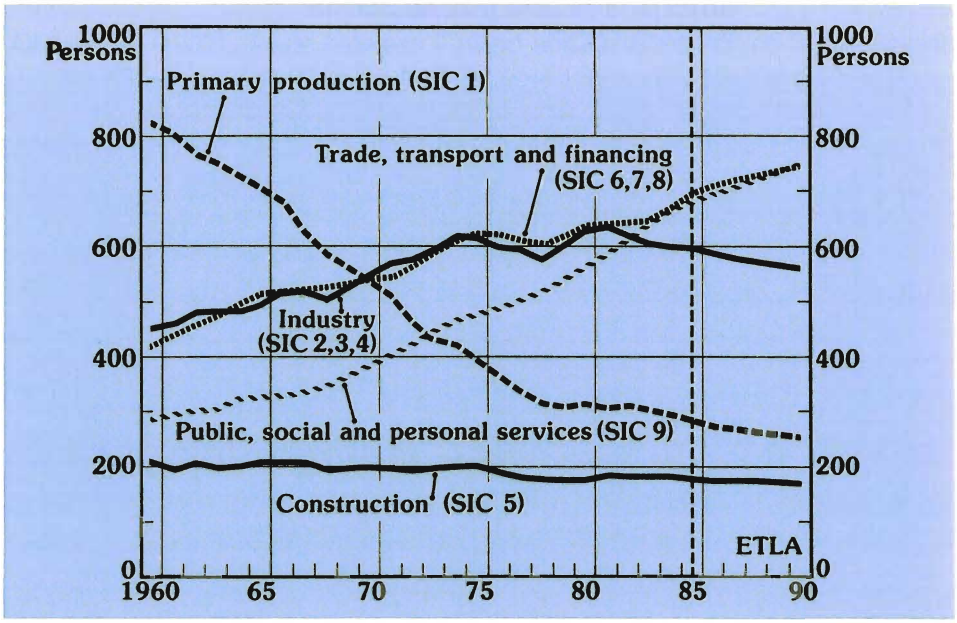
The flexibility and functioning of the labour market in each of the Nordic countries is analysed in more detail in Special Study 3.

Table IV:13. Balance of manpower resources, 1 000 persons

Item	1975	1980	1985*	1990**	Changes		
					1975→80	1980→85	1985→90
Population	4 711	4 780	4 902	4 990	69	122	88
Population of working age (15–74 years)	3 523	3 616	3 710	3 755	93	94	45
Labour force	2 374	2 442	2 600	2 647	68	158	47
Unemployed	62	114	163	169	52	49	6
Employed	2 312	2 328	2 437	2 478	16	109	41
Unemployment rate, %	2.6	4.7	6.3	6.4	..	..	..
Labour force participation rate, %[1])	67.4	67.5	70.1	70.5	..	..	..

[1]) Labour force/population of working age, %
Sources: Labour Force Statistics and ETLA (1986).

Figure IV:22. Employed persons by kind of economic activity



Sources: Labour Force Statistics and ETLA (1986).

4.8 Financing: Changes in Financial Markets Will Continue

The development towards increasingly efficient and less regulated financial markets is likely to continue in Finland during the next few years. Regulation has been dismantled as far as the lending rates of interest are concerned, whereas the fact that bank deposits continue to be exempted from taxation at least until the end of 1988 will keep deposit rates largely subject to cartel arrangements.

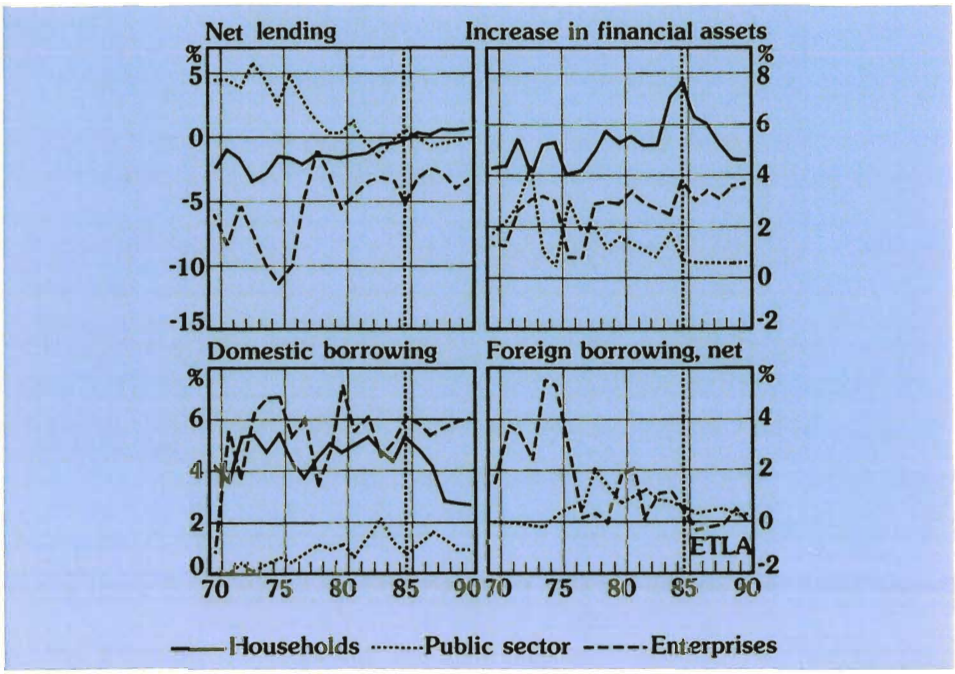
Operations of the short money market will further expand and become increasingly diversified. For example, secondary markets may be started on a larger scale as the amount of commercial papers is increasing.

Capital markets, and especially those of shares and bonds, whose development is largely dependent on taxation factors, are also expected to become increasingly subject to pressures for change.

The interest rate sensitivity to foreign capital movements has further increased, with increasing international integration, and domestic interest rates are thus increasingly closely linked to international interest rate movements.

The main objective of monetary policy and economic policy in general has for some years been to bring inflation permanently down to the levels of competitor countries. This policy goal has determined the interest rate policies pursued during the last few years. Real interest rates have been kept quite high, lest their rapid reduction should lead to an acceleration of inflation in the circumstances where households' disposable income is rising rapidly as a consequence of wage

Figure IV:23. Sources and use of finance of households, enterprises and public sector
Per cent of GDP



Sources: National Accounts and ETLA (1986).

settlements of the spring of 1986 and the terms of trade are improving owing to falling oil and raw material prices.

The firmly set goal of exchange rate policy to avoid devaluation led temporarily to very high call money rates in the summer of 1986, when the authorities defended the foreign exchange reserve and the external value of FIM after a heavy capital outflow. The authorities' commitment to pursuing a fixed exchange rate policy indicates the high priority given to stable price developments in current economic policy stance. It may take some time before the differential between domestic and international interest rates will disappear.

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CHAPTER V

Norway: On the Brink of Recession

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Norway: On the Brink of Recession

1. The Remarkable Mid-eighties

The mid-eighties will stand out as a remarkable period in Norwegian economic history. During 1984 and 1985 production rose fast and well above the average of other industrialized countries. Private consumption boomed and reached a volume growth of more than 8 per cent in 1985. Investments were kept at high levels. Rates of unemployment fell significantly, while inflation was reduced. At the same time surpluses both on external and public accounts were record high. Compared to other industrialized countries, this growth pattern was quite unique.

However, in 1986 as oil prices dropped, the state of the Norwegian economy was altered. Impressive growth rates are currently being replaced by unbalanced stagnation. Inflation has caught up speed; levels of employment are threatened; the value of Norwegian exports has dropped dramatically, while public accounts are heading for red figures.

In other words, prosperity has suddenly turned into a disasterous situation. The main cause is a collapse of prices in a single commodity market. One may ask how a modern, mixed economy, with a large and active public sector, can run into such difficulties, and then what can be done to solve them?

These are the questions dealt with in this chapter. First, we shall discuss the background of the situation. Then the situation and inherent patterns of development in the Norwegian economy are analyzed, and eventually the challenge which Norway faces is elaborated. Finally, the chapter draws up economic outlooks and points to strategies which may improve the future state of the Norwegian economy. "The Norwegian case" has certainly become a question of balancing on the Brink of Recession.

2. Petro-Norway

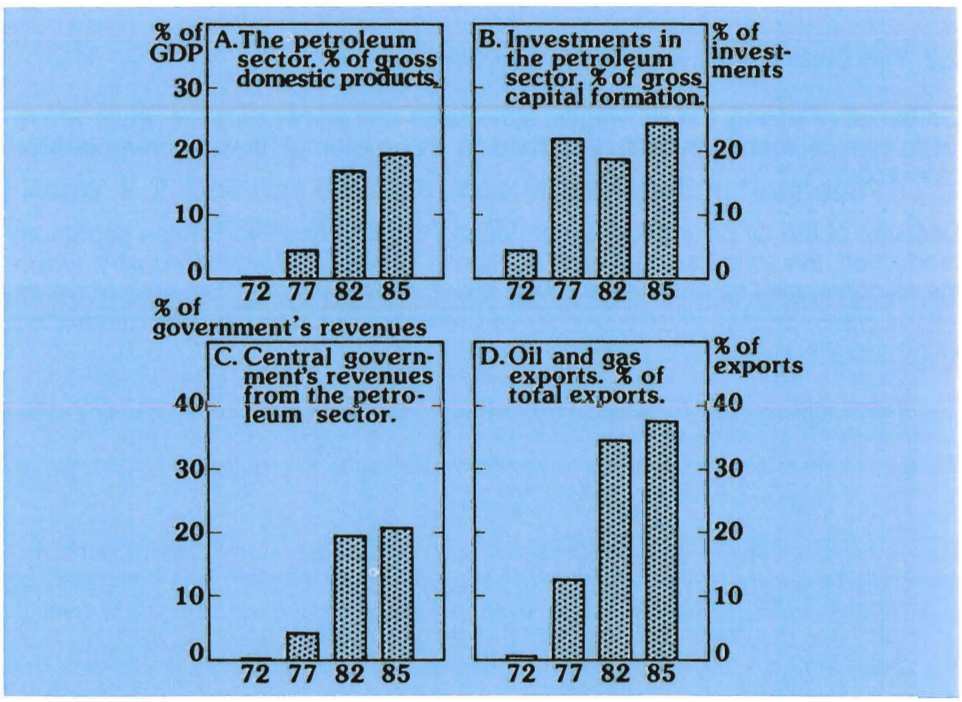
During the 20th century Norway has rapidly transferred into an industrialized economy. Until a decade ago, manufacturing was the "growth engine" of the economy.

During the last decade Norway has transformed its production base into that of an oil and gas producing nation. Within a period of a little more than ten years, petroleum production has become a most crucial factor in the Norwegian economy. Drilling activities started 20 years ago, and petroleum production commenced five years later. The magnitude of this transformation justifies the term "PetroNorway".

2.1 Oil and Gas in Norwegian Production

Any business faces risks as far as revenue making is concerned, and production of petroleum is certainly no exception. But one distinct feature of petroleum production – at least for North Sea offshore activities – is the size and magnitude of projects. In a small economy like the Norwegian, this implies that uncertainty experienced by oil companies, i.e. at the micro level of the economy, is almost automatically reflected in the macro economic situation of the country. And as Norwegian petroleum activities have increased rapidly since production started 15 years ago, this is certainly true for the Norwegian economy. PetroNorway thus emerged throughout the seventies (Figure V:l).

Figure V:1 The emergence of PetroNorway – indicators 1972, 1977, 1982 and 1985



Source: Calculated from National Accounts and Foreign Trade Statistics, The Central Bureau of Statistics

In the mid-eighties oil and gas production
- represented 20 percent of Norwegian GDP;
- investments in the petroleum sector in 1985 amounted to 24 per cent of gross fixed investments;
- central government received more than 20 per cent of its revenues from this sector;
- and the value of oil and gas exports was 37 per cent of Norwegian exports.

Norwegian welfare has surely become severely exposed to fluctuations in international petroleum markets.

Income generated from petroleum production varies, as in any other industry, with volumes and prices. Of these two factors, only the first is within Norwegian control. Prices are almost totally determined by international market conditions.

As far as petroleum revenues are concerned, Norway's destiny is linked to two sets of markets; those determining the oil price, and those where the exchange rate of the NOK is set. Both factors have been developing quite favourably during most of PetroNorway's history.

The international oil price, measured in USDs, has indeed been decreasing since 1981. Due to the exchange rate NOK/USD, however, oil prices quoted in Norwegian currency did not fall for another 5 years. But in 1986 they more or less collapsed. The average price per barrel oil was NOK 235 in 1985, against an average of NOK 120 the first half of 1986! Clearly this heavy drop is revealing the petro exposure of the Norwegian economy.

2.2 The State – a Noveau Riche Landlord

On behalf of society the Norwegian state holds and administers the areas where petroleum is found. In fact, the state is the owner of these non-renewable resources.

Because of the oil price development during the history of Norwegian petroleum production, the state has been able to impose heavy taxes on this industry, which the oil companies have accepted. As a result, state revenues from the petroleum sector have increased strongly as petroleum activities and field production expanded while oil prices rose to historically high levels.

Ten years ago petroleum taxes contributed with only a fraction to state revenues. Just five years later the petroleum sector contributed with more than 15 per cent of the state's revenues. And, as can be seen from Figure V:1, petro taxes amounted to more than 20 per cent of state revenues in 1985.

Unlike the financial situation of governments in most other industrialized countries, the financial status of the Norwegian state during the eighties has been one of affluence. In 1980 the state was in a net debt position equivalent to 4–5 per cent of GDP; in 1985 the state held net assets worth more than 10 per cent of GDP. And this development is certainly due to the new and huge petroleum revenues.

The state has spent these new and partly "additional" revenues on repaying foreign debts acquired in the late seventies. Furthermore, general taxes on

personal incomes and business outside the petroleum sector have been reduced, and transfers of public funds to the private sector as well as public consumption were increased.

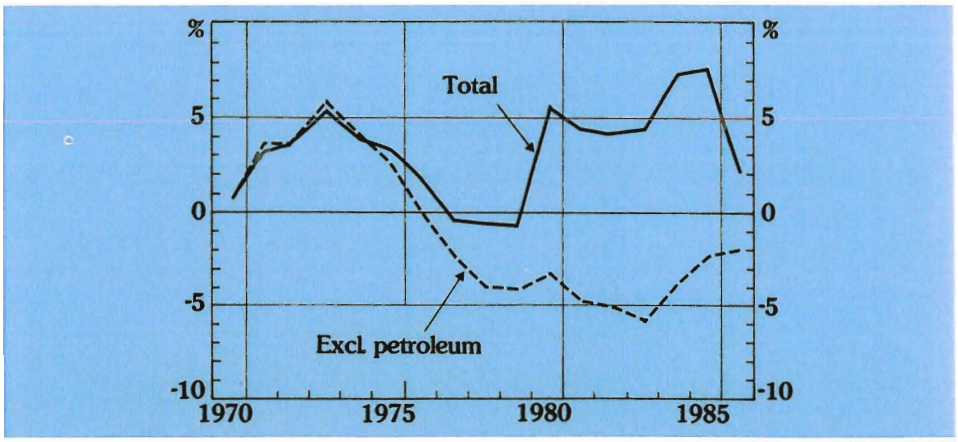
Despite tax cuts for traditional sectors of the economy and increasing public expenses, state revenues from the petroleum sector were still sufficient to balance state accounts with significant surpluses before financial transactions, social welfare accounts included. For 1984 and 1985 these surpluses reached a level of 7 per cent of GDP (Figure V:2).

When the petroleum sector for illustrative purposes are excluded from state accounts (dotted line), balance figures would show deficits equivalent to 3–6 per cent of GDP. And this is roughly the financial situation the state faces when petroleum taxes suddenly dry up.

The drop in oil prices in 1986 implies that the revenue making source of petroleum production at least temporarily is losing its importance. As taxes are paid according to previous economic results (a 6 month lag), the current price drop only partly affected the 1986 accounts of the state.

In 1987, however, the consequences will come into the open. If oil prices stay low for several years, the state may run into a troublesome financial situation (cfr. section V:7.2). To conclude; the noveau riche landlord has to reconsider his prospects.

Figure V:2 Balance on state accounts excluding financial transactions, 1970–86
Per cent of GDP



Source: Calculated from National Accounts, The Central Bureau of Statistics

3. Macro Economic Performance

An overall evaluation of macro economic perfomance has to consider
- how factors allocated for production purposes actually have contributed to levels of production (efficiency of production factors),
- to what extent society has been able to make use of available production factors (production potential),
- and the outlooks for future production inherent in current production structure and performance (structural constraints and imbalances in the economy).

This section approaches these topics by looking into how several indicators of the Norwegian economy have developed, illustrating different aspects of such an overall evaluation as far as the last decade is concerned.

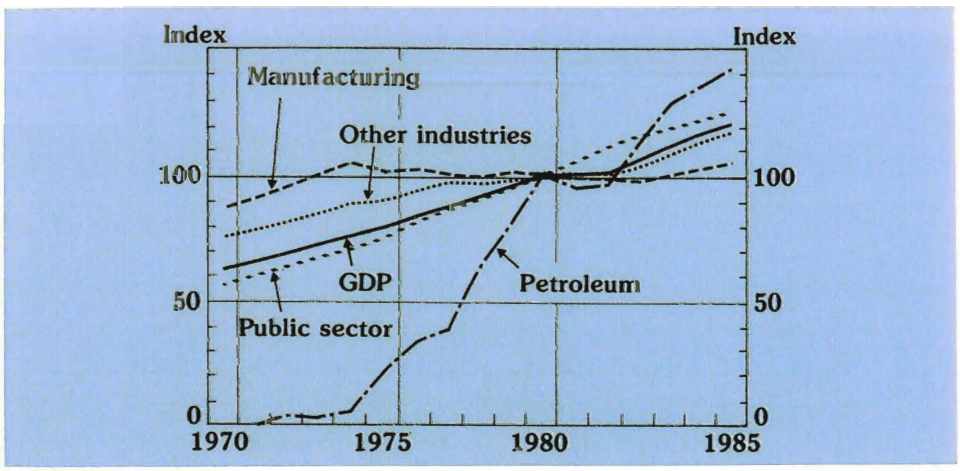
3.1 Production by Sectors

Norwegian GDP rose steadily during the seventies, then levelled out through the early eighties, and has since then caught up speed, increasing by some 5 per cent on an annual basis since 1983 (Figure V:3).

Annual Norwegian GDP growth rates have for the period as a whole stayed well above the OECD-average. But GDP growth covers up for significant differences between production sectors;

- manufacturing production has completely stagnated, and is despite a weak recovery since 1983 still at a 1975-level. It is also worth noticing that the growth of manufacturing production which has taken place during the last three years, is weaker than the growth of GDP and well below manufacturing growth rates in OECD;

Figure V:3 Norwegian production growth, 1970–1986
Annual changes in volume. 1980=100



Source: Calculated from National Account Statistics, The Central Bureau of Statistics

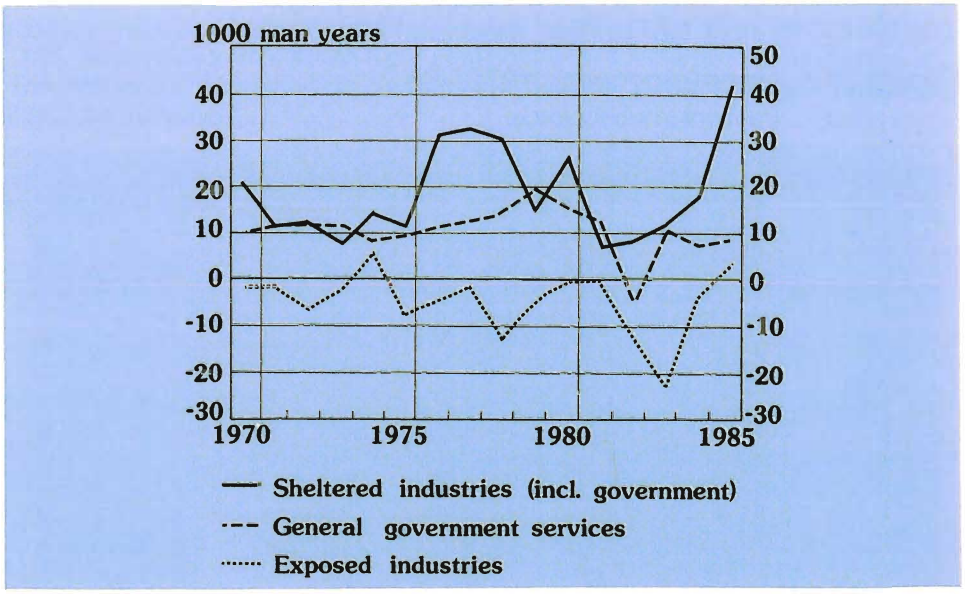
- production of oil and gas increased rapidly in the late seventies, and after a period of stagnation in 1981–82 it has once again grown rather fast and well above GDP rates.
- public sector production has grown above GDP growth rates all through the last ten years;
- production from other industries has had a fairly stable growth during the period under review, generally speaking somewhat below GDP growth rates.

Real increases in oil prices in NOK during most of this period, and then the real fall of these prices from 1985, are not directly included in the growth rates listed above. However, value changes occuring in a substantial sector of the domestic economy, as the petroleum sector is to Norway, certainly influences domestic levels of demand, and consequently production growth in various sectors of the economy.

3.2 Resource Allocation between Sectors

From the late sixties Norway has experienced a process of labour reallocation from exposed to sheltered sectors of the economy. Public sector employment has grown considerably (Figure V:4). Because of the rapidly growing petroleum sector, which has produced highly valued tradables with only minor inputs of manpower, this reallocation has not caused imbalances on external accounts (cfr. section V:3.9).

Figure V:4 Annual net change of labour input in exposed and sheltered sectors, 1970–85
Thousands of man years



Source: Calculated from National Account Statistics, The Central Bureau of Statistics

Petroleum production is, as already indicated, an extremely capital intensive industry, and the rapid build up of this sector has required substantial funds. Financing has, however, been achieved by drawing heavily on foreign capital markets. This explains why it is hard to trace evidence showing that petroleum investments have been carried through at the expense of capital supply for investments in other Norwegian industries. For instance, volumes of fixed investment in manufacturing have been kept at 1975 levels, or above, as an average for the last ten years.

3.3 Utilization of Production Resources

The supply of labour has for different reasons increased steadily during the period considered, and the labour force currently totals a little more than two million people.

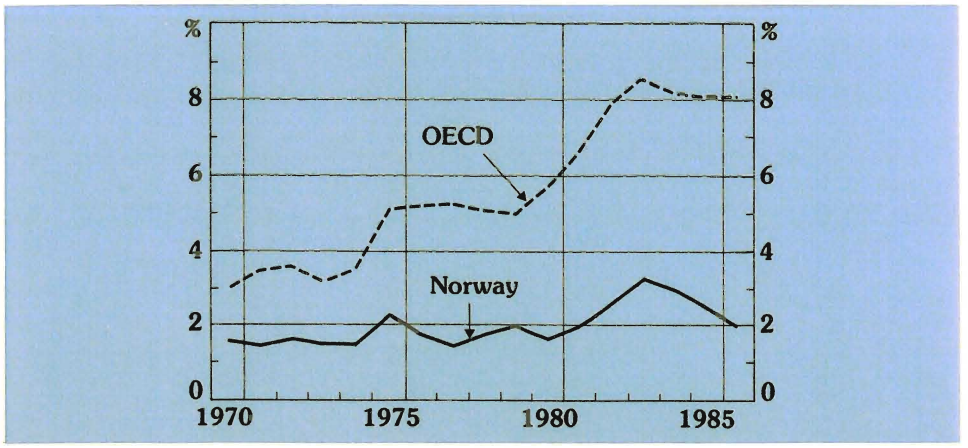
Full employment is a prime objective in Norwegian politics, and unemployment has been kept low all through the post-war period. However, during the early eighties the number of unemployed increased (Figure V:5).

Despite this, Norwegian unemployment in terms of percentage of the labour force has been low by international standards. While unemployment in the OECD area has been close to 10 per cent of the labor force so far during the eighties, Norwegian unemployment peaked in 1983 reaching 3,3 per cent as an annual average. The current unemployment rate (late 1986) is close to 2 per cent.

3.4 Wages, Profit Margins and Capital Costs

Nominal wage rates in Norway have increased steadily during the last ten years. This is in line with inflation. Real wages, calculated as wages per man year

Figure V:5 Unemployment, 1970–86
Per cent of labour force



Source: Calculated from Labour Market Statistics, The Central Bureau of Statistics

adjusted for private consumption inflation rates, have shown a rather modest increase of less than 1 per cent as an annual average since 1975, after a period when real wages increased by an annual average of above 4 per cent (1970–75). In fact, real wages were only slightly increased in the late seventies and early eighties, but has since then increased by close to 2 per cent annually.

Tax rules and public transfers are, of course, important factors when considering the buying power of employees and households. Such rules and arrangements have been adjusted, contributing to a stronger increase in real disposable incomes than the development of real wages may indicate.

Looking at how the development of real disposable income has been distributed between employees, it seems fairly clear that during the eighties real disposable income of high income groups has increased faster than for low income groups and blue collar manufacturing workers. Income differences have obviously increased. This trend is the opposite of the process of redistribution pursued during the seventies, and it constitutes an important social setting for wage negotiations – at least in the short and medium term future.

The development of profits does not, of course, show the same stability as wages (cfr. Figure I:1). Nevertheless, average rate of return in manufacturing has for the period 1975–1985 been pretty close to average levels of profits since 1960.

Rate of return is not, however, only a measure of "market profitability". It is among other things influenced by financial support from government to industries and companies. Such subsidies have been increasing relatively over the years, and are currently at the level of 6 per cent of value added in Norwegian manufacturing. This is somewhat higher than in 1980, and higher than what they are in Sweden, Denmark and Finland in the mid-eighties (St.meld. nr. 2, 1985–86).

Norwegian interest rates, on their part, stayed very low during the seventies, but have since then been increasing substantially both in nominal and real terms. In modern times real interest rates have never been as high as in 1983, 1984 and 1985, amounting to more than 6 per cent before tax for the last two or three years. The inclination of investors to put money in financial, rather than real assets has therefore increased.

3.5 Consumption and Investments

During the mid-eighties the Norwegian government has given priority to consumption spendings. Public consumption has grown by an annual average of four per cent in volume terms. Private consumption developed in accordance with total demand until 1983, dropped somewhat in 1984, and then accelerated in 1985, growing by 8,2 per cent. In 1986 private consumption is estimated to grow by close to five per cent.

Total gross fixed investments have lagged behind the development of consumption. The main factor behind the 1984 increase was investments in the petroleum sector; while the decrease in 1985 mainly was caused by second-hand sales of ships to foreigners.

After a bottom year in 1983 the volume of manufacturing investments increased by almost 20 per cent in 1984 and 1985. Ironically, this growth coincides with high real interest rates in Norway. However, financing of these investments has partly been achieved through foreign capital markets, partly through the equity market. Domestic financing has, however, been required as well. Therefore, if Norwegian interest rates should fall towards international levels, the profit potential of these investments should be improved. However, in light of the economic development, we regard high interest rates to prevail for the medium term future.

3.6 Export Features

The volume of Norwegian exports stopped growing during the early eighties, but started to grow rapidly again from 1983; by more than 7 per cent in 1983 and 1984. It increased by another ten per cent in 1985. These larger export volumes have mainly two explanations; the international economic recovery resulted in a growing demand for traditional Norwegian tradables. At the same time Norway increased her petroleum exports.

Norwegian exports have several important characteristics. Firstly, it is worthwhile emphasizing that a few, dominant commodities make up most of the products Norway sells abroad (Table V:1). The ten largest Norwegian export commodity groups (2-digit SITC) represented as much as 82 per cent of Norwegian commodity exports in 1985. And this share has been increasing throughout the last ten years.

Oil and gas exports are the main factors behind this development towards a more concentrated composition of Norwegian tradable goods. The concentration has occurred while the share of commodity exports of total exports has been rising

Table V:1 Ten largest commodity groups in Norwegian exports
Per cent of commodity exports

2-digit SITC		1975	1980	1985
03	Fish	5,5	4,2	4,1
25	Pulp	2,8		
33	Oil	12,6	34,1	35,8
34	Gas		14,2	17,2
56	Artificial fertilizers	2,6	1,4	
58	Plastics		1,9	1,6
64	Paper	5,1	3,5	2,9
67	Iron and steel	7,4	4,0	3,1
68	Nonferrous metals	9,1	8,6	7,5
72	Special machines			1,3
74	Industrial machines	4,3	1,9	1,4
77	Electrical machines	4,3		
79	Other vehciles	20,9	4,9	7,1
10 largest export commodities		**73,9**	**78,7**	**82,0**

Source: Foreign Trade Statistics, Central Bureau of Statistics

steadily. In 1975 Norwegian commodity exports totalled 61 per cent of Norwegian exports; in 1985 this share had grown to 73 per cent. In other words; the share of service exports has been decreasing significantly.

Also in this respect the emergence of oil and gas production is an important factor causing shifts in the relative size of commodity and service exports. However, as Norwegian service exports have to a large extent consisted of world wide shipping actitivites, the international shipping crises have contributed to a reduction in the relative importance of Norwegian service exports, too. Altogether, this implies that even more than before Norway will have to rely on production and sales of raw materials and semi-manufactured articles – like iron and steel, nonferrous metals and paper – as far as foreign currency earnings are concerned.

Due to the importance of petroleum in Norwegian foreign trade, the price index of Norwegian exports increased significantly during the years 1979–81 (OPEC II). Throughout the eighties, the dollar exchange rate and an upswing in the business cycle for traditional Norwegian export commodities contributed to a further increase in this index. Outlooks for the short and medium term future are not good, as petroleum prices are down, the dollar exchange rate is falling, and the business cycles for traditional Norwegian exports show a downard trend.

The five largest importing countries of Norwegian commodities, i.e. the North Western European countries (Sweden, the Netherlands, Great Britain, and the Federal Republic of Germany) as well as the US, receive some two thirds of Norwegian exports. Great Britain alone absorbs 25 per cent of Norwegian exports. However, some of this is petroleum landed in pipelines, which is reexported. Consequently, Norwegian exports are vulnerable, not only because they consist of a narrow range of commodities, but also because export activity is mainly targeted on a small number of countries.

A third important feature is that only a very limited number of firms are responsible for Norwegian exports. In 1984 the ten largest exporting companies handled 44 per cent of total Norwegian exports. This share has been increasing significantly over the years, from 15 per cent in 1975 to 20 per cent in 1980. Increasing volumes and rising values of petroleum production are the main but not the only cause of this development. Nevertheless, it illustrates that falling oil prices will affect Norway through the operations of a small set of large companies, and that spin-off effects of lower oil prices will be caused by decisions made by a few and quite visible decision makers.

3.7 Import Features

The other side of the foreign trade pattern concerns imports. As far as the volume of Norwegian imports is concerned, it increased slightly in the early eighties. In 1983 there was no change in volumes. Then, import volumes increased by some 8 per cent as an annual average for the next two years as a result of a domestic demand boom. This trend has been reinforced through 1986, currently estimated to reach almost twelve per cent.

Commodity imports make up for about 70 per cent of total Norwegian imports. In Table V:2 we have listed the 10 largest commodity groups in Norwegian imports, measured by value.

Table V:2 Ten largest commodity groups in Norwegian imports
Per cent of commodity imports, 1985

2-digit SITC		1985
33	Oil	6,5
67	Iron and Steel	3,8
69	Manufactures of metals, NES	3,9
72	Machinery specialized for particular industries	4,8
74	General industrial machinery and equipment	5,0
75	Office machines and automatic data processing equipment	4,2
77	Electrical machinery	4,9
78	Road vehciles	9,2
79	Other transport equipment	5,0
84	Articles of apparel and clothing accessories	5,0
10 largest import commodity groups		**52,5**

Source: Foreign Trade Statistics, Central Bureau of Statistics

The commodity composition of Norwegian imports reveals three important characteristics when it is compared to exports (table V:1). Firstly, it is not dominated by any single group of items. Secondly, imports are more widely distributed among commodity groups, and if we look some years back, imports have become less concentrated among the ten major commodity groups. Thirdly, imports are heavily based in commodity categories of manufactured products, while exports are concentrated in raw materials and semi-manufactured products.

The index of import prices has risen steadily during the past ten years. But the rise of import prices has been much slower than the rapid increase in Norwegian export prices during the same period.

Looking at the country composition of Norwegian imports, two aspects should be noticed. Firstly, the 5 most important producer nations contribute with 58 per cent of Norwegian imports, which in concentration terms are somewhat less than the corresponding figures for the country composition of Norwegian exports. Secondly, the major producer nations for Norwegian imports are mainly those countries that receive the bulk of Norwegian exports. Sweden, the Federal Republic of Germany, Great Britain, and the US are all in "the top five" for imports and exports. In addition, Denmark is among the five largest producers of Norwegian commodity imports, and is also a substantial market for Norwegian exports.

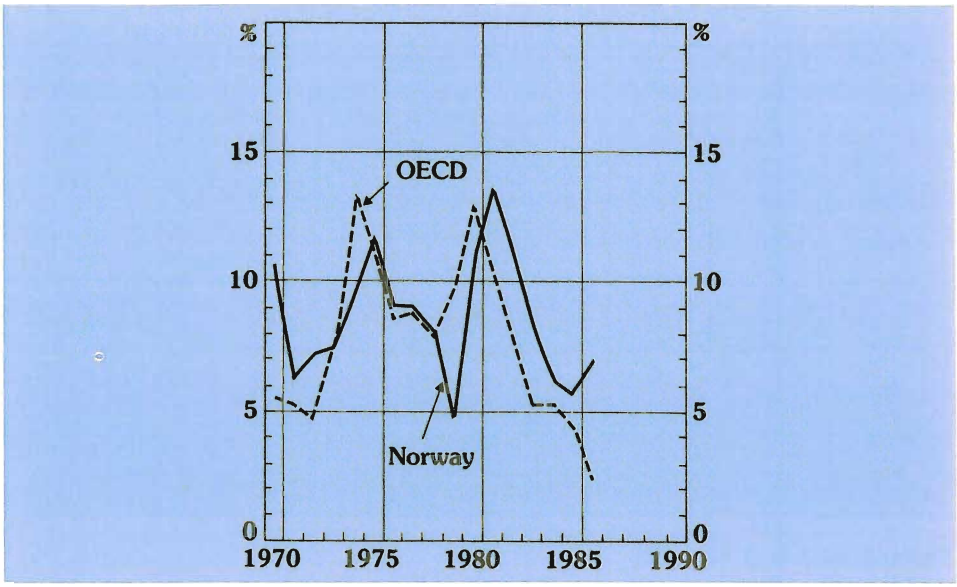
3.8 Inflation and Cost Competitiveness

The domestic price level is important when explaining cost competitiveness of domestic producers on international markets. Even though in an international context the competitive power of a business includes several other aspects than labour costs, the development of cost competitiveness is important when outlooks for exports and imports are considered.

Figure V:6 draws up Norwegian inflation rates since 1970, and compares them with an average inflation rate of countries that are important in Norwegian foreign trade.

Figure V:6 Inflation, 1970–86

Annual percentage change in consumer prices



Source: The Central Bureau of Statistics

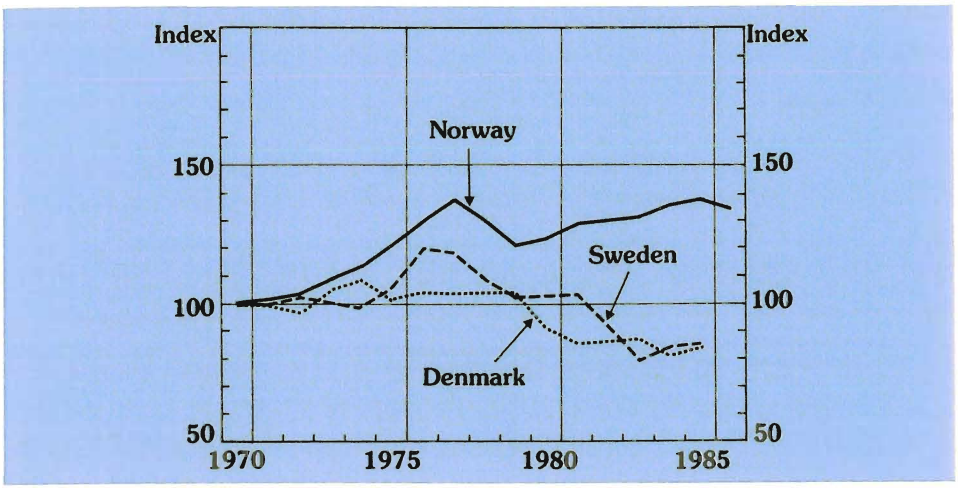
Norwegian inflation has been considerably reduced since it peaked in 1981. However, domestic inflation has stayed well above the rise of prices in most other industrialized countries during the eighties, in contrast to what was the general picture for the seventies.

Lately, the gap between domestic and international inflation rates have been widening, probably due to differences in the utilization of production factors. The May-86 devaluation of NOK by 12 per cent, is expected to widen this gap further. The Norwegian inflation rate will probably rise, while it is expected to decrease substantially in most other countries due to lower oil prices.

Nominal wages in Norwegian manufacturing industries have increased more rapidly than in countries where major competitors are located, reflecting the above mentioned differences in inflation rates. Besides, Norwegian productivity growth in manufacturing industries has been substantially weaker than the productivity development in other countries for the 1981–85 period; an annual Norwegian average of 2,6 per cent must here be compared to an annual average of 4 per cent for competitor nations.

Both nominal wage increases and productivity records contribute negatively to cost competitiveness of Norwegian manufacturing. Even an effective depreciation of NOK by 1,3 per cent on the annual average for the period 1981–85 does not prevent a continual deterioration of cost competitiveness for Norwegian manufacturers. In Figure V:7 this is illustrated by comparing Norwegian unit labour costs in manufacturing with similar measures for Swedish and Danish manufacturing, using 1970 as a base year.

Figure V:7 Relative unit labour costs in manufacturing industries, 1970–1985
Index 1970=100



Source: St.meld. nr. 2, 1985–86

The May-86 devaluation will change this picture to some extent. But it is unclear what the medium term effects will be. Most likely Norwegian inflation will gather speed, with the effect that it may quite soon outbalance the improvements achieved by the devaluation.

Looking at Norwegian industries competing with imports, it is well established knowledge that they have been losing market shares in Norway; from 59.3 per cent in 1981 down to 52.4 per cent in 1985 (St.meld.nr.1,1986–87). In other words; foreigners have more than the Norwegians themselves been capable of taking advantages of increases in Norwegian domestic demand.

This is also the case with exports; Norwegian exports of traditional goods have been increasing during the eighties. But the fact still remains that imports to OECD countries have risen faster. This is, however, partly a result of a basic orientation of Norwegian export industry in general, towards slow-growing markets. Nevertheless, except for oil and gas, it is a general characteristic that Norwegian production have lost market shares internationally.

Until 1986, this weakening of traditional Norwegian positions in international markets has truely been more than compensated for by the expanding petroleum activities, and may even partly have been caused by this new expanding industry. But as oil prices fall, Norway will depend heavily on the quality of this alternative industrial base in order to balance external accounts. And to conclude; the prospects are certainly not the best ones – with regard to market orientation, business capabilities and cost competitiveness. The impact on external account is obvious.

3.9 External Accounts

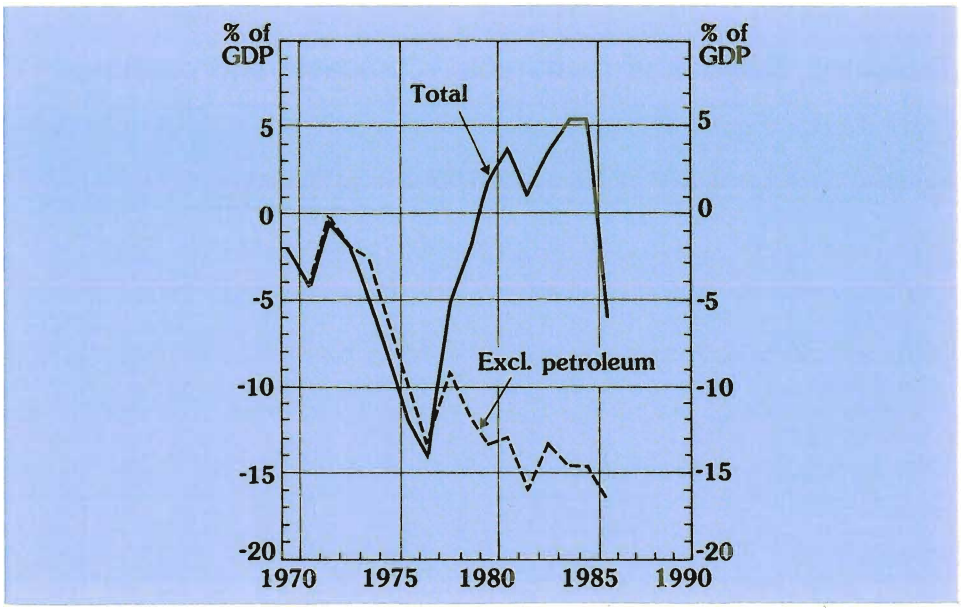
As already mentioned, the price index for Norwegian exports has for quite some time now been rising faster than prices of imports to Norway. This means that terms of trade have been improved up to 1985. When recognizing that also export volumes have grown faster than imports, the trade balance has been improving, showing large surpluses during the first half of the eighties.

Norway's foreign trade show increasing surpluses while net interest payments and transfers to abroad have been reduced, contributing to a favourable development of current accounts. This is shown in Figure V:8, picturing Norway's current accounts as measured in per cent of GDP.

All through the seventies, current accounts showed deficits. But for the 1980–85 period current accounts have balanced with significant surpluses. In 1984 and 1985 the surpluses were equivalent to some 5 per cent of GDP.

Obviously, these surpluses also imply that Norway's net foreign debt has been reduced. They peaked after the build up of the petroleum sector in 1977, reaching almost 47 per cent of GDP. By the end of 1985 this net debt figure was reduced to 8.

Figure V:8 Balance on current account, 1970–86*
Per cent of GDP



* 1986; estimate
Source: National Accounts, Central Bureau of Statistics.

This rather solid foreign debt position is important as oil prices may remain low for several years. Bearing in mind that petroleum exports in 1985 constituted 37 per cent of all Norwegian exports, a reduction in prices achieved for these products (50 per cent) is bound to influence the external balance of the economy. When looking at the huge deficits on current accounts which appear if the petroleum sector is excluded from the national figures (dotted line in Figure V:8), a dramatic fall in oil prices necessarily causes concern.

The crucial question in this respect is how an industrialized, petroleum producing nation should meet a situation featuring significantly lower oil prices than it has so far experienced, and got accustomed to.

4. Deviations from Previous Estimates

Before this question is addressed, we shall relate the macro economic performance, which has been discussed so far, to the estimates presented in "Economic Growth in a Nordic Perspective" (1984). There the 1982–87 period was considered. Estimates were presented as annual averages for this period as a whole. Although this period is not terminated, it still is of interest to consider how the estimates fit the actual development so far.

Table V:3 shows the main aggregate estimates which were presented, the recorded performance for the years 1983–85, and the forecast residuals if the estimates are to come true.

Table V:3 Balance of resources – forecasts and outcomes

	Previous estimates 1982–87	Outcome (*) Volume change, %			Forecast residual, annual average
		1983	1984	1985	
GDP	1.5	4.5	5.6	4.2	−3.5
Imports	3.0	0.0	8.2	7.7	−0.5
Total resources	1.9	3.1	6.3	5.3	−2.6
Exports	2.5	7.3	7.5	10.0	−6.2
Investments					
– private	0.5	−2.4	14.4	−7.0	−1.3
– public	0.0	5.2	1.1	0.9	−3.6
Consumption					
– private	2.0	1.5	2.7	8.2	−1.2
– public	2.5	4.6	2.0	3.4	1.3
Total demand	1.9	3.1	6.3	5.3	−2.6

(*) 1984 and 1985; preliminary figures

Source: The Central Bureau of Statistics and The Institute of Industrial Economics

A general comment is that our previous growth estimates have been too pessimistic. This also holds good when growth is broken down into different production sectors of the economy;

- we expected no change in the volume of manufacturing production, while this sector so far has grown by an annual average of 1 per cent,
- we expected a volume growth of petroleum production by 2–3 per cent as an annual average, while the growth figures in this sector so far has been 12 per cent.
- production of private and public services were expected to grow a little less than private and public consumption, which has also been the case. But as consumption levels have grown more rapidly than expected, so has service production in the private and public sector, too.

Of course this underestimation of growth also affects the estimates presented, which are more or less directly influenced by the actual growth rates. Unemployment was expected to stay high by Norwegian standards, with an average close to 4 per cent of the labour force. So far the average figure has been 3 per cent, and current unemployment (late 1986) is at the level of 2 per cent.

Norwegian prices were expected to rise 1–2 per cent above average inflation rates of other OECD countries. As the latter was assumed to be 6 per cent, Norwegian inflation rates were predicted to reach the level of 7–8 per cent. The actual price increases so far in the period have for Norway been 6.8 per cent, and internationally 5 per cent, which is rather consistent with our estimates.

We also seem to have been fairly correct in estimating important underlying trends for determining future outlooks of the economy. The annual increase in total labour productivity were assumed to be about one per cent, which has been the case so far (total labour productivity has on the average grown slightly less than 1.2 per cent up to 1985).

There are three main reasons for our underestimation of Norwegian growth. The first is our assumption of unchanged real exchange rates, and that estimates were presented in 1982-prices. The exchange rate USD/NOK were for instance 30 per cent higher in 1985 than in 1982; of course influencing the revenues from exports, which are severely exposed against the USD. Besides, the international upswing caused prices for Norwegian export commodities to rise. Hence, we underestimated the effects of export generated growth.

Secondly, larger volumes of petroleum production than was predictable in 1982 caused export volumes to increase further. The misjudgement here is mainly due to overfulfilment of production plans in the oil producing Statfjord field, and that extraction on a larger share of the Murchison field has been handed over to Norway.

The combined effects of the international upswing on Norwegian production, and of larger volumes of petroleum produced, explain why exports have been growing faster than imports, which is contrary to our estimates.

Thirdly, the caution we showed concerning estimates on investments in the petroleum sector has certainly come true. 1982 investment levels in this sector was miscalculated by authorative sources at the time the estimates were made,

proving to be too high. Further, investment plans were hurriedly pushed through, with the result that investment activities in the petroleum sector boomed, and reached a level in 1985 which was more than twice that in our base year.

Altogether, this implies that we not only underestimated export generated growth, but also what might be labelled "petro generated growth". And of these two, our analysis indicates that the latter is the strongest factor behind the rapid Norwegian growth.

Hence, exports and petro generated growth have together with improved terms of trade caused Norway's disposable income to grow significantly above what would have been the case if our basic assumptions had come true, and hence allowed for increasing domestic spendings, especially in 1984 and 1985. Norway's real disposable income rose by more than 7 per cent each of these two years, but will fall in real terms in 1986 and probably in 1987. As this will obviously affect domestic demand levels, several of our previous estimates for the 1982–87 period may come out as being closer to what will actually be recorded by the end of this period. Nevertheless, growth estimates in volume terms are still expected to have been set too low.

5. The Lesson of 1986

At a first glimpse the performance of the Norwegian economy during 1980–85 seems excellent. National figures are indeed flattering. After a short period of stagnation growth accelerated, employment rose, and inflation was reduced, while external and public accounts balanced with large surpluses. But underneath this seemingly engouraging development, patterns have been emerging which give reason for serious concern. The oil price drop has made the situation acute.

5.1 Current Trends

From the discussion above we may extract three main factors behind the favourable macro development of the Norwegian economy. They are;

- oil and gas production, which has continued to expand during a period with high oil prices,
- upswings in ordinary business cycles for traditional industries, and
- an investment boom in the domestic petroleum sector, from which traditional industries have benefitted significantly.

Norwegian attention is currently mostly caught by the fact that oil prices have been halved, and are expected to stay low for the coming years. The immediate impact is one of reduced revenues and cash flow, affecting oil companies, the state, and external accounts. Exploration plans are currently being rescheduled or dropped, and after some time development activities will be affected as well.

Hence, two of the three main factors behind the recent favourable development – petroleum exports and domestic investment levels in the North Sea – are changing for the worse. As far as the third one is concerned, the business cycle for traditional exports seems to have entered into a downswing; volumes are levelling out and prices are falling.

Further, productivity records in manufacturing are poor compared to what has been achieved in other countries, even if labour productivity in manufacturing has increased well above the average for all industries in Norway. Most industries are, however, producing at their capacity level.

As a consequence, Norwegian production has been losing market shares, at home and abroad. While exports are levelling out, high and increasing domestic demand will result in even larger volumes of imports.

Along with collapsing oil prices, this will cause external accounts suddenly to run into huge deficits. Current accounts excluding the petroleum sector has continuously deteriorated in recent years. Outlooks for 1986 indicate a deficit which is twice the 1983 deficit in nominal values; equivalent to more than 15 per cent of GDP. Including the petroleum sector, the 1986 deficit on current accounts shall be to the magnitude of 6–7 per cent of GDP, while only last year Norway's current account showed a surplus of almost the same size. Outlooks for the medium term future are rather gloomy, as well.

This is briefly the background for the May 86 devaluation of NOK, which, however, took place at a time when utilization of production factors was nearly one hundred per cent, and domestic prices were once again about to rise. Hence, inflation may accelerate again, and compare unfavourably with inflation in other countries. And in turn, this may cause nominal wages to rise faster than abroad, after they have grown by some 10 per cent on the average in 1986.

Altogether, this implies that the Norwegian economy is facing severe imbalances, as far as external accounts, inflation, and in turn employment are concerned. This may also be the case for state finances if oil prices stay below 20 USD/bbl for the next 5–10 years. Deficits on state accounts (excl. financial transactions) will, however, not appear until 1987 at the earliest because of the time lag between profit making in the business sector and tax payments to the state.

5.2 Political Response

The current economic malaise has already caused a change of government; the conservative-centre coalition was replaced by a labour government in May 1986. But, even though the political colour of the two administrations differ, their diagnosises of the economic situation are pretty much the same. Consumption has to be curbed through efforts taken in the area of fiscal and monetary policies.

This is, however, no easy task. There are various kinds of rigidity attached to public spending, and the last years' attempts to control credits and money supply have been a complete failure. For instance, both for 1984 and 1985 the supply of capital in Norway turned out to be almost 50 per cent higher than the targets put up by the government, increasing money supply by 20 per cent in 1984 and 15 percent the following year. And the excessive supply of money has continued well into 1986, as well.

This explosion of credit supply in the economy must be interpreted in the light of the liberalization which has taken place in the area of credit and monetary policies, after several years of more direct regulations (see Special Study 2). At the same time interest rates have been significantly increased, currently staying above 13 per cent for government bonds. These high and increasing levels of interest rates must be ascribed to the fact that borrowers have an unlimited right to deduct all interests on incomes before tax is paid.

So far, public discussion and efforts to handle the situation have been based in the area of fiscal policies. However, the view that it is important to promote growth in non-petroleum related business is generally accepted and has been so for several years. Still it is hard to trace intensified actions in this area of industrial policies. However, something has to be done in this field, unless one is hoping for an upward shift of oil prices. Some may still do so.

6. Challenge and Strategies

6.1 The Norwegian Delusion

The lesson of 1986 revealed both a vulnerability of the Norwegian economy and several features giving reason for concern, which only a few had paid attention to. For several years government officials and business representatives have kept reassuring the public that the mainland economy of Norway had been put back on a right track. Manufacturing production was growing again, traditional exports were increasing, and the stock market was revitalized and thought to furnish strongly needed equity capital on a large scale for companies.

This perception of economic realities failed to realize that this apparent improvement of the state of the Norwegian economy was due to huge demand impulses from abroad and in the domestic economy, rather than caused by strengthened capabilities of business to compete in international markets. Export growth of traditional industries was caused by upswings in ordinary business cycles where Norwegian production really was lagging behind competitors. Nevertheless, the export growth which was achieved, contributed to production growth in manufacturing industries. This growth of manufacturing production was further promoted by rapidly expanding petroleum activities, and consumption spendings running in high gear due to wage increases, public transfers, tax cuts, and easy access to capital. Indeed, Norwegian manufacturing production grew. But markets shares were still lost – not only abroad, but at home as well. To a certain degree, however, the loss of market shares is due to capacity limitations for domestic producers.

The strongest demand impulses were, nevertheless, domestic, and the origin of this rise in domestic demand may, directly or indirectly, mainly be attributed to the expansion within the petroleum sector and the effect it had on the development of money supply, in general terms. This industry made huge profits due to high prices of oil in NOK and increasing volumes for sale, and these revenues were channelled into the Norwegian economy through the investment boom in the North Sea since 1983 and through public spendings based on affluent tax revenues from the petroleum industry.

In other words, the Norwegian economy has during the recent years become even more dependent on oil, natural gas, and oil products, which all are commodities traded in strongly interdependent markets. However, these facts have been neglected, or misinterpreted. Rather, the growth which took place in mainland Norwegian industries was ascribed to the economic policy pursued, which was claimed successful in creating business environments promoting a positive development of industrial capabilities. The formulation of further policies were based on this assumption of being on the track of balanced growth. This perception of reality has really been the *Norwegian Delusion.*

6.2 Transforming the Industrial Base – No Time to Lose!

The vulnerability of the Norwegian economy, which has been clearly demonstrated by the oil price fall, and which is now finally widely acknowledged, was the main topic in the economic evaluation of Norway in "Economic Growth in a Nordic Perspective" (1984). The long term economic problem, or rather the major challenge which was spelt out, was one of "transforming the oil wealth into a broader based industrial wealth". Since then, we have repeatedly, but unsuccessfully, advocated a more aggressive transformation strategy as a basis for industrial policy formulation.

Really, the need for such a transformation strategy has not been obvious to all, as everything apparently worked out just fine. But the underlying patterns of giving cause for concern are no longer hidden. Hence, conditions are now more favourable for taking actions which may contribute to a revitalization of mainland industries. Companies will definitely be forced to pay more attention to business opportunities outside the petroleum sector. Crucial in this respect is also how economic and industrial policies are conducted.

There is no doubt that during the next couple of years the Norwegian economy will run into severe difficulties if oil prices stay low, i.e. heavy deficits in external accounts, high and temporarily increasing inflation, and possibly rising unemployment. These difficulties are, as already mentioned, caused by a rather inadequate underlying business structure. Only when appropriate adjustments are made, and the adjustment mechanisms work more in accordance with changing market opportunities, the difficulties can be coped with in a more permanent manner.

Fortunately enough, it seems to us that oil prices have dropped while there still exists an industrial base from which stronger capabilities and competitiveness may be developed. When all is said and done, Norway is, after all, still holding a fortunate position after several prosperous years. External as well as public accounts have been favourable for a number of years, and Norwegian net foreign debt is low, while the state holds substantial net assets. Hence, Norway is not forced to secure a balanced development only through welfare cuts, although some will be needed. The country can also afford the costs of developing and broadening the current industrial base to bear high levels of welfare also in the future.

From the nation's point of view we consider this challenge of transforming the industrial base as the major economic task, and the strategy which ought to be pursued. The rationale behind it is to achieve results in four to five years. But there is no time to lose. Measures need to work for some time, before results are achieved. In other words, these questions have to be dealt with immediately.

The recommended strategy of transforming the industrial base, will, however, have to be combined with a smaller dose of the defensive type of demand policy actions, so that short term imbalances shall not become too severe. Norway will have to cut spendings, while welfare expectations need to be adjusted downwards. Spendings must, however, be cut without strangling costs intended to improve future business potentials, as infrastructure investments, educational programmes, research efforts and the like. The nation has to mobilize public and private resources in order to reduce dependence on the petroleum sector as far as future revenue making is concerned. This will really mean performing an act of balancing – on a cutting edge.

For politicians and business leaders this imply that focus has to be on the supply side of Norwegian production, i.e. business capabilities and competitiveness, and how these may be strengthened in the years ahead. Industrial policies in the broad sense, need to be reconsidered.

7. Economic Outlook 1986–1990

The open Norwegian economy is certainly relying on the development of the international economy. The latter is considered in Chapter II, concluding with an optimistic scenario in terms of output growth and increasing volumes of world trade, while oil prices are expected to increase slightly from average 1986 levels.

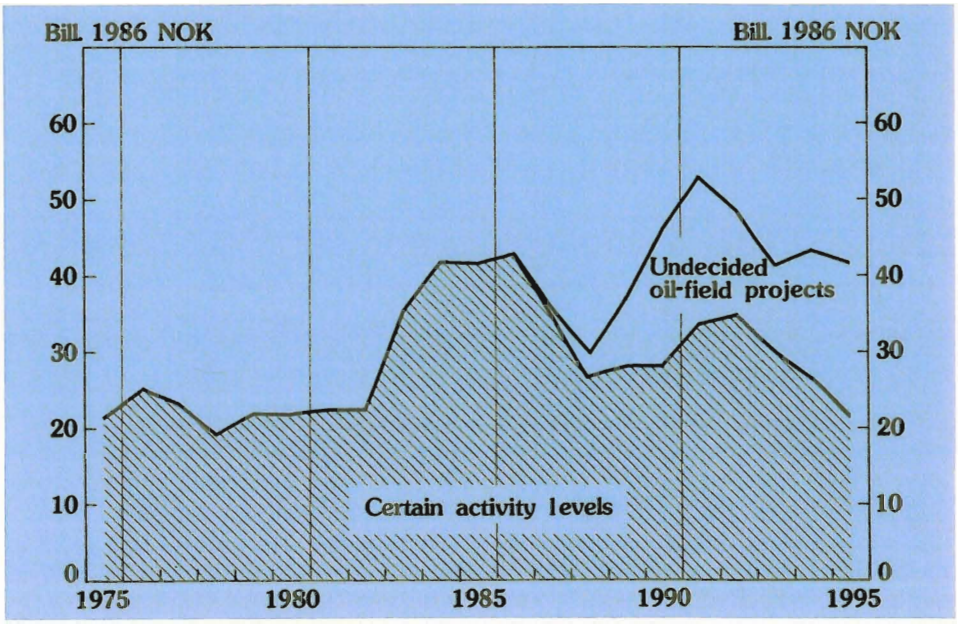
The assumption on oil prices is crucial for Norwegian economic prospects, since petroleum production will continue to be an important, and probably the major economic sector in the Norwegian economy for many years to come. Hence, special attention has to be paid to the outlooks for Norwegian petroleum activities and production for the period under consideration.

7.1 Norwegian Petroleum Outlook

Looking into Norwegian petroleum activities for the next 5 years, we have to make assumptions on how oil prices shall develop 10–20 years from now. For the purpose of analysing likely field development activities, we apply a price scenario assuming a modest rise in real oil prices, so that they reach 25 USD/bbl (1986 prices) in 2005.

Figure V:9 shows future activity levels in the Norwegian petroleum sector. The hatched area represents the activity base, consisting of investments in fields where development decisions already have been made, operational costs for producing fields, and exploration activities at half the level of 1985. The dotted line represents what we estimate to become maximum activity levels, including undecided oil field developments which we find profitable under our price scenario, and operation costs which follow from these. There is, however, much uncertainty attached to the timing of these new, and not yet decided, oil projects.

Figure V:9 Total Norwegian petroleum activity levels, 1975–1995
Billion NOK, at 1985 prices



Source: Institute of Industrial Economics

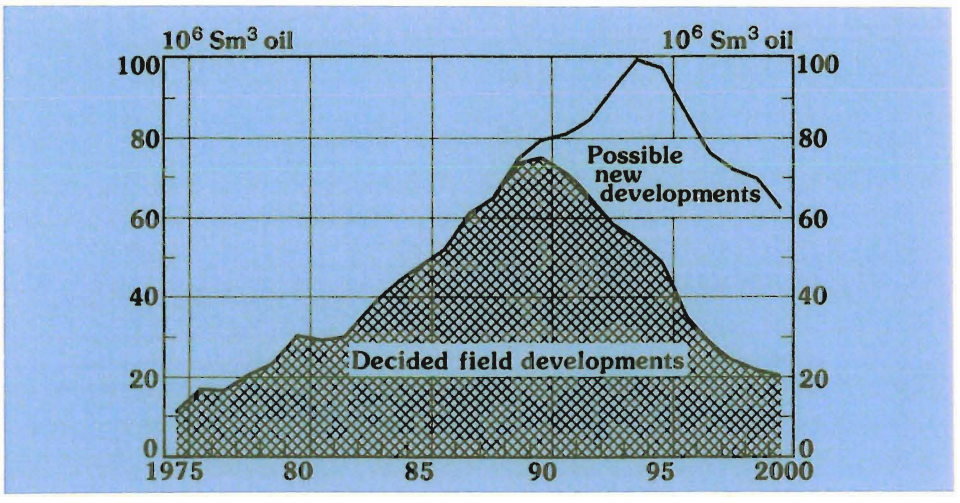
Outlooks are not necessary gloomy. Activity levels will drop, but a firm base at some 25 per cent below current levels, will exist.

But while domestic petroleum activities so far mainly have been connected to investments, either exploration for undiscovered petroleum reserves or field developments, they will for the future consist more of operation and maintenance work. Field development costs are likely to be at the lowest in 1988/89, may be only 50 per cent of current levels, and we expect exploration activities at half the 1985 level for the 1987–1990 period.

This means that the petroleum sector will not contribute to additional demand impulses for the mainland economy over the period considered. Rather, a slight decrease in this demand is to be expected.

However, volumes of Norwegian petroleum production is expected to grow due to commencing production from petroleum fields under development (Figure V:10 and V:11). Norwegian oil production will grow by an annual rate of 8–9 per cent up to 1990, while Norwegian gas production will keep up current levels. Altogether, Norwegian petroleum production is expected to increase by an annual 7 per cent on the average.

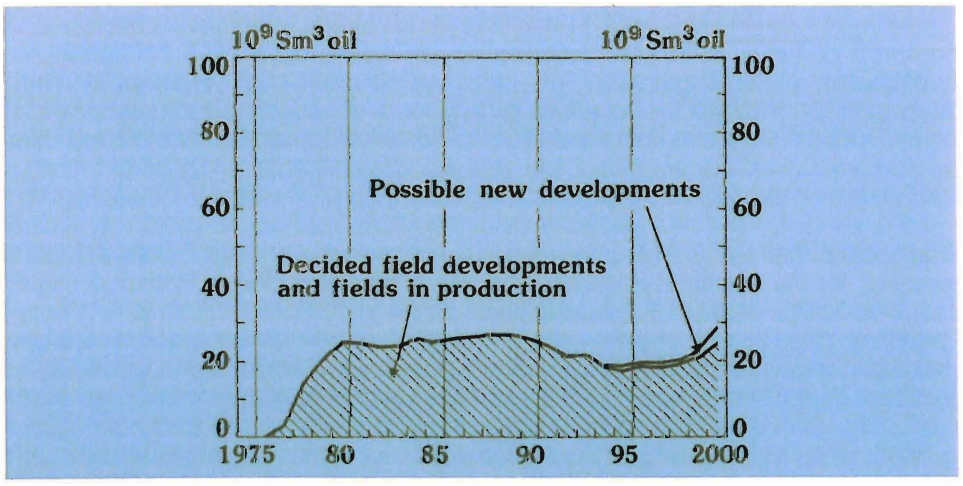
Figure V:10 Volume of Norwegian oil production, 1975–2000
Mill. standard m^3



Source: Institute of Industrial Economics

This growth in petroleum output is of importance for Norwegian revenue making during the period considered. However, when drawing this picture of increasing volumes, we have not taken the possibility of volume restrictions on oil production into account. But as far as revenue making is concerned, we expect that smaller volumes will be compensated by higher prices.

Figure V:11 Volume of Norwegian gas production, 1975–2000
Bill. standard m^3



Source: Institute of Industrial Economics

7.2 Estimates for the National Economy

As 1985 is applied as a base year for our estimates, low oil prices do not prevent growth in volume terms for the medium term future. Then, the petroleum sector contributed with some 20 per cent of Norwegian GDP, and more than 37 per cent of exports. As petroleum production is expected to increase by an annual average of 7 per cent in volume terms for the period under consideration, our method of calculation means that this will contribute with a partial increase of 1.4 per cent in GDP on an annual basis, and even more as far as exports are concerned.

However, if 1986 had been chosen as the base year for our forecasts, calculated growth would have been much smaller. Lower oil prices would then have reduced the base size of the petroleum sector within the Norwegian economy. Hence, the growth figures presented are sensitive to the base year chosen.

With these caveats in mind, we will present our considerations on growth prospects for the Norwegian economy for the remaining 1980s (Table V:4).

- the rapidly increasing *private consumption* through 1985, have continued during the first half of 1986. Even if consumption growth currently is slowing down, private consumption is expected to increase by some 4 per cent during 1986. The changing revenue situation within the economy, as well as the debt situation of individuals, will, however, slow down private consumption from 1987 and all through the period considered. Our estimate is that 1990 private consumption level will represent a 1.5 per cent annual growth from 1985 on the average, i.e. less than 1 per cent average growth for the remaining 1980s on an annual basis.

Table V:4 Balance of resources and expenditure, 1970–1990

	1985 mill. NOK	Annual average change in volume, %			Estimates
		1970→75	1975→80	1980→85	1985→90
GDP	497.835	4.6	4.8	3.1	2.1
Imports	195.570	6.2	.6	4.1	1.0
Total resources	693.411	5.1	3.5	3.4	1.6
Exports	234.984	5.3	5.5	5.1	3.5
Consumption					
– private	241.917	3.9	3.3	3.0	1.5
– public	92.594	5.3	5.3	4.0	2.0
Investments (incl. inventories)					
– private	110.210)	6.8	.1	.4	−2.0
– public	13.706)				1.0
Total demand	693.411	5.1	3.5	3.4	1.6

Source: Calculated from National Accounts, The Central Bureau of Statistics. Estimates made by IØI

- *public consumption* have for the last couple of years increased by lower rates than private consumption, and this seems to be the case for 1986, too. We do not, however, expect public consumption growth to slow down. Demographic changes shall require a steady increase in public expenses. Our estimate is a 2 per cent annual growth in public consumption up to 1990 on the average.

- levels of *private investments* depend heavily on field development projects in the petroleum sector. We expect the current investment boom to peak in 1986, and that petroleum investments will fall quite substantially in the years to come with 1988 as the bottom year. In 1990 petroleum investments at half the 1985 level are quite certain, and we consider it rather likely that they will be at the level of 70–90 percent of that in 1985.

  Private investments outside the petroleum sector are also at historic high levels in 1986. As exposed industries currently are in a profit squeeze, and domestic demand is stagnating, non-petroleum investments are likely to decrease in the short run. It is uncertain how long this downturn will last. We do, however, expect non-petroleum investments to accelerate from the late 1980s so that they almost reach 1985 levels by 1990.

  The current upturn of private investments – petroleum and non-petroleum – will by no doubt peak in 1986. As 1985 levels are not likely to occur by 1990, the downturn will be deep. Comparing 1990 with 1985 we expect a 2 percent annual average decrease in private investments.

- *public investments* have shown slow growth all through the latter decade. We expect that this trend will continue and predict public investments to grow by an annual average of 1 per cent up to 1990.

- Norwegian *exports* have increased for several years, both in volume and value terms. Our assumption on international trade should imply that non-petroleum commodity exports are to experience high and increasing demand impulses. Norwegian service exports, i.e. mainly shipping, is, however, expected to decrease further. We expect the net effect to show up as a slow growth in non-petroleum exports – approximately 1 per cent on an annual basis. In other words, the major factor behind Norwegian export growth for the medium term future will be the 7 per cent annual increase in petroleum production. Altogether this implies that Norwegian export volumes is expected to grow by an annual average of 3.5 per cent for the period considered, when 1985 is applied as the base year. However, due to lower oil prices, the value of annual exports is expected to be lower than in 1985 all through the period.

- *imports* have grown substantially through 1985 and 1986. Changes in the revenue situation, causing lower activity levels in the petroleum sector and in the domestic economy, imply that 1986 may be a top year so far for import volumes. Hence, import volumes should be expected to decrease over the remaining period under condideration. We do, however, expect the volume of imports in 1990 to be at a level equivalent to an annual average growth of 1 % in compared to 1985.

- the pattern of development for consumption, investments, exports, and imports, as described above, implies that *Norwegian GDP* are to rise by an annual average of some 2 per cent when 1990 is compared to 1985. This growth is

weaker than Norwegian growth rates for the mid-eighties, and below the expected OECD average. Further, the major component of this growth is to be expanding petroleum production, implying that hardly any growth should be expected in non-petroleum industries from 1986 to 1990 after the 4 per cent increase through 1986. As oil prices are expected to stay between 15–20 USD/bbl, Norway will consequently experience a substantial reduction in real disposable income through 1986 and 1987. After 1987 real disposable incomes will once again increase, but probably not regaining 1985 levels until after 1990. Hence, under our assumptions Norway is by no doubt facing a recession.

The growth patterns will further cause *unemployment* to increase from the current low rate of less than 2 per cent of the labour force. Still, we do not expect open unemployment to stay above 3 per cent of the labour force as an average for the period considered.

At the same time Norwegian *inflation* will rise in the short term, contrary to the trends of most OECD countries. We expect that Norwegian inflation will continue to stay above average OECD inflation throughout the period. However, the inflation differential will gradually shrink.

As far as *external accounts* are concerned, huge deficits have occured already in 1986. Due to our oil price assumption, the expected volume increases in exports and volume reduction of imports, will not prevent rather huge deficits to prevail throughout the eighties. The balance situation will, however, be improving from 1987, and in 1990 we expect current account to balance with only a small deficit, equivalent to 1–2 per cent of GDP. Nevertheless, Norwegian net foreign debt will have increased quite substantially over this period, reaching approximately 30 per cent of GDP by 1990.

Central government accounts may also prove troublesome. Due to the petroleum tax system, the state is the risk taker as far as changing oil prices is concerned. However, when excluding financial transactions there should be possible to keep a sound fiscal balance.

On the other hand, public debt is bound to increase due to financial transactions; to the state bank system and in order to meet the state's obligations as a business investor. The latter obligations are mainly due to the reorganization of the state's participation in the petroleum activities, which took place in 1985, placing the state directly as the largest investor in new and ongoing field development projects in the Norwegian petroleum sector. With expected low oil prices, the state will experience that its petroleum tax revenues almost dry up, while it still have a huge negative cash flow from its direct petroleum engagement.

8. Industrial Revitalization – the One and Only Way Out

The medium term outlook of a recession in the Norwegian economy puts great demands on policies and business. It is, however, uncertain how this situation will be approached and how international markets actually are going to develop, influencing the longer term potential of the Norwegian economy. At least three distinguishing scenarios are revealed from our previous discussion regarding the patterns of development for the next 5 or 10 years.

Firstly, if our assumptions come true, Norway will run into severe imbalances if nothing is done to improve the situation. External accounts will show huge deficits. In turn, unemployment will increase and huge social costs will arise.

It is, however, possible that international markets will develop more beneficiary to Norway than we have assumed. The extreme of this second scenario is that another upward oil price jump occurs, implying that the oil price regain hights of the mid-eighties. Hence, Norway will once again regain its fortunate position from the previous decade.

These two scenarios both bear the features of a lottery. Everything is left to chance; either you win or you lose. The third scenario, on the other hand, include systematic efforts to develop and broaden capabilities and competitiveness within the industrial base, especially in non-petroleum related industries. Implemented successfully, this will result in a balanced and more sustainable future growth, almost regardless of how prices fluctuate in single markets.

Only the latter of these scenarios contains a recommendable strategy to pursue. It is the one and only Norway may rely on if she will attempt to improve current outlooks for the medium and long term future. This is really the lesson of 1986, strongly pointing to the industrial route ahead – the one of revitalizing non-petroleum related Norwegian business.

SUPPLEMENTARY TABLES

Table V:5 GDP by kind of economic activity, 1970–1990

	1985 mill. NOK	Annual average change in volume, %			
		1970→75	1975→80	1980→85	1985→90
Agriculture, forestry and mining	19.421	2.6	1.2	4.2	2.0
Petroleum and pipelines	98.455		35.3	6.3	5.5
Manufacturing	67.272	3.0	−0.4	0.5	0.5
Construction and electricity supply	47.840	3.7	3.2	2.3	1.5
Water transport	11.458	3.3	2.6	−0.6	−0.5
All (other) private services	175.075	4.3	3.9	2.5	1.5
Public sector production	67.840	5.7	6.0	4.1	2.0
Correction item	10.474	8.5	9.7	5.1	0.0

Table V:6 Balance of manpower resources, 1972–1990

	1985 Thousand persons	Average annual change, %			
		1972→75	1975→80	1980→85	1985→90
Population	4.159	0.6	0.4	0.4	0.3
Population of working age (15–74 years)	3.013	0.9	0.7	0.4	0.8
Labour force	2.064	1.4	2.2	1.2	1.3
Unemployed	51	12.6	−3.8	9.1	5–10
Employed	2.012	1.2	3.0	1.0	0.9–1.2

Source: Calculated from Labour Market Statistics, Central Bureau of Statistics, and IØI

Table V:7 Balance scores, 1970–1990

	1970	1975	1980	1985	1990
External accounts, % of GDP					
– Trade balance	−1.3	−6.7	6.1	7.9	2.0
– Balance on current account, excl. net interest payments	−1.6	−7.4	4.5	5.9	0.5
– Interest payments net	−0.5	−1.1	−2.6	−0.8	−2.0
– Net foreign debt	11.4	23.7	32.3	8.1	30.0
Public sector (consolidated) surplus, % of GDP	0.7	3.4	5.6	7.6	−1.0
Unemployment, % of labour force	1.7	2.3	1.7	2.5	4.0
Labour force participation rate, %	60.4	62.2	67.0	68.5	70.4
Inflation (consumer prices)	11.0	11.7	10.0	5.7	–

Source: Calculated from National Account Statistics and Labour Markets Statistics, Central Bureau of Statistics, and IØI

CHAPTER VI

Sweden: Is Something Wrong with the Growth Engine?

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1. Introduction

The previous Nordic analysis predicted a considerable growth potential in the Swedish economy following the devaluation of the Swedish krona in 1982 (Economic Growth in a Nordic Perspective, 1984, pp. 153–179). This development was conditioned by the assumptions of the world economic environment made common to the four Nordic forecasts and by certain domestic policies from 1984. Two policy scenarios were presented – one "successful" in the long term, and one "inflationary" scenario, appearing to be successful in the short term, but not so in the long term. The major differences between the two scenarios were expected to appear from 1985 and onwards. Recent reorientations of Swedish policy and the unexpected drop in oil prices make significant revisions in our forecasts necessary and form the basis for the new assessment for 1985–90, to be presented in this chapter. However, if the effects of unexpected world economic changes are removed from our earlier forecast, actual domestic development appears to have been following the inflationary scenario more closely than the successful one, in short, world economic development has been "kind to" the Swedish economy.

The devaluation of 1982 generated a short period of recovery with a substantial increase in industrial production and in exports. After a long period of deficits, the current account showed a small surplus in 1984. However, recent developments in the Swedish economy show many of the trendbreaks to have been only temporary (see Section 2). Thus, it is still relevant to ask to what extent and in what sense Swedish industry has lost its *basic competitive edge*. Has the Swedish supply structure not adopted to changing world market conditions, and to what extent is Swedish industry suffering from cost-inefficiencies? Many argue that both, or at least one of these deficiencies continues to prevail. The arguments for Sweden often stress the importance of developments in relative unit labor costs as an indicator of changing competitiveness, and refer to a favorable unit labor cost development after a considerable decline in the 1980s. In sharp contrast to these arguments empirical evidence shows that Sweden, after a short period of resumed growth, still continues to lose market shares in world trade. Thus, the assessment of the competitive position of Swedish industry is still somewhat confused. An attempt to shed light on the situation is made in Section 3.

Since the Swedish economy is in a phase of restructuring, the allocation of key resources, in particular capital and labor, is of significant importance. An inefficient *capital allocation* process might explain why industrial production is levelling out while Swedish industry nevertheless appears to be highly competitive (see Special Study 2). Regulations and administrative pricing mechanisms have been frequently used and they have created distortions and unfavorable allocation effects. The development during the 1980s is calling for new kinds of risk capital and the creation and development of a well functioning capital market is critical for this supply (Eliasson et al., 1985). The tax system distorts capital allocation and the distribution of corporate profits, while fiscal deficits and public foreign debt adversely affect interest rates and investment. In Section 4 we discuss capital market issues, relevant to growth in Swedish industry.

The *allocation of human resources* is also constrained by bottlenecks in the supply of certain categories of skilled manpower, low mobility, etc. An inadequate incentive structure appears to be the main explanation. The tax system and a too narrow wage dispersion are two factors behind rigidities in the labor market (see Special Study 3). Section 5 is devoted to a discussion of these issues.

Taken together institutional phenomena contribute to the slow growth in manufacturing production experienced since the mid 1970s. In Section 6 we discuss some further threat to the growth prospects such as the classical wealth effect.

The projections follow in Section 7. As the Swedish economy is highly energy intensive and exposed to fluctuations in oil prices, the recent fall in oil prices raises several important policy issues. The structural response to the price fall – being initially favorable to the economy – will critically affect long-term economic prospects of the Swedish economy.

Before the analysis a brief description of the current state of the Swedish economy will be presented together with a comparison of the 1984 forecasts[1)] and the outcome up to 1985. This introductory section will highlight the importance of changing environmental conditions.

2. Current State of the Swedish Economy

The 1984 analysis identified five critical long-term characteristics of Swedish economic development up to the devaluations of the early 1980s.

First, the real growth trend had tilted downwards. Up to the middle of the 1970s the Swedish economy was able to stay on a fairly stable growth path. The annual increase in manufacturing production – seen over a century – was about 5 per cent. An expansionary policy during the first oil crisis years temporarily bridged the recession, but after the peak in 1974 and up to 1982 the trend was reversed in a downward direction. The annual increase in labor productivity had fallen to less than half the rate of the previous decade.

Full employment has been the prime objective of Swedish economic policy in the postwar period, and in this respect the policy has been successful. In an international comparison, rates of unemployment were lower, even when people participating in labor market programs are included. In the early 1980s, however, the rates of unemployment increased from the level of 2 per cent maintained during the 1970s, to the current rate of 3.0–3.5 per cent. Despite the increase the social costs of maintaining these low unemployment figures continued to be reflected in the rapid accumulation of public and foreign debt, eroding the capacity of continuing the same policies. The irony of the situation is that, because of these dynamic imbalances, the "artificial" short-term success on the employment side may create *more* unemployment during the next decade (Eliasson et al., 1985).

Second, persistent *current account deficits* and the consequent accumulation of foreign debt and debt service presented the Swedish economy with a major problem. The devaluations of the Swedish krona in 1981 and 1982 instantaneously and dramatically increased the value in SEK of the foreign debt. On the other hand, the devaluations stimulated Swedish exports and helped to achieve a positive trade balance 1983–85, in contrast to the period 1974–82. The critical policy issue, to be discussed below, is whether this respite has been used to pave the way for future balanced economic growth, or as an excuse to do nothing.

[1)] In *Economic Growth in a Nordic Perspective* (1984).

Third, the *consolidated public budget* had been showing deficits since 1978 even after having taken cyclical variations into account. As a share of GDP the tax seems to have peaked that year while the expenditure share continued to increase.

Fourth, a marked reduction in *national savings* as a share of national income had been observed since the mid 1970s – a decline accompanied by an almost equal decline in the share of investment in value added.

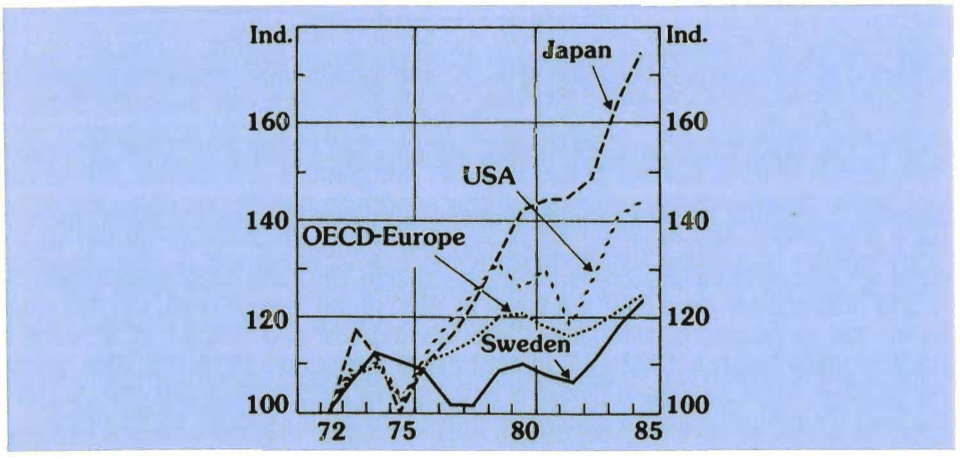
Fifth, Swedish *inflation* had been running slightly higher than in major competitor nations for many years, suggesting a need for future corrective devaluations, or more fiscal and monetary restraint.

What happened after the devaluations of the early 1980s?

The devaluations to promote export growth created a recovery which was different from the recovery of 1978–80. At that time the major contribution to growth in real GDP was public sector demand growth. Today, export industries generate the growth in output, but no consequent increase in employment is expected. In the ongoing recovery, growth of final domestic demand is currently at a significantly lower rate than GDP growth; private investment being its major component. Exports are contributing 3–4 times as much to growth as in the recovery of 1978–80.

The 1982 devaluation started an upswing in manufacturing production which in 1984, for the first time, brought it back to, or slightly above the 1974 level (see Figure VI:1). However the *rate of real growth* in manufacturing output seems to

Figure VI:1 Manufacturing production in OECD-Europe, USA, Japan and Sweden, 1972–85
Index 1972=100



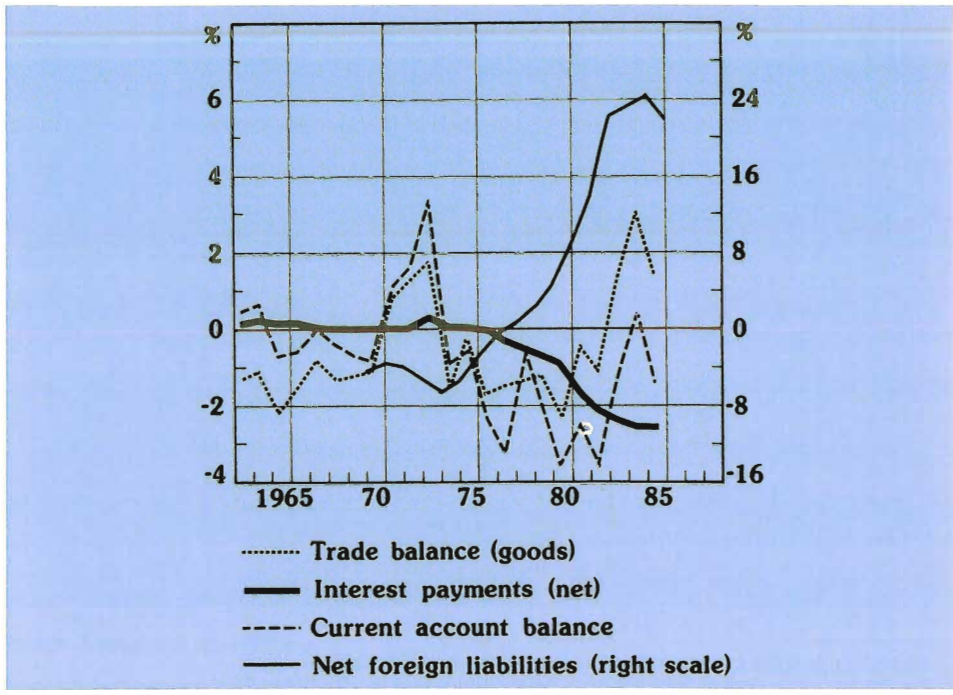
Source: Eliasson et al. (1985), p. 90

have peaked in 1985. Since we are continuing towards a "software", service oriented economy, manufacturing production should not be analyzed separated from private services; in 1985 the share of private services in GDP was about 50 per cent higher than the share of manufacturing and mining industries. Looking at the total private sector, output has stagnated since no compensating growth in private services has occurred.

Despite the recovery, average rates of unemployment have been higher in 1982–85 than during the period 1974–82. Yet, during the recent period, shortages of skilled technical workers etc. have been experienced, indicating a structural problem in the labor market, partly caused by rigid wage and salary setting practices (Deiaco, 1986).

What happened to the *external balance*? Defending an inadequate parity rate in a fixed or semi-fixed exchange rate regime like the Swedish one will produce external imbalances like those shown in Figure VI:2. Due to an overvalued krona in the beginning of the 1970s Swedish industry has to generate a net trade inflow in excess of what a krona in parity would generate to be able to handle the debt service of the Swedish economy. The devaluations in 1981 and 1982 generated rapidly increasing trade surpluses and even a substantially improved *current account*. However, figures for 1985 exhibited a substantially reduced trade surplus

Figure VI:2 Swedish economy – external balances, 1963–85
Per cent of GDP



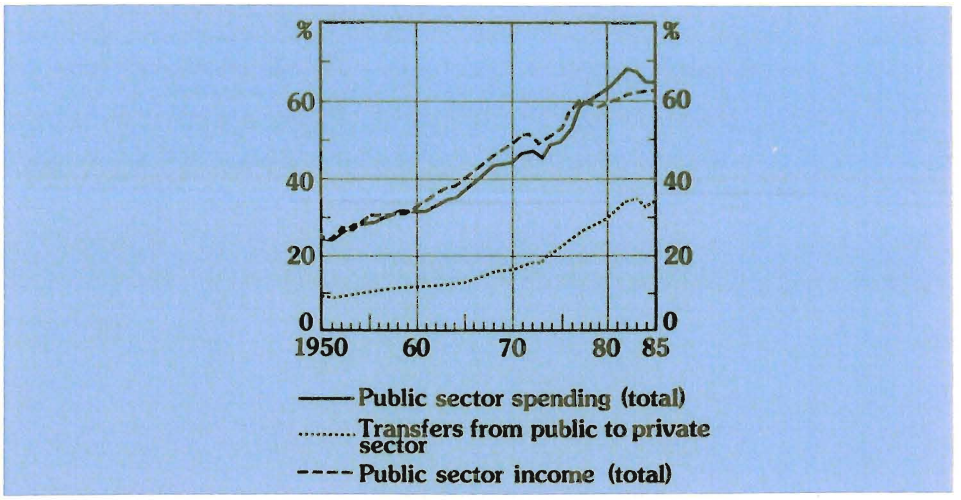
Source: Eliasson et al. (1985), p. 67

and a current account deficit amounting to 9 billion SEK.[1] Figures for 1986 indicate a moderate current account surplus, to a large extent[2] explained by a decrease in the value of imports due to lower oil prices. A "structural" current account deficit still appears to remain in the sense that the account will be negative under "normal" business cycle conditions.

The importance of interest rate payments as a part of the current account deficit is also illustrated in Figure VI:2. Transfers exhibit a strong increasing tendency.

Furthermore, Swedish indebtedness has increased rather than decreased. At the end of 1985 total public debt represented 65.1 per cent of GDP. Foreign public net debt was equal to 16.2 per cent of GDP. Indebtedness has developed very fast. Up to 1977 the Government/Central Bank recorded positive net foreign positions. Sweden still has the best rating – an AAA-rating – as international borrower, but the debt service will soon become a heavy burden and may change this assessment. Since the amounts originally borrowed have been used for consumption rather than investment in growth capacity, no future export effects to help amortize the debt should be expected.

Figure VI:3 Consolidated public sector spending, income and debt, 1950–85
Per cent of GDP



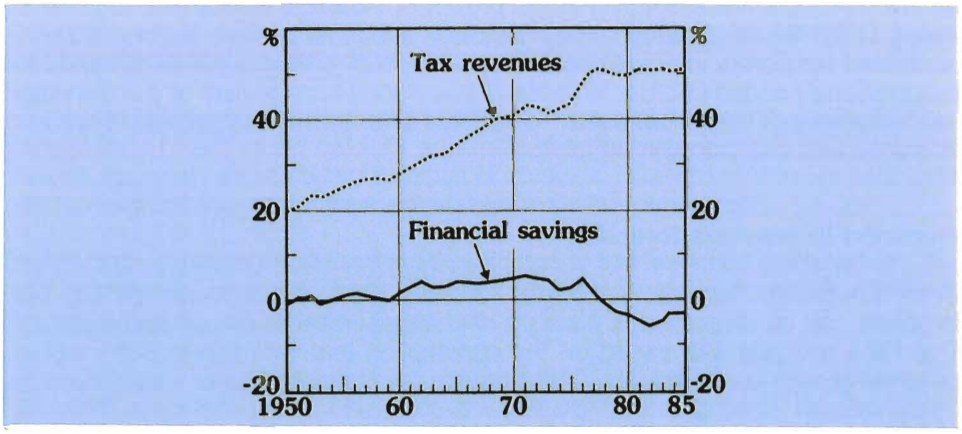
Source: National Account Statistics and IUI estimates

[1] According to figures, reported by the Central Bank of Sweden.
[2] For the first 10 months of 1986 the trade balance improved by 19.6 billion SEK compared to the same period the year before. 15–16 billions of this amount can be ascribed to the fall in oil prices according to the Swedish Statistical Bureau.

Public sector expansion since the mid 1970s – in order to create new jobs – led to large deficits in the *consolidated public budget*. However, the trend towards a growing deficit was reversed in 1982 (see Figure VI:3). The budget for the fiscal year 1986/87 announces a smaller deficit as a percentage of GDP. Lower oil prices, favorable exchange rates and lower interest rates might make the deficit even smaller than calculated. Still, there is a long way to go to get the public budget balanced. The level of public spending and the deficit are often claimed to be sources of both price distortions and inflation – blown up still further by the tax system (Södersten and Lindberg, 1983; Axell, 1985). The financial impact of public sector expansion on taxation is illustrated in Figure VI:4.

Combined with labor market rigidity the full employment ambitions have contributed to a considerably higher *inflation* in Sweden. Table VI:1 shows that Sweden has recorded a relatively higher inflation rate for the last few years than in major competitor economies. An effort to reduce inflation by influencing expectations was made during 1983–85. In 1985 the target rate of inflation was set to 3 per cent by the government. The actual outcome was 7.4, as compared with an OECD-average rate of 4.6. In its calculations for 1986, the government predicts the inflation rate to fall to 3.5 per cent, a forecast still above the OECD average. Referring to falling oil prices and lower interest rates, the price increases in official estimates are expected to come down further, to an annual rate of 2 per cent during 1986.[1)]

Figure VI:4 The public sector – tax revenues and financial savings, 1950–85
Per cent of GDP



Source: Eliasson et al. (1985)

[1)] According to Swedish National Institute of Economic Research.

Table VI:1 Inflation in Sweden as compared to major OECD-countries, 1961–85
Percentage change between annual averages

	At annual average change					
	1961→70	1971→81	1982	1983	1984	1985
Sweden	4.0	9.5	8.6	8.9	8.0	7.4
United States	2.8	8.1	6.1	3.2	4.3	3.5
Japan	5.8	8.6	2.7	1.9	2.2	2.1
Germany	2.7	5.2	5.3	3.3	2.4	2.2
Austria	3.6	6.3	5.4	3.3	5.6	3.2
Denmark	5.9	10.0	10.1	6.9	6.3	4.7
Finland	5.0	11.3	9.6	8.3	7.0	5.9
Netherlands	4.0	7.3	6.0	2.8	3.3	2.3
Norway	4.5	8.9	11.3	8.9	6.2	5.7
Switzerland	3.3	5.1	5.6	3.0	3.0	3.4
Major Seven	3.2	8.7	7.0	4.5	4.5	3.8
OECD Europe	3.8	10.6	10.5	8.3	7.4	6.6
OECD Total	3.3	9.2	7.8	5.3	5.3	4.6

Sources: OECD and Swedish National Institute of Economic Research

In conclusion, turbulence in financial markets and the dramatic drop in oil prices make it hard to compare economic development during 1982–85 with the 1984 Nordic projection. The devaluations of the Swedish krona in 1981 and 1982 meant a strong demand stimulus to the Swedish economy. However, inflation is still above the international average and will for 1986 be well above the official estimate of 2 per cent mentioned in the previous section. The public deficit – the cause of the inflation – is diminishing but is still huge. Private savings continue to be low. A substantial slowdown in the growth of industrial output was registered during 1985–86, suggesting that devaluations and other positive factors had only generated temporary improvements. Thus, the policy changes called for, and the assumptions needed in order to achieve stable long-term growth of the Swedish economy are still the critical issue. To address it, let us first compare our previous forecasts with the outcome so far.

Precision in previous forecasts

Even though the forecast period for "Nordic 1984" has not yet ended, the forecasts can be discussed in the light of changes in some critical assumptions. The 1984 analysis was based on the assumption that Swedish industry would generate growth above the OECD-average on the profit stimulus of a considerably "undervalued" Swedish krona. We presented two alternative scenarios. The first was based on the assumption of an economic policy aimed at preserving the competitive edge created by the devaluations of the Swedish krona in 1981 and 1982. This scenario assumed a tight demand policy. Initially, such a policy was assumed to result in a growing open unemployment. In a long-term perspective, however, favorable circumstances for growth were expected for the second half of

the 1980s. GDP was estimated to increase by 2 per cent per year, which represented a more modest growth perspective than earlier IUI forecasts had provided. The reason was an unfavorable starting point for recovery. This alternative was seen – given external world assumption – as the only way of return to a stable long-run growth path before the end of the 1980s.

Our inflationary scenario, on the other hand, was expected to improve the employment record initially. A slightly higher level of total consumption was assumed for 1984. As a consequence, inflation was expected to accelerate during 1985, economic growth to slow down and both the external and internal balance to gradually deteriorate. The increase in unemployment from 1985 and onwards was estimated to be considerable. The two scenarios are put together in Table VI:2 as a base for an outcome analysis.

The actual outcome as presented in the beginning of section 2 gives no definite answer to which scenario has come true. The calculated difference between the two scenarios depended on the duration of the improvement following the devaluation. The most recent development indicates that the likely outcome still will have something in common with both scenarios. In general, however, the figures will not be as bad as in the inflationary scenario since world economic development has been better than expected. But, as in the inflationary scenario, a higher *inflation rate* than that of competitor nations has nearly "consumed" the (price) competitive advantage provided by the devaluations.

On the whole, after corrections for the influence of mistaken world assumptions, actual development so far seems mostly in line with the inflationary scenario. Actual GDP growth, however, runs ahead of both forecasts due to improvved growth in world demand. Hence, the employment forecast also underestimated actual development in a way consistent with our underestimation of the growth of industrial production. The average annual change in investments has also been higher than projected. The downward tendency in public investments continued 1982–85, while residential investment rose primarily due to restoration work. However, the most important component in the considerable growth in total investments is the growth in private investments, which we clearly underestimated. The largest increase is noted for investments in machinery and in the business area. 1984–85 investment activities even meant growth in net investments in both basic and machinery industries.

Our consumption as well as price projections have, so far, been accurate. But our calculations of prices did not fully anticipate the decrease in world inflation. This means that even with a correct forecast of domestic inflation we failed to anticipate the duration of the competitive advantage from the devaluation.

Net-foreign liabilities decreased in 1984/85 due to this favorable development, but still considerably exceed our estimates in the successful scenario. In 1985 net foreign liabilities still exceed 20 per cent of GDP.

The favorable development of the world financial scenario – from a Swedish viewpoint – has influenced the size of the budget deficits which has decreased from 13 per cent of GDP in 1982/83 to slightly over 5 per cent for the fiscal year 1986/87. We are here well below our forecasts from the "inflationary" scenario. Public debt is consistently deviating from the forecast of 120 % of GDP. Net public debt in 1985/86 represented some 40 per cent of GDP, while gross public debt

Table VI:2 The Swedish economy, 1982–87
Forecast and outcome

A. Balance of resources

	1982 Mill SEK	Average annual change in volume, %			
		Forecasted development, 1982→87			
		I The successful policy scenario	II The inflationary policy scenario	Outcome 1982→85	Forecast residual Scenario I 1986–87
GDP	627 678	2.0	1.5	2.7	0.9
Imports	205 157	3.6	3.0	4.1	2.8
Total resources	832 835	2.4	1.8	3.1	1.4
Exports	201 331	5.6	4.0	6.6	4.1
Investments	118 236	0.9	1.0	4.0	−3.6
private	43 210	3.4	1.0	9.1	−4.6
public	42 280	0.3	2.0	−0.7	1.8
residential	32 746	−2.8	−0.5	2.7	−10.5
Consumption	519 361	0.8	0.7	1.0	0.5
private	336 650	0.7	0.1	0.4	1.1
public	182 711	0.9	1.9	2.0	−0.7
Inventory changes*	−6 093	..	..	..	..
Total demand	832 835	2.4	1.8	3.1	1.4

* Incl. statistical discrepancy

B. Manpower (1 000 persons 1982 and changes to 1987)					
Labor force	4 357	58		67	−9
Employment	4 219	−24		80	−56
Unemployment	137	83	163	−12	95
(% of labor force end year)	3.2	5.0 (1987)	6.8 (1987)	2.8 (1985)	
C. Households					
Disposable income	335 610	0.9		0.5	1.5
Savings ratio	0.5	2.5		0.6	5.4
D. Manufacturing and mining					
Production		2.1		4.7	−1.7
Productivity		3.5		5.2	0.9
Investment		3.7		11.2	−6.6
Investment/Value added, %		13.3			
E. Prices, etc.					
Producer prices		8.5		8.4	8.7
Export prices		8.0		7.9	8.1
Import prices		7.6		7.0	8.5
Consumer prices		8.2		8.1	8.4
F. External balance (% of GDP)					
Trade balance		2.5 (1987)	2.1 (1987)	1.9 (1985)	
Current account (excl. interest payments)		2.5 (1987)		1.6 (1985)	
Interest payments, net		−1.9 (1987)	−3.9 (1987)	−2.7 (1985)	
Net foreign debt		−15.0 (1987)	−30.0 (1987)	−22.0 (1985)	

Table VI:2 (continues...)

G. Public sector 1987 (forecast)

	Bill SEK	% of GDP	% of GDP
Budget deficit	−150	−14	−7.1 (1985/86)
Deficit in consolidated public sector	−160	−15	−2.2 (1985/86)
Public debt	−1 300	−120	−70.5 (1985/86)
Interest on public debt	−155	−15	−7.7 (1985/86)

Sources: IUI and Ministry of Finance

was about 25 percentage points higher. However, the rates have been steadily increasing since 1975/76.

As a relatively small economy – with about 35 per cent of total output exported – Sweden is highly sensitive to fluctuations in the world markets for goods. In our global scenario for "Nordic 1984" we anticipated a decline in the real effective US dollar exchange rate, a fall in oil prices and a drop in the general inflation and in interest levels. All these assumptions came true, but in a stronger sense than expected.

New macroeconomic assumptions

Our experiences from the "Nordic 1984" forecasts provide a new point of departure relative to Swedish competitor economies making the following policy issues crucial for our projections for the Swedish economy 1985–90;

- Open unemployment will be steadily rising, partly because of the gradual curtailment of labor market programs that have so far concealed the extent of the unemployment situation. Figures will, however, not reach OECD European levels, in effect placing Sweden at the lower end of a European Phillips curve.

- Swedish inflation will be above the OECD average which, however, will be quite low by the standards of the 1970s. Thus, the price competitive advantage is continually being eroded. We see no political possibility to significantly change the parity of the Swedish krona again.

- The favorable relative unit labor cost situation in Sweden provides additional degrees of freedom for industrial expansion in a broader sense. This advantage will diminish but probably persist for the whole forecasting period. We will return to this issue in Section 3.

- A sustained improvement of the current external balance must be based on a continued reduction of the public sector deficit, primarily – we believe – through expenditure restraint.

- Frequent policy interventions – changing the rules of the game – have distorted the information content of market prices. Even if the cost of each single intervention might appear relatively low in comparison with short-run welfare

gains, these interventions taken together represent a major distortion of the market signalling system. During 1985–90 stable rules and careful interventions are required since they both heavily influence the allocation of resources in a way which might seriously affect long-term economic growth.

The prospects for solving remaining structural deficits seem good, since recent policy making in Sweden indicates that politicians are *aware* of the importance of keeping increases in hourly earnings low relative to major competitive economies and of reducing public sector expenditures. But the ability of the government to make the rules of the game explicit and stable in order to *convince* industrial decision-makers to invest in capacity for export-oriented production is still debated. And the outcome on this end evades prediction since it will necessarily involve a break with past Swedish policy traditions. Thus the way back to external as well as internal balance without generating new imbalances requires a policy that supports expansion of the private sector from the supply side and an increase in exports. In the following three sections we will discuss key elements of the industrial growth engine and its capacity to return the economy in the period 1985–90 to the old growth trends.

3. Is the Loss of World Market Shares a Matter of Corporate Disillusions?

What should we mean by competitiveness?

There is an economic debate about what is meant by and how to measure the competitive edge of firms and industries. At a comprehensive level the assessment of *the international competitiveness* of an industry or a nation, must be carried out by studying *the ability to sustain, over the longer term, a relatively higher growth rate in output than competing industries or nations* (Eliasson, 1972). The analysis of a deteriorating or improving competitive position hence, boils down to studying the factors behind differing growth rates. This approach also places relative rates of return in manufacturing and export industries in focus. Balance of payments and other imbalances are to be seen as *only* intermediate, short-term reflections of problems associated with internal domestic imbalances between supply and total demand.

Hence, the analysis of this section will be organized as follows. We start with the notion of competitiveness as the ability to sustain a rate of return that makes it possible for a firm or an industry to grow faster than competing firms or industries. We then study the development of various components of the rates of return to understand why Swedish market shares in world trade have not developed favorably despite a favorable unit labor cost development in international currency. This analysis takes us back to the rate of return outlook as the prime reason for the reluctance of firms to engage in volume expansion through investing in factory processing equipment.

Competition can be divided into two categories – price competition and competition using other variables associated with the quality of the products. The first kind of competition involves taking advantage of favorable exchange rates

and interest rates in the pricing policy of the firm. The pricing decision is based on the trade-off between gross margins and market shares, taking price elasticity into account. Price competition has a short-term character as opposed to competition based on other characteristics, notably related to R&D spending for product development and marketing efforts, mostly through foreign subsidiaries.[1)]

Market shares decline

Before measuring the overall competitiveness of Swedish exports we are taking a look at Swedish market shares in the world trade since the beginning of the 1970s. The product mix and the mix of markets are two explanatory factors behind this development.[2)]

Horwitz (1986) reports a systematic tendency to market share losses caused by these factors. Losses due to the market mix are most important. The choice of products heavily influences the result of calculations of a measure of competitiveness. For Swedish export only a small number of products (transport equipment, medical products and oil products) have increased their market shares in expanding markets.[3)] A considerable part of machinery exports falls within the 20 per cent of the products in Swedish exports which have realized market share losses in markets with very weak expansion. Losses of market shares are primarily concentrated to important markets in other Nordic countries and in Great Britain.

From 1979 to 1984 Swedish exports suffered a 15.6 per cent loss of market shares in manufactured goods (excl. ships and aircrafts). Horwitz finds that the loss of "competitiveness" is only 5 per cent, while the product mix accounts for a loss of 3.4 per cent and the market mix for a loss of 7.2 per cent. The loss of market shares due to the loss of competitive edge according to Horwitz' constant-market-share analysis is worth noting since it has come true despite the fact that price increases in international currency have been lower in Sweden than in competitor economies. However, the negative trend might to a large extent be explained by supply restrictions and/or insufficient flexibility in chanelling resources to more expansive industrial areas.

A continuing decrease in relative prices of Swedish goods has been observed. Its magnitude, however, varies between statistical sources. A comparison of relative prices and the cost situation is needed to understand price competition.

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1) See Eliasson (1986).

2) These factors can be separated from the overall competitiveness by a constant-market-share technique. The result from an application of that technique is reported in Horwitz (1984). See also later updatings of the results in Horwitz (1986). Other factors to take into account are the impact from public sector expansion in crowding out industrial capacity and the profit squeeze in Swedish industry.

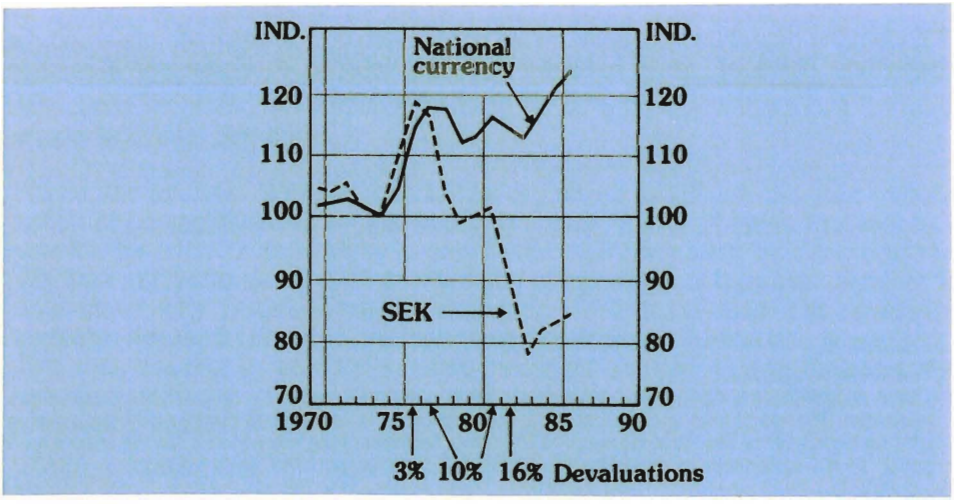
3) These products together with paper exports contributed to about one third of total Swedish export value.

In doing so we distinguish between price-takers and price-setters. The price-takers are only concerned about the relationship between the world market price and domestic costs. A favorable change of the exchange rate will increase the gross margin in Swedish kronor. A decrease in market shares for a true price-taker will signal a decrease in competition – as in Horwitz' analysis – when effects of the product mix and the market mix have been taken into account. About half of Swedish export firms can be roughly classified as price-takers. The other half of Swedish export firms can be characterized as price-setters, which enjoy a monopoly position in their markets. For these firms we have to estimate the leeway for autonomous price setting and quantity adjustment. This essentially means estimating their export price elasticities. Price competition is not interesting if the elasticity is smaller than minus one. A study of price development in international currency in the form of a purchasing parity study will provide information about gross margin improvements for the price-setter and its price setting autonomy. The purchasing power parity study has to be carried out from the market side (product prices) as well as from the factor side (labor costs).

Purchasing power parity may help analyzing short-term competitiveness

Evaluating the short-term competitive position of a country can be done by the help of an index of purchasing power parity (PPP). The choice of price index is critical.[1)] Relative unit labor cost indices are often used in studies comparing cost competitiveness. However, here differences among countries concerning pay-roll taxes etc. cause problems of comparison. The producer price index or the

Figure VI:5 Relative unit labor costs in Swedish manufacturing industry as compared to the OECD-countries, 1970–86
Index 1974=100



[1)] See Oxelheim (1985), pp. 110–118, for a further discussion.

wholesale price index are other indices used in the PPP calculations for comparison of product market prices. To the extent that these PPP indices deviate from their long-term equilibrium we have a competitive advantage or disadvantage. However, as was previously stressed, the deviations alone carry no information about the basic competitive advantage based on the characteristics of the product.

The devaluations in 1981 and 1982 brought Swedish unit labor costs down to the extraordinary favorable level shown in Figure VI:5. This gave Swedish industry a significant advantage on the cost side. In 1984, unit labor costs increased again. However, at the end of 1986 there was still about 20 per cent left of the cost advantages created by the two devaluations in the early 1980s, before Sweden is back to the relative wage cost situation at the beginning of the 1970s.

Swedish hourly earnings and hourly labor costs – measured in a common currency – are currently in the middle of the OECD-range. Exchange rate adjustments account for most of our relative cost advantage. With the exception of a couple of years in the beginning of the 1980s, the annual percentage change in hourly earnings for Swedish industrial workers has been higher than the average for 14 major industrial nations. This pattern is reinforced by a new pattern in Swedish wage negotiations. Previously, the Employers' Confederation negotiated with one dominant labor organization. Today, at least three strong labor organizations watch each other and compete with one another for the "best" contract.

No market share increases from devaluation

The 1982 devaluation appears to have worked differently from the other Swedish devaluations after 1974. The last devaluation was intended to stimulate Swedish export industries to regain market shares through price competition, not primarily to improve corporate gross margins. However, the actual and temporary recovery of market shares in 1983/84 was not only an effect of the devaluations but can to a large extent be explained by reference to extraordinary factors – like for instance the strike in the Canadian paper and pulp industry.

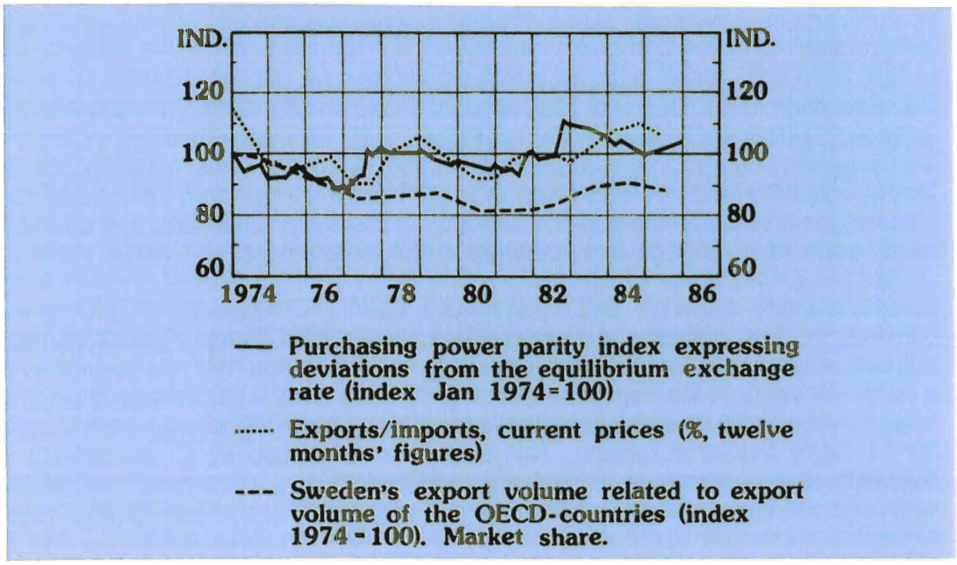
Despite the favorable unit labor cost situation Sweden lost world market shares in 1985. A great deal of the explanation is to be found in firm pricing policies. Companies that compete with prices were more concerned with consolidating their balance sheets and to raise their short-term profit margins than with lowering prices to increase volumes. The experience of the 1970s made them unwilling to take on more risk through expansion. As we will argue below, this was sound policy for producers in the price taking category.

The development of world market shares of Swedish producers and deviations from purchasing power parity measured by producer prices are shown in Figure VI:6. The figure suggests that the competitive advantage in pricing created by the devaluation has almost disappeared.[1] Despite an undervaluated Swedish krona Swedish manufacturing industry did not manage to regain market shares during 1984–85.

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[1] Another way of interpreting the figure is that the Swedish krona was still undervalued – with a few per cent – at the end of 1985.

Figure VI:6 Purchasing power parity index SEK/basket currencies, 1974–85
Monthly data



Source: Oxelheim (1985), pp. 123

Estimates of the Swedish National Institute of Economic Research suggest that 90 per cent of market shares gains should materialize within two years of a devaluation. This time the gains in market shares seem small as compared to the size of the devaluation. Correcting for increases in the price of imported goods a potential decrease in the relative export price of Swedish manufacturing of 18 per cent is obtained. The actual decrease in relative price was only 9 per cent from the second part of 1981 to 1984. The difference is to a large extent explained by increased costs of investment goods – in excess of what is caused by the devaluations and/or increased corporate profits. Thus, from a theoretical point of view the outcome in terms of market shares is almost equal to the estimates based on the actual decrease in relative prices.

No more investments from higher profits?

Supply restrictions like limited capacity and bottlenecks may have prevented a rapid expansion of shipments in response to improved profit margins. If firms realistically regarded the potential profit gains from the devaluations as temporary, they should *not* expand production and/or divert supplies from domestic to foreign markets.

For the same reason long-term realistic expectations about developments of demand, costs and prices do not suggest that firms should engage in significant increases in investment. This conclusion is reinforced by the relation between

expected rates of return and interest rates shown in Figure VI:8. The bulk of Swedish industry is not profitable enough to go for long-term capacity expansion. Hence, even though manufacturing firms currently are financially prepared to invest and expand capacity, the profitability outlook and uncertainties associated with future costs and prices make suggest that they wait and see.

New forms of capital

The analysis so far may give an exaggerated negative impression of the difficulties of Swedish manufacturing industries. As we observed in a recent IUI study (Eliasson et al., 1985), commercial and technological know-how in major Swedish export firms is clearly ahead of or equal to that of world competitors. Another recent IUI study (Pousette and Lindberg, 1986) shows that the large export firms have reoriented their capacity expansion toward product quality improvement rather than volume expansion. Most of this "expansion" has taken place through large investments in R&D and in global market and distribution networks. Marketing investments explain the bulk of Swedish foreign investments. The output effects of such "soft" investments tend to be underestimated in statistics, or are not picked up at all.

4. The Imbalances and their Influence on Asset Market Prices and Investments

Swedish economic growth for the next five years must be based on rapid private sector growth, notably in manufacturing. In addition this expansion is needed to restore macroeconomic balances. However, growth in output requires an improved *allocation of capital*. In the previous section we observed that firms had been reluctant to invest for volume expansion. The question of this section is whether volume expansion will eventually get started, after a period of consolidation, or take on different forms not easily measured by traditional statistics. We begin by analyzing imperfections in the capital market pricing mechanisms, that may hold back expansion through traditional investments. We then take a broader view of "capital", including also human resources which will be dealt with in the next section.

Private sector growth involves a multitude of investment decisions. Regardless of whether it is a replacement or a new project, hard or soft investment, the decision is based on an assessment of net present value, with a discount rate adjusted for risk. In this context unexpected increases in hourly earnings for industrial workers can be seen as one important kind of risk (business risk). Another kind of risk to consider is associated with economic-political interventions – like risk for increased payroll taxes on the labor market side and changes of parity of the krona on the financial market side. These are political risk components.

Capital market imperfections caused by policy

Another question concerns the information value of market prices and how market imperfections, created by the government, influence the investment decision. Uncertainty about the rules of the game makes it harder to evaluate price signals, thereby increasing the required risk premium on investments. Furthermore, market regulations distort the information content of price signals. If the Riksbank defends the "wrong" parity level of the Swedish krona it will contribute to structural changes in the wrong directions through production and investment decisions in firms, similar to the effects of subsidies.

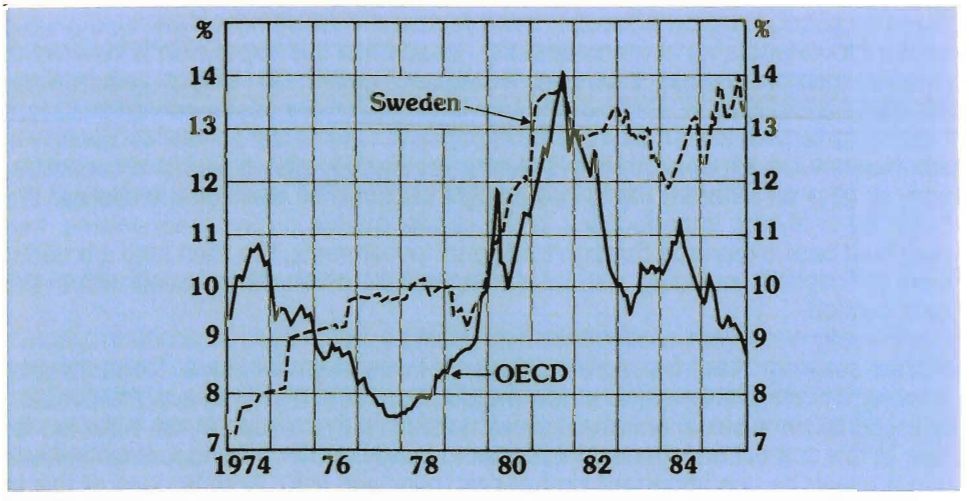
The size of the persistent fiscal deficit and the corresponding increase in foreign public as well as total debt have pushed the Swedish nominal interest level significantly above the average level in OECD-countries as shown in Figure VI:7. Market interventions and a propensity to change the rules of the game seem to have created political risks priced at a high premium (Oxelheim, 1986).

Returns to risks may be too small

Even real interest rates have been pushed up to extraordinarily high levels above OECD-rates. Figure VI:8 shows the gap between real rates of return in industry and the real interest rate. A new pattern emerged from the mid 1970s. The real rate of returns is approaching the average level for 1950–70. Thus, the consolidation following the devaluations has improved the position of the industry for a new investment boom. But, on the other hand, the real rate of interest is still higher, making industrial investments less attractive.

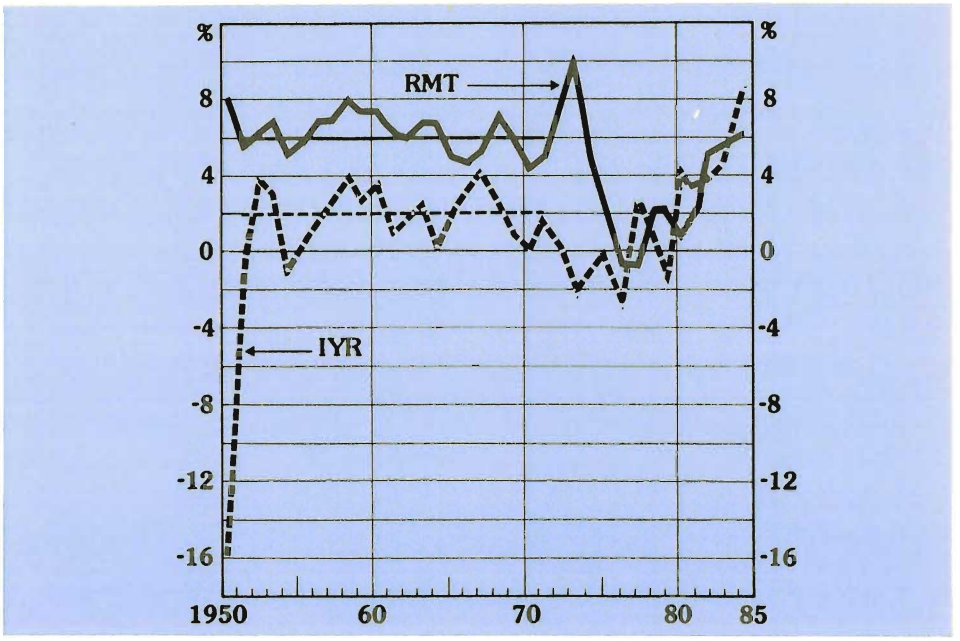
Figure VI:7 Nominal return on industrial bonds in OECD and in Sweden, 1974–85

Per cent per annum, end of month observations



Note: The average return is based on returns in the US, the United Kingdom, Germany, Switzerland, Netherlands and Japan. OECD capital market weights have been used.
Source: Oxelheim (1986)

Figure VI:8 Real rate of return in Swedish manufacturing (RMT) and the Swedish real interest rate (IYR), 1951–85

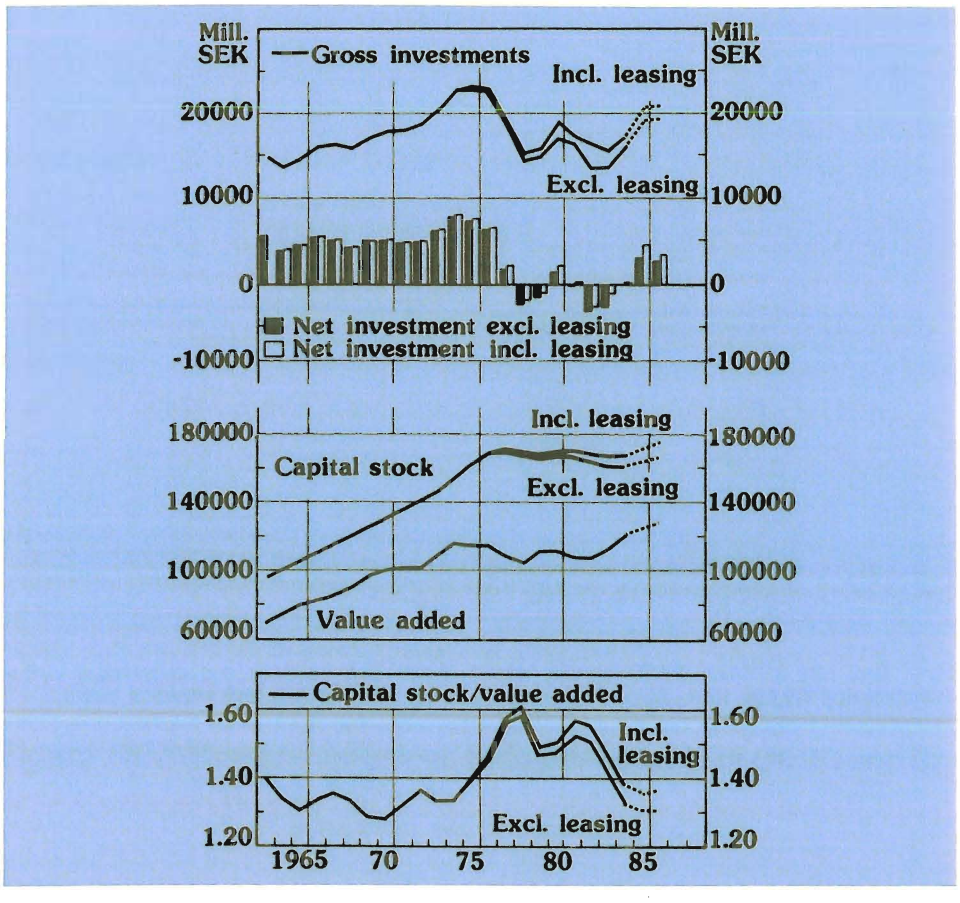


Note: Real rate of return (RMT) on real assets (machinery, buildings and inventories) in the manufacturing industry 1951–85 and real rate of interest (IYR) on long term industrial bonds.
Source: Södersten (1986)

The historically high real interest rates shown in Figure VI:8 indicate a long-term problem. The high real interest rate is partly a global phenomenon (see Chapter II) and partly associated with the large Swedish foreign and public debt, which forces the Central Bank – in the absence of sufficient fiscal restraint – to keep the real interest rate above that in world financial markets. As previously mentioned, the earlier explosive increase in public debt might now be broken, making it possible, eventually, to lower the real interest rate.

The yield, i.e. the gap between the anticipated rate of return and the interest level, must cover the risk premium for real investments. As is shown in Figure VI:8 there has been a secular decline in the relative attractiveness of real versus financial investments in Sweden. Since the mid 1970s the gap between the actual rate of return and the interest level has been very small and irregular. The disorderly situation in many markets generated by macro imbalances rather suggests that an even greater premium is needed. The lack of such a premium covering uncertainty about wage trends and the future course of economic policy, particularly taxation of capital gains, contributes to the cautious attitude towards real investments among firms.

Figure VI:9 Industrial investments, capital stock and production, 1963–86
Million SEK, 1980 prices



Note: Real capital stock is calculated under the assumption of 20 years of linear depreciation.
Source: Swedish National Institute of Economic Research (1985)

After all, an increase in investments

Despite the extremely high real rate of interest and the small gap between real rates of return and real interest rates the period 1983–85 shows (see Figure VI:9) an increase in net industrial investments. The figure also highlights the growing importance of leasing as an alternative to conventional investments.

In 1984–85 net investments including leasing within basic industries became positive for the first time during the 1980s. From a restructuring point of view the large increase in investment in basic industries is rather a source of worry. To a not insignificant degree it is explained by the "locking in effect" of corporate taxation.

Soft investments critical for growth

We know that new forms of capital are partly replacing investments in machinery and buildings as the profitable core of the capital base. However, complementary hardware investments are needed to restore volume expansion. The soft investments in R&D and marketing are needed to make volume expansion profitable.

As pointed out in the recent IUI long-term survey (Eliasson et al., 1985), soft investments are not easily financed through traditional capital market channels. More and easily available risk finance in equity markets is needed. And the equity markets in Sweden are still notoriously underdeveloped as they are in the other Nordic countries (see Special Study 2). Investment in new products demands increasing resources, while the product life-cycle grows shorter. This increases total risk exposure for firms. Thus, while the efficient allocation of capital continues to be the key to industrial expansion, we also have to conclude that important financial intermediation mechanisms needed for such efficient allocation are lacking because the financing system is still tied down by unnecessary regulation, and distorted through taxes in particular. (Compare with Chapter I).

5. Growth and Allocation of Human Resources

The allocation of human resources has been characterized by frequent bottlenecks throughout the crisis years of the 1970s. This situation worsened during the 1980s. The policy conclusion of several studies was that such bottlenecks, especially referring to technicians, had to be removed to facilitate industrial expansion.[1)] The growth and transfer of knowledge through human capital are closely linked to the allocation of capital investments.

Full employment is still a prime Swedish policy target. A common view has been that some amount of inflation has to be allowed to reach the full employment target. However, the "new" experience of the 1970s has resulted in an awareness in the political system of the 1980s that the simple Phillips curve trade-off does not hold. As a consequence, some "holy" targets related to the income distribution and public sector ambitions are gradually given up in the name of restored growth. The so-called solidaric wage policy is one such traditional policy objective. A policy change based on the need to attain a high degree of flexibility in wage setting and labor market mobility is currently voiced from all political quarters. (See also Special Study 3).

The medium-term survey by the Ministry of Finance – which is "approved" by the Parliament as a guideline for economic policy – states the full employment target to be reached at the end of the decade as a level of frictional unemployment of some 2 per cent of the labor force. The Survey – like the Budget 1986/87 – emphasizes that new jobs be created in the private sector in order to fulfill this target.

[1)] According to figures from the Swedish National Institute of Economic Research the vacancies for white-collar workers (technical) in Swedish industry have increased significantly during all years of the 1980s. See also Deiaco (1986).

Public sector growth has to be reversed

As a consequence policymakers in principle have realized the importance of reversing the expansion of the public sector. This change in attitude is important since all employment growth over the past decade has been in the public sector. During the 1970s the public sector expanded by more than half a million jobs, while the private goods and energy production sectors lost almost a quarter of a million jobs. Another 125 thousand jobs in the private sector disappeared 1980–83, while the public sector created 65 thousand new jobs. For the whole period 1970–83 the average annual increase in the number of new jobs in the public sector has been 5.7 per cent. In the private manufacturing sector the average annual percentage decrease has been 1.5. However, transforming this new attitude into policy is not that easy. Some slow-down in public sector growth has been achieved. And it is *important to observe that the projection in the next section is based on the assumption that policymakers will gradually succeed in realizing* some of the public sector and taxation constraint that are now understood to be necessary for a return to a steady growth path. The balance between the public and the private sectors has in fact improved slightly by the 100 thousand new jobs created in the private service sector during the period. And the simulation analysis based on the IUI micro-to-macro model demonstrates that acceptable employment levels can be achieved as easily through private sector growth as through public sector growth and with smaller long-term distortions in the price system of the economy.[1)]

The capacity of the labor market to smoothly reallocate labor from declining to expanding firms – without generating inflation or higher unemployment – will determine not only the rate of economic growth, but also the severity of the social problems of this adjustment. The reallocation problem[2)] to a large extent is a matter of incentives of individuals. The recent long-term survey of IUI[3)] lists the following bottlenecks or deficiencies in the labor market allocation process;

- The structural change of Swedish industry will place the burden of adjustment primarily on the middle-aged and older work force. The younger labor force is mobile and well prepared for the new job openings. For other groups early retirement and part time work are measures frequently used. These instruments are usually viewed by the unemployed as desirable.

- The structural change during the last two decades from basic industries to knowledge intensive industries has shifted the demand for labor. The IUI individual firm survey (Pousette, 1985, and Deiaco, 1986) indicates that the development towards a demand for labor with higher education is likely to continue.

- Labor market public training programs have been used frequently in Sweden. But it is hard to find evidence which justifies the extent of training (Björklund and Moffit, 1986). The welfare benefits associated with marginal expansion appear

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[1)] For further details about the simulation analysis see Appendix to this chapter and Eliasson, Hanson and Oxelheim (1986).

[2)] The propensity to change job has in Sweden dramatically decreased. According to Holmlund (1984) the number of persons with at least one change of employer in per cent of the number of persons with some employment experience has fallen from 13 per cent 1966 to 8 per cent 1982.

[3)] Eliasson et al. (1985).

to be negative. And participation in such programs may even "label" the trainee as less fit for qualified jobs with the prospective employers. Such "stigma effects" will be disastrous in a labor market where the supply of simple manual jobs is draining up. And the labor market authorities become responsible for creating them through overly ambitious and expansive programs, involving people that do not need help to solve their problems.

- Labor market policies should be focused on the relatively small number of people who experience *serious* job market problems.

Solidaric wage policies may have to be relaxed

Many policy proposals have been advocated to improve the reallocation of labor needed for desired growth. The most radical proposal by Swedish standards may be that solidaric wage policies pushed by unions may have to be given up, or modified. A group of economists[1] in 1985 suggested the introduction of a fee-based rather than tax-based unemployment insurance system. Such a system could lead to higher mobility of labor, if labor in a fee system would prefer reduced unemployment benefits and larger wage dispersion.

An increase in both before and after-tax wage differentials – giving up solidaric wage policy ambitions completely – is an alternative way of creating a higher labor market flexibility. A number of studies[2] demonstrate that the decision to move and/or change jobs is sensitive to these differentials. And firms clearly respond to wage costs including taxes. Thus the need for an income tax reform is necessary for increased flexibility.

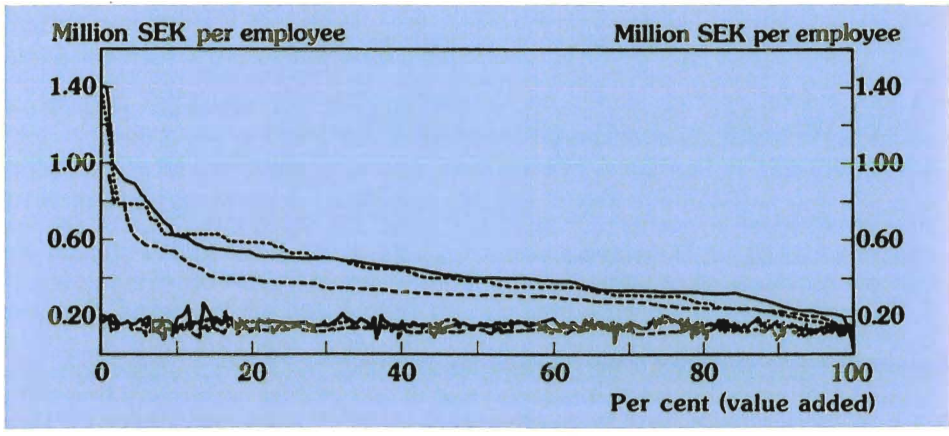
The negative growth effects of rigid wage structures are highlighted by experiments on the micro-to-macro model of the institute (see Eliasson and Lindberg, 1986). Since the IUI long-term survey[3] we have experienced difficulties of generating – in the model – long-term stable macroeconomic growth through traditional policies. Not even the large 1982 devaluation could be made to generate a strong expansion in the profitable end of the firm distribution (see Figure VI:10).

The most profitable firms may be growing faster than other firms, but this is not a strong tendency and profitable firms do not generally generate fast growth in their own employment. On the whole, the correlation between rates of return and output growth on the one hand and employment growth and wage increases on the other appears to be rather weak. While this may have helped to contain the rapid wage increase normally associated with devaluations it also suggests the reason for the absence of a significant growth response in output. A strong reorientation of labor

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[1] Calmfors et al. (1985).
[2] For a recent survey, see for instance Björklund (1986).
[3] Eliasson et al. (1985), Chapter VI.

Figure VI:10 Productivity and wage distributions 1982 and 1985 and simulated distributions 1985
Million SEK per employee



Note: The upper curves show distributions of value productivities, ranked in decreasing order over firms and weighted by value added. The lower curves show matching relative wage cost distributions.

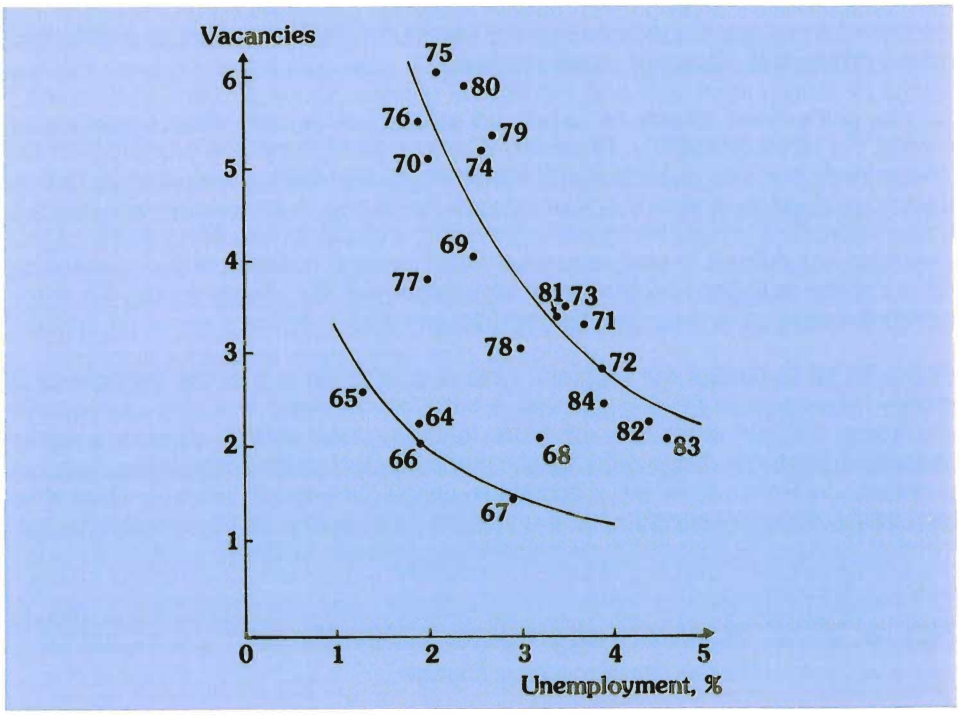
The simulation began on the 1982 initial database (- - -). The outcome of the simulation (. . .) can be compared with the real 1985 state from the database (——).
Source: Eliasson and Lindberg (1986)

flows towards growing, high rate of return industries should have generated a temporary leftward-upward tilting of the wage distribution in Figure VI:10. Neither reality nor model simulations exhibit any of this. This is probably best explained by a rigid relative wage structure dependent on the earlier wage structure in Swedish industry, with much higher wages in basic industries and shipyards than in other industries. Not even the crisis years of the 1970s and the virtual – at last – closing down of the Swedish shipyards industry have been sufficient to break the rigid relative wage structure. The conjecture is clear; the rigid wage structure makes employment expansion in other – lower wage industries – expensive. Rather than accepting wage drift and being forced to raise the wage level of the entire organization to recruit labor, firms – willing to expand volume production – opt for slower growth in output and little change in employment. The only question is how much factor price distortions like this have retarded overall growth in manufacturing output during the last decade. It should be noted that the projection in the next section assumes – optimistically – that this rigid wage structure will gradually loosen up through this decade, and allow a gradual return to a slow and steady, but faster, expansion path.

Wage rigidities and inflation

The degree of flexibility in wage formation also affects inflation. We argued above that future developments in Swedish economic performance will be determined in a large part by the extent to which the *need* for low wage increases is matched by the *labor market's ability* to reallocate labor at reasonable low average wage increases. Schager (1985) indicates that the rate of wage increases is determined by the employer's ability to recruit labor quickly. According to Schager the current

Figure VI:11 Duration of vacancies (weeks) and open unemployment in per cent, 1964–84
Manufacturing occupations



Source: Schager (1985)

"price" for a favorable recruitment environment is a level of open unemployment among industrial workers that is far higher than that needed in the 1960s at current wage dispersion. Figure VI:11 highlights the relation between the rate of open unemployment and the duration of vacancies in weeks. In the 1960s a vacancy could be filled within two weeks when the rate of unemployment was around 2 per cent. In the 1980s an unemployment rate of 4–5 per cent is needed in order to fill a vacancy within the same time. As is shown in Figure VI:11 the curve shifted sharply outward in the late 1960s. The shift reflects changes in attitudes as well as the cumulative effects of labor market and industrial policies. Thus, the low wage increases that are essential for Swedish competitiveness are achieved today through higher rates of unemployment. And this inflation-unemployment prone price structure of the economy has paradoxically been achieved by policies intended to secure full employment.

This closes the circle. The facts that the most profitable firms are not paying the highest wages and that all firms because of this have not been able to recruit people at the wages they are willing to pay have kept them from expanding employment at all.

Hence, unemployment has increased, and average wages have not expanded as much as the devaluation would suggest. The idea of the Phillips curve seems valid again.

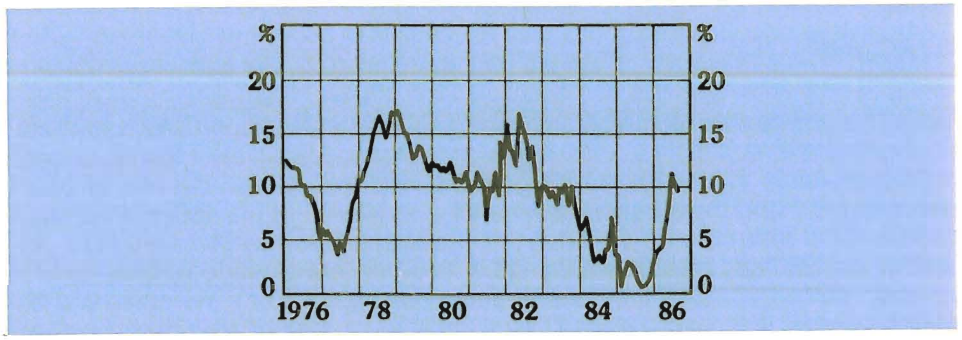
6. Classical Wealth Effects Threaten Growth Prospects

While both gross and net (after tax) income distributions have become increasingly compressed during the last couple of decades, the last decade has witnessed an increasing skewness in the wealth distribution created by a disturbed price system and disorderly asset markets.[1)]

Capital gains have largely remained unrealized, since they have accumulated among the already wealthy. However, it seems as high income earners with tax determined low net incomes are increasingly liquidating their capital gains, through realization of assets and/or through borrowing. A classical wealth effect is thus turning high (gross) income earners into net dissavers. The effects of this dissaving are difficult to evaluate. One would expect, however, that the resulting consumption is in the luxuary range and predominantly affects import. To some extent the dissaving may also be used to pay wealth taxes.

Figure VI:12 illustrates the problem. One should observe that the trendbreak in money supply in late 1985 coincides with the relaxation of the quantitative restriction for the expansion of bank lending. Axell (1985) reports a close relationship between lagged changes in money supply and inflation in the Swedish economy. In Figure VI:12 we discuss the actual differences between alternative measures of money supply.

Figure VI:12 Monetary aggregate, 1976–86
12 months percentage change



Note: The measure in the figure covers the public's deposits in banks, bank certificates bought at the time of emission, notes and coins.

Due to the open market operations applied by the Swedish Central Bank since mid 1982 the choice of measure to indicate money expansion is crucial. The Swedish Central Bank publishes regularly three different measures which differ drastically. Looking at the ordinary M3 measure, as in the figure, the 12 month change in per cent in November 1985 was −0.5. Then, it has been gradually increasing to 12.2 in September 1986. On the other hand, if we look at the broader M3 measure published by the Central Bank – including tax subsidized saving (allemanssparande) and treasury bills – we will find quite another development indicating a more stable growth in money supply amounting around 6–7 per cent. The third measure presented, covering M3 and tax subsidized saving (allemanssparande), also shows a dramatical increase from a rate of change of 1.9 per cent in September 1985 to 15.7 per cent in September 1986.
Source: Central Bank of Sweden

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1) See Eliasson et al. (1985), especially Chapter VII and Special Study No. VI.

Deregulation of the Swedish financial system has been gradually enforced through the increased international integration of the Swedish economy, and is for all practical circumstances irreversible. Hence, the only policy option to contain the transformation of accumulated wealth into consumption and import is to support – to the extent it is possible – a domestic interest rate above the international rate and also to pursue restrictive domestic demand policies in support of a strong currency and a low inflation rate. This policy, which has been advocated by the Central Bank may, however, contain investment and hold back growth in output and employment in mature industries.

A critical problem in achieving macro economic balance remains in the permanent wedge inserted in the tax system between the real rate of interest the investor has to pay when borrowing to grow and the rate of interest after tax that the private saver receives. The first is high and positive, the second is still negative for large groups of private savers. As long as this wedge remains a deflationary gap will be maintained in the economy, and the only way to remove it is to depart from the distributional ambitions associated with tax policy.[1)]

The conclusion of the above analysis, however, is that prudent long-term policy is to opt for relatively slow economic growth and a gradual but minor increase in open unemployment to achieve the optimistic scenario for the next five years embodied in the projected numbers of the following section. This scenario is critically dependent on an assumed fiscal restraint on the part of public authorities.

[1)] See Eliasson et al. (1985), Special Study VI.

7. The Swedish Economy 1985–90 – A Policy Projection

Sweden has accumulated large foreign and public sector debts during the crisis years of the 1970s. A reduction in the debt and the problems generated by the debt service, can only be achieved through growth in the private sector, notably through exports. The conditions for accomplishing this in the long run are basically good. From a technological point of view the competitive edge of Swedish export industries is good by international standards. We have identified the growth problem as predominantly a problem of domestic relative prices. That prices are still out of line is witnessed by recent observations that export industries are not able to keep up with foreign competitors in rapidly expanding international markets.

The international market scenario in Chapter II assumes slowly rising oil prices, an unchanged real value of the U.S. dollar and declining real interest rates. Our projections furthermore assume a contractive fiscal policy in Sweden that keeps private and public consumption down in order to raise savings, investments and exports. A moderately restrictive monetary policy is assumed and interest rate policies may affect domestic investment negatively. Increased investments will nevertheless mean that inflationary tendencies from monetary expansion will be balanced by growth of production. Inflation will continue to run ahead of the OECD average.

Thus, we implicitly assume that only a small portion of the "oil price gains" will be transformed into private and public consumption. If this cannot be achieved increased inflation poses a threat both to Swedish economic growth and the relatively optimistic growth scenario we have opted for.

Table VI:3 The Swedish economy, 1970–90

1980 prices

A. Balance of resources

	1985 Mill.SEK	Average annual change in volume, per cent			
		1970→75	1975→80	1980→85	1985→90
GDP	572 183	2.6	1.3	1.7	2.0
Imports	182 188	2.7	2.1	1.8	3.8
Total resources	754 371	2.6	1.5	1.8	2.4
Exports	200 223	3.8	3.8	5.1	4.0
Investments	111 553	1.2	−0.1	1.0	2.2
private	46 665	4.6	−2.3	3.5	3.7
public	34 733	−0.8	2.2	−1.5	1.5
residential	30 155	−2.5	0.3	0.7	0.5
Consumption	442 498	2.6	1.7	0.9	1.6
private	277 476	2.5	2.5	0.4	2.0
public	165 022	3.0	3.4	1.7	1.0
Inventory changes[a)]	97				
Total demand	754 371	2.6	1.5	1.8	2.4

[a)] Incl. statistical discrepancy

Table VI:3 (continued)

	1985 Mill.SEK	Average annual change, per cent			
		1970→75	1975→80	1980→85	1985→90
B. Households					
Disposable income	277 086	2.6	0.8	−0.5	2.1
Savings ratio, %	−0.1	4.0[a]	3.8[a]	1.2[a]	0.3 (1990)
C. Manufacturing and mining					
Production	124 852	2.7	−0.4	1.9	3.0
Productivity[b]		4.4	2.4	3.7	2.5
Investments	18 904	5.2	−4.2	0.8	5.0
Investments/Value added, %	15.7	16.6[a]	15.7[a]	14.1[a]	16.7[c] (1990)
D. Prices, etc.					
Producer prices		9.9	9.4	9.4	4.1
Export prices		11.0	8.2	8.9	3.9
Import prices		12.0	12.4	9.3	4.0
Consumer prices		8.0	10.5	9.0	4.4
E. External balance (% of GDP)					
Trade balance	1.9	0.7[a]	−0.9[a]	1.1[a]	2.9 (1990)
Current account (excl. interest payments)	1.6	0.6[a]	−1.7[a]	0.9[a]	1.9 (1990)
Interest payments, net	−2.7	0.1[a]	−0.4[a]	−2.5[a]	−1.7 (1990)
Net foreign liabilities[d]	−22.0	4.8[a]	−3.4[a]	−21.4[a]	−19.5 (1990)

[a] Arithmetic mean (5 years)
[b] Value added/employment
[c] At 1980 prices
[d] Comparable to net foreign liabilities in Figure VI:2, but with opposite sign

Source: National Accounts Statistics, IUI estimates

Our growth scenario is presented in Tables VI:3–VI:6. Table VI:3 shows a GDP forecast considerably below average GDP growth in the OECD. The faster increases in costs and prices assumed for the Swedish economy means that competitiveness is being continually eroded. The major demand source of growth is exports. However, Swedish export growth (4 %) is less than the assumed growth in world trade (5 %). Both export and import estimates are based on the assumption that Swedish export prices and domestic producer prices increase about 1 per cent faster per year than the foreign corresponding prices. We believe private consumption to be above our estimated annual average during the first half of the forecasting period and below during the second part of the period. The average annual increase in private consumption (2 %) explains partly the relatively high import growth projected.

GDP and export growth estimates correspond to an increase in manufacturing production of 3 per cent, which is a high growth figure compared to the development during the last 15 years. Swedish inflation (CPI) is predicted at 4.4

Table VI:4 Gross domestic product by sectors, 1970–90
1980 prices

	1985 Mill.SEK	1985 Per cent shares at 1980 prices	Average annual change in volume, per cent			
			1970→75	1975→80	1980→85	1985→90
Manufacturing and mining	124 852	21.8	2.7	−0.4	1.9	3.0
Agriculture, forestry	18 858	3.3	−0.3	−0.4	2.3	1.5
Construction	40 930	7.2	0.4	1.3	1.1	1.0
All private services	181 507	31.7	3.5	1.7	1.3	2.0
Production in public sectors	126 216	22.1	3.8	3.4	1.7	1.0
Commodity taxes and subsidies, stat. discrepancy						
Electricity, gas	79 820	13.9				2.5
GDP	572 183	100.0	2.6	1.3	1.7	2.0

Sources: National Accounts Statistics, IUI estimates

Table VI:5 Balance of manpower resources, 1970–90
1 000 pers.

	1970	1980	1985	Changes, per cent per annum			
				1970→75	1975→80	1980→85	1985→90
Population	8 081	8 318	8 358	0.3	0.3	0.1	0.2
Population of working age (16–74 years)	5 864	6 040	6 118	0.2	0.4	0.3	0.2
Labor force	3 913	4 318	4 424	1.1	0.9	0.5	0.5
Employment							
Manufacturing	1 055	981	908	−0.1	−1.3	−1.5	0.5
Private services	1 328	1 390	1 444	0.8	0.2	0.8	0.5
Public sector	806	1 300	1 411	5.3	4.5	1.7	1.0
Other[a]	665	561	536	−2.4	−1.0	−0.9	−0.8
Total employment	3 854	4 232	4 299	1.1	0.8	0.3	0.5
Unemployment[b]	59	86	125	2.6	5.1	7.8	1.2
Employed in labor market programs	71	124	178	5.8	5.7	7.5	−3.4
Labor force participation rate, %	66.7	71.5	72.3				

[a] Difference
[b] The rate of unemployment is expected to increase from 2.8 per cent 1985 to 2.9 per cent 1990

Sources: AKU, IUI estimates

per cent compared to an assumed OECD average of 3.5 per cent. Manufacturing investments are assumed to grow at an optimistic annual rate of 5 per cent. We believe investment decisions to be stimulated by a gradually decreasing Swedish real rate of interest.

Table VI:6 Public sector, 1960–90
Per cent of GDP at market prices

	1960	1970	1980	1985	1990
1 Direct taxes	14.9	20.3	21.7	21.7	22.0
2 Social security contribution	3.6	7.6	14.2	12.6	13.2
3 Indirect taxes	10.0	12.6	13.6	16.3	16.2
4 Total taxes	28.5	40.5	49.5	50.6	51.4
5 Transfers to households	7.9	11.3	18.6	19.2	19.0
6 Interest payments	1.7	1.9	4.1	8.5	5.5
7 Total transfers to private sector	11.4	15.9	29.3	34.3	29.6
8 Public consumption	15.4	21.4	28.8	27.7	27.9
9 Public investment	4.4	6.2	4.2	3.1	3.1
10 Public spending	31.0	43.9	62.3	65.1	60.6

Sources: National Accounts Statistics, IUI estimates

Our scenario is based on an expected increase in hourly earnings of 6.5 per cent per annum. The yearly increases in productivity are assumed to be 2.5 per cent in industry and 3.0 per cent in agriculture and forestry. Lower increases in productivity or 1.5 per cent are expected in construction and private services.

The estimated changes in inflation and hourly earnings provide a rise in real disposable income, together allowing both an increase in private consumption and a slight improvement of the saving ratio from −0.1 per cent 1985 to 0.3 per cent 1990. Our projection assumes an almost unchanged tax ratio in per cent of GDP.

Our price scenario is built on the assumption of unchanged profitability of manufacturing industries during 1985–90 as compared to 1985.

Transfers to household – including interest rates and subsidies – will be unchanged as per cent of GDP, while subsidies to corporations will substantially decrease during the forecasting period.

In conclusion we can see current account improvements but with internal imbalances prevailing in the Swedish economy throughout the forecasting period. Our scenario will reduce the fiscal deficit to about 15–20 billion SEK at the end of this decade. But the deficit is still high and all market distortions due to an extremely high tax pressure are still there.

Appendix

Note on Policy Simulation

The IUI micro-to-macro (M-M) model has been used for policy simulation and consistency testing[1] of the projections through 1990. The tests predominantly concerned consistency between relative prices, rates of return and output growth rates on the one hand and assumptions related to the interest rate, foreign prices and technical specifications of new, best practice investments, on the other. The idea was to clarify which mechanisms and policies that would be capable of generating the growth scenario presented in the chapter. The traditional Keynesian, national accounts consistency is treated in the model as an identity. However, given a different model there will of course be a different set of consistent values for the variables. The key problem in the M-M model is to get prices right and the policy problem is what sort of relative price developments that is compatible with the growth projections we have settled for.

To understand the experiments that we have used to support[2] our policy discussion the following three mechanisms, simultaneously at work in our model, should be kept in mind

1) Firms under competitive pressure in foreign or domestic markets respond in the short term through minimizing slack thereby pushing activity levels closer to "maximum possible" levels, and increasing productivity.

2) Relative price changes partly change the relative development in factor and product prices, partly tilt profit margins more in favor of export deliveries.

3) Relative price changes – even small ones – at the right time can trigger a Keynesian investment accelerator demand multiplier wave of increased economic activity.

With sufficient resources available for this accelerator-multiplier mechanism to be non-inflationary and work in favor of an export boom initially lower wages can generate much higher output and faster growth in real wages within a relatively brief period. This is exactly what happens in some of the experiments. The slack, necessary for the favorable price development is generated through a temporary tax on domestic consumption. Of course this is exactly the effect desired from a devaluation, as long as income earners do not recover their lost income through higher wage demands.

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[1] A technical presentation of the tests has been written by Gunnar Eliasson, Ken Hanson and Lars Oxelheim, IUI memo, dated Dec. 22 1986.

[2] To be explained in detail in Eliasson, Hansson and Oxelheim (1986).

The projection opted for in the scenario represents a balance on a knife edge. *First* of all, extreme, and for the Swedish welfare state unusual fiscal constraint has been assumed. *Second*, income earners are assumed not to seek compensation in the form of higher wages. *Third*, a modest rise in unemployment has to be temporarily – at least – allowed. These assumptions are decisive in forcing the slight tilting of relative factor and product prices, needed in the scenario assumed in Chapter II to spin off a slow motion accelerator multiplier development over the next five years. Low inflation in foreign markets and the assumed fixed exchange rate makes it impossible to achieve relative wage adjustment through inflation. With downward flexibility in nominal wages this would of course have been easier to achieve. We do not think this is possible. In addition, the micro-macro model included no easy way of reorganizing the labor market to achieve this possibility. Lowering or raising the interest rate has only marginal effects on output growth during the 5 year period considered.

Our simulation analyses furthermore emphazise some critical policy implications for Swedish growth. *First*, making it difficult to recruit labor for expanding firms has significant, negative effects on growth in output, raises inflation and disturbs the external balance.

Second, to secure the projection presented with a zero public deficit by 1990 (as compared to 15–20 billion SEK in the scenario) it may be needed to raise taxes temporarily and use the proceeds to reduce the public deficit. However, the scenario was wrecked if public expenditures were allowed to rise faster than the 1 per cent per annum imposed in most experiments.

Finally, an unfavorable tilt of foreign price development in favor of consumer and investment goods industries not only puts raw material producers under cost pressure. The expansion generated in other domestic industries also drives up factor prices to the extent that the whole sector is imperiled, or rather pushed into the same "crisis" situation as in the mid 1970s. This however, has not significantly and negatively affected the macro projection by 1990.

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SPECIAL STUDIES

Newly Established Fast Growing Nordic Companies

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Newly Established Fast Growing Nordic Companies

1. Introduction

It is of utmost importance, for the vitality of the business sector and of the economy as a whole, that there is a continuing restructuring of the economy. Old companies change or die away, new companies are established and grow. Unprofitable companies exit from the market and resources are moved to more efficient (profitable) producers.

The creation and growth of new successful firms makes up one of the most important factors in the transformation process. In this study we will describe forty fast growing Nordic companies established (except for Norway) during the last decades. The ambition of the study is not to make any deep analysis of each company, but rather to present short descriptions and stress the main business strategies and factors of success. Furthermore, our case studies are not a listing of the most successful companies in each country. Many other companies may have had a better or – at least – as good a development. The study could thus be seen as an empirical, micro-based description of some of the recent industrial trends discussed in the different country chapters.

Success can be defined from three different viewpoints: a) technological success – a technologically superior product, b) commercial success – a product selling in large volume, and c) economic success – a product which rate of return is higher than that of all alternative uses of the money invested. Success in the first two fields does not guarantee economic success. In this chapter we will study economically successful companies. However, as data are often missing, we will sometimes have to use profitability proxies such as growth in sales and number of employees. It is also important to stress that success yesterday and today doesn't guarantee future success. The chosen companies may not be as successful in the future (Jagrén 1986).

As one main ambition of the chapter is to give some empirical examples regarding the creation and growth of new companies and the transformation of the business sector, we have primarily chosen to include companies established after the second world war. However, it is important to stress that a major part of the restructuring of the economy takes place within the old and large companies (Oxelheim 1984 and Jagrén 1986) analyzed in the 1984 Nordic long term survey. Thus, companies like Ericsson, Volvo, Novo, Nokia, Wärtsilä, and Norsk Hydro are not included.

Another important point to stress is that small companies seldom become large independent enterprises. Instead they are in most cases acquired by larger firms due to financial difficulties caused by the rapid expansion (Jagrén 1986).

The other main ambition of the study is to discuss the factors explaining the rapid growth of the companies. Is success primarily explained by:

- Growing international demand?
- New marketing strategies?
- Price competition?
- Financial strength?
- Other factors?

The sample of companies has not been chosen according to any strict definition rule regarding average growth, number of employees, profitability etc. Criteria differ somewhat between the Nordic countries. Due to missing data, some of these criteria had to be relaxed for some of the companies. Company data was collected through interviews and annual reports, but especially profitability data often proved impossible to get for earlier years. This means that we can have included fast growing firms with low profitability during the earlier periods.

In all countries we have tried to include companies from different sectors, with different owner categories and with different organizational forms, to show that there does not exist any single best solution as to how to achieve growth and success. Success depends on individual entrepreneurial skill which differs from case to case and from individual to individual. Economic policy plays an important role in creating incentives for the potential entrepreneurs.

The chapter is divided into four separate sections describing companies in each of the Nordic countries. It is concluded with a section summarizing the different categories of factors explaining the success.

2. Danish Fast Growing Companies

The Danish case studies have been selected according to the following criteria:

- among the 500 largest Danish enterprises in 1985
- high growth and good profitability
- established after or during the Second World War (with the exception of Radiometer, which was founded in 1935)
- it has been our aim to select firms from many different lines of business.

A large number of enterprises qualified for being included in the group. It is neither solely nor primarily among the more recently established firms in Denmark that we can find the growth potential of the last few years. There has been a long series of old, well-established enterprises that have demonstrated good growth and earning capacity, and among these are several of the largest firms in Denmark. None of the selected cases can be found among Denmark's 100 largest firms, which is characteristic of the structure of industry in this country. Industry mainly consists of small and medium-sized firms and among the 100 largest firms in Denmark, it is only a few that have been founded after 1945. In the final selection the enterprises listed in Table 1 were chosen.

Table 1 Successful Danish companies

	Estab-lished	Turnover (Mill. DKK)						Number of employees		Foreign sales %	Business areas
		1950	1960	1970	1975	1980	1985	1980	1985		
Coloplast A/S	1957					165[a]	394	434[a]	769	96	Paints
Egetaepper A/S	1951				147	380	740	444	654	67	Carpets
Eskofot A/S	1941				67	240	425		765	95	Graphic
Flügger A/S	1946	2[b]	5[c]	33[d]		167	364		415	20	Measuring equipment
In-Wear A/S	1973				52	160	1 191		545	90	Clothes
Micro Matic A/S	1953				20	45	155	285	251	70	Extractor tubes
Migatronic A/S	1970			0.01	18	79	153	190	235	70	Welding machines
Radiometer A/S	1936		12	66		291	658	841	1 309	93	Medical equipment
System B8 møbler A/S	1941				33	65	105	173	220	33	Office furniture
Vestas A/S	1946				33		800		800	85	Windmills
Total manufacturing[e]	(average)						42[f]		56[f]	–	
200 largest companies	(average)						2 286[f]		2 626[f]	–	

[a] 1983/84, [b] 1949/50, [c] 1959/60, [d] 1969/70, [e] companies with more than 6 employees, [f] 1984.

Note: The producer price index rose from 100 in 1950 to 131 in 1960, 177 in 1970, 286 in 1975, 413 in 1980 and ca 595 in 1985.

Coloplast A/S

Coloplast is a typical example of a firm with a large market share in a pronounced niche product area. Coloplast started in 1957 with a patent for products for ostomy-operated patients (patients with an artificial anus) and experienced a constant, good growth from the beginning.

Since the end of the 1970s Coloplast has demonstrated a high rate of growth and a good earning capacity which is primarily due to very active marketing efforts on the export markets.

During the 1970s Coloplast diversified its activities to include a number of related areas, namely the incontinence products as well as products for the care of the skin and wounds. Ostomy products still account for 80 percent of the turnover.

Coloplast has approximately 33 percent of the world market for ostomy products but is up against keen competition from two American firms. Coloplast's strength is a specialization in the development of products which compete on a high quality level and on supply security. Coloplast sells 3/4 of its products on the European market, which with the company's high quality requirements is a relatively safe market, and in addition to this the customers buying the products are relatively loyal to the brand.

Egetaepper A/S

Egetaepper was founded in 1951 by Mads Eg Damgaard, who is still controlling the firm as far as finances and management are concerned.

Egetaepper started with a mixed textile production but began to specialize in manufacturing carpets from 1953, which brought about a quick increase in sales. Egetaepper has attached great importance to the development of advanced production technology which has been a very favourable thing as far as competition is concerned. The acquisition of the Millitron dyeing plant and a design computer gives Egetaepper the possibility – as the only firm in Scandinavia – to weave carpets with an individual design, for example with a firm's logo. The production of carpets of a high standard with regard to both design and quality combined with intensive marketing has given Egetaepper a trade mark position as one of the few in the line.

Since the end of the 1960s Egetaepper has acquired a number of firms that are affiliated to yarn and carpet production and through rationalizations and new investment Egetaepper has extended the product range and secured a subsupplier of yearn. Egetaepper is today the largest carpet manufacturer in Scandinavia and one of the ten largest in Europe.

Eskofot A/S

Eskofot was founded in 1941 and was a private limited company until it was quoted on the stock exchange in 1984.

Eskofot's first activity was production of photocopiers, and the sale of photocopies contributed to developing the photocopiers in the 1960s. In 1972 the company launched its first reprographic camera.

Today Eskofot is a leading manufacturer of equipment for the graphic, photographic and electrographic industries and has a very wide product range within offset and reproduction equipment, colour copying, etc. Eskofot finds it important to be a "total supplier" and has only one (Japanese) competitor in the world with the same wide product range.

It has been decisive for Eskofot's continued progress that the company has been able to occupy a leading position with the newest technological development so that it is Eskofot that leads with new products in the line. Therefore Eskofot has a strong position on the market and in addition to selling its products under its own name, Eskofot manufacturers equipment which other firms (Kodak, Agfa, 3M, etc.) sell under their names. Competition from Japan has forced Eskofot to give up the photocopy sector definitely at the beginning of the 80s.

Eskofot started using industrial designers at a time when only a few others had thought of using designers for industrial products and since then the company has been awarded many design prizes. Eskofot has also attached great importance to the marketing of its products on other points, and part of the success that the company has had can be explained by the conscious way in which they have aimed at good marketing.

Flügger A/S

From 1890 Flügger was a small branch of a German company, but in 1946 Flügger was taken over as a completely Danish personally owned company. Flügger was converted into a limited company in 1970 and was quoted on the stock exchange in 1983.

Flügger is one of the biggest Danish producers of paint products. At the end of the 1960s Flügger was the chief supplier in the market for house paint with a market share of 50 percent. After the first oil price shock in 1975, the activities in the building sector declined and so did the sale of house paint. For Flügger this was the beginning of intensive marketing efforts on the retail market where Flügger established a chain of retail shops, most of which were owned by master painters on a sort of franchising basis. This led to a considerable expansion in this market where Flügger now sells 25 percent of its output.

Neither as to price nor quality do Flügger's products deviate from those of the competitors. The major reason for the growth experienced by Flügger during the last few years is the aggressive marketing of the products through the expansion of the chain of stores. With its 135 shops Flügger has one of the largest chain of shops dealing in paint products in Denmark.

As for the product range, Flügger's expansion is based on the philosophy of "production and marketing of a complete range of paint products" and the company has diversified its activities to comprise a number of related fields through acquisitions of a number of Danish and Swedish firms within the lines of wall-paper, paint brushes and sandpaper.

In-Wear A/S

At the end of the 1960s Niels Martinsen and the designer Kirsten Teisner started a fashion firm, which on top of the cowboy style of the 1960s wanted to launch a style of clothes for the new generation: The In-Wear line for women, which was followed up six years later by a men's line of the name Matinique.

Since the end of the 1970s In-Wear has expanded very markedly and has at the same time demonstrated a great earning capacity. 90 percent of the sales are handled by foreign sales companies in a number of – primarily Northern European – countries.

In-Wear is concentrating on product development/design and marketing of the collections whereas the collections are produced at a number of suppliers' factories.

With its collections In-Wear has been able to create its own style without being too far from the main current at the same time. The design and the quality of the clothes have made In-Wear/Matinique branded goods which are only slightly sensitive to price fluctuations.

The company also intensifies its efforts within the marketing of the collections with video tapes, travelling shows, advertisements, etc., and the company is selective with a view to its choice of shops: they are to "be in the right spot" and they must be ready to focus on In-Wear/Matinique as far as sales and displays are concerned. In return In-Wear will assist the shops with the advertising, the lay-out of the shop and in this way try to create the uniform sales and advertising strategy that contributes to creating the special image.

Micro Matic A/S

Micro Matic is the world's biggest producer of extractor tubes for breweries, and with a global market share of more than 40 percent Micro Matic is more than 50 percent bigger than its largest competitor.

Micro Matic was founded in 1953 and at the beginning the company produced time-switches and simple electronic products. In 1970 Micro Matic started production of dispense equipment which later turned out to be the future principal product of the company.

With this product Micro Matic secured a large share of the European market at the end of the 1970s, which was further strengthened at the beginning of the 1980s. The export growth has accounted for almost all growth in sales that Micro Matic has experienced since the end of the 1970s.

The fact the Micro Matic has managed in a short time to achieve a leading position in the market is due to several factors: Micro Matic has specialized within a very small field and only produces high-quality goods. Furthermore it has been decisive that the company has been flexible with respect to both production and products, and it has therefore been able to cover the requirements and meet the specifications of the individual breweries. With small changes Micro Matic thus produces 400 different versions of extractor tubes. Finally it is a market with a high degree of brand loyalty.

Migatronic A/S

The welding machine factory Migatronic was founded in 1970 and has since then displayed a high rate of growth and a good earning capacity.

Migatronic produces a wide range of welding machines, advanced electronically controlled ones as well as less advanced standard welding machines, and recently the company started producing welding robots. The medium type of machine accounts for most of the sales.

Already at an early stage Migatronic exported a little but not until 1978 did the company really intensify its efforts on the export markets. At the same time as the home market is contracting, Migatronic sets up subsidiaries in England, Germany and France.

Migatronic's success can be ascribed to several factors:

1) A business culture which has created a high degree of motivation among the dealers.

2) The small size of Migatronic compared with the giants on the market gives the company greater flexibility, and with its wide product range Migatronic has manufactured products which are adaptable to the individual requirements of industry. Moreover, the products are built according to a modular systems which facilitates repairs.

3) The implementation of a long-term production planning and rationalization project to get closer to an "ideal factory", the main idea of which is a division into five mini-factories where each link in the chain provides the next link with the daily requirements. The project has resulted in considerable profits based on rationalization.

Radiometer

Radiometer was founded in 1935 and started by delivering measuring equipment to the expanding radio industry. In 1937 the company developed a pH meter for the measuring of the acidity of liquids and in the course of the 1950s Radiometer developed measuring instruments for the determination of the acid-base balance of blood. Today these and other medico-technical apparatus constitute the cornerstone of the product range of Radiometer. The products are primarily sold to the hospital sector, to research institutes and to the chemical industry.

Radiometer was converted into a limited company in 1964, but is still controlled by the former owner family.

Radiometer has experienced rapid growth during the last few years. Since 1979 sales have increased by an average of more than 20 percent annually and Radiometer has also demonstrated a good earning capacity. Radiometer's products are not very sensitive to price fluctuations and they compete on precision and durability. Radiometer's success can first and foremost be ascribed to the combination of technological know-how and experience within a number of related areas which have enabled the company to produce accurate and reliable instruments and measuring systems. The high technological level is ensured through large research and development costs equaling 10 percent of the sale, which is even expected to be raised to 15 percent in future in order for Radiometer to hold its own in the competition.

Radiometer has introduced a more expansive strategy on the export markets and has wanted to diversify its production to include related areas and markets through acquisitions of foreign firms. Financially this has been rendered possible on the basis of the profitability of the last five years, which has created a large liquidity reserve.

System B8 møbler A/S

System B8 møbler, which is one of Denmark's leading manufacturers of office furniture, started its activities in 1941 as a sawmill. The mill only manufactured furniture in the winter months when there was not enough timber to be cut up.

In 1973 System B8 marketed its first office furniture system and as this was a success, the company has launched another two systems since then. Today office furniture constitutes 70 percent of System B8's sales and the production of kitchens accounts for the remaining approximately 30 percent.

The furniture systems are specially developed with a view to "the electronic office" where the modules are designed to be used in connection with VDUs, PCs, etc. The company invests heavily in product development and makes a point of the products being of good quality, well designed and ergonomically correct. In return the products are relatively insensitive to price fluctuations.

The market for office furniture is today experiencing a tremendous growth, but System B8 møbler has also been able to present good growth figures in periods when the market was stagnant. The success can be ascribed to good strategic planning in product development as well as marketing, and especially the company philosophy in the product development – to produce office furniture systems which can be expanded and adapted for almost any requirement for office lay-out – has turned out to be lucrative.

A/S Vestas

Vestas, which is today the world's largest manufacturer of windmills, is a personally owned limited company, that was founded in 1946 with a production of kitchen appliances and agricultural machinery. After the first energy crisis in 1973–74 sales conditions were impaired and Vestas tried to find new products. The first attempts with windmills were made in 1978–79, and in 1979 it was decided to start production.

Right from the beginning the sale of windmills has been subsidied as plants for renewable energy have received government grants in Denmark since 1979. Thus a market potential was created for a technology which could not otherwise break even. The exportation of windmills to California has also been assisted by favourable taxation conditions for investors.

In 1985 Vestas had a market share of 26 percent of the American market representing 90 percent of the world market. The major competitors are other Danish windmill producers and competition is fairly keen. Windmills are sold solely on the relation between the electricity output of the mill and the price.

It has of course been very important to Vestas that the actual market for windmills has shown such an explosive growth, assisted by public subsidy schemes. However, besides this there is a number of factors underlying Vestas' success which are more specific:

- Vestas' products – and those of other Danish windmill producers – are more competitive than the windmills of the American airline companies even though these companies have a much larger development budget and many years of experience in aerodynamics. This is due to the fact that Vestas as a manufacturer of agricultural machinery has been used to making technologically simple and dependable products contrary to the technologically advanced mills that the aviation industry has produced and which in return have been vulnerable and unable to live up to the demands for reliable operation.

- Vestas came into the market for windmill production so early that they can document several years of experience in the operation which is the buyers' guarantee for dependability and efficiency.

- A third factor has been the close cooperation between research, authorities, users, producers as well as light and power companies in Denmark.

- Vestas is manufacturing more products at their own factory than most other windmill manufacturers which means greater supply security, flexibility and better control of the product development.

The prospects for the future of Vestas are good. On a somewhat longer view the great potential for exports is expected to be in the third world, especially in the countries where the trade wind blows and where there are ideal possibilities of production of electricity by means of a windmill. At the same time Vestas has strengthened its position within its old product areas and has purchased a number of firms in order to strengthen and expand its product range.

3. Finnish Fast Growing Companies

The enterprises listed in Table 2 were chosen in Finland as examples of newly established successful companies.

A majority of the chosen firms can be classified to be small or medium-size companies. Three of the companies are primarily oriented towards domestic markets, the others are highly internationalized. With one exception (Jaakko Pöyry Group) all companies are originally manufacturing firms, but some of them have developed towards service production by growing close to customers and supplying not only goods but also various kinds of services in the form of production systems, "turn-key" packages, maintenance services, etc.

Table 2 Successful Finnish companies

	Estab-lished	Turnover (mill. FIM)				Number of employees				Foreign sales %	Business areas
		1960	1970	1980	1985	1960	1970	1980	1985		
The Ensto Group	1958	1	8	110	240	25	165	600	713	25	Electrical equipment
Isku Companies	1928	10	55	260	500	505	1 450	1 800	2 090	3	Furnitures
Kemppi	1949	1	17	150	186	80	200	666	526	70	Welding equipment
Larox	1962			20	63			95	150	80	Measuring equipment
Makron Companies	1965	–	2	11	140[a]	–	10	80	396[a]	60	Machinery plastic
The Martela Group	1945			117	255			495	674	12	Office furnitures
Mobira	1979	–	2	68	660	–	50	300	1 300	65	Mobile telephones
The Oras Group	1945	2	17	125	272	110	334	500	964	40	Mixers, valves
The Jaakko Pöyry Group	1958				375				2 000	78	Engineer-ing and consulting services
Vaisala	1936			68	118			265	370	90	Meteoro-logical in-struments
Total manufacturing[e]	(average)				17.5				40	35	
500 largest companies	(average)				470				880	40	

[a] 1.5.1985–30.4.1986.

Note: The producer price index in manufacturing rose from 100 in 1950 to 170 in 1960, 250 in 1970, 769 in 1980 and 1 096 in 1985.

The Ensto Group

The Ensto Group specializes in marketing and producing electrical accessories for electricity plants and telephone companies; distribution boards and components; programmable switching timers; electrical heating systems; installation materials, light fittings and wiring fittings. With a market share of about 75 % the company is a market leader in Finland. It has plants in three localities in Finland, subsidiaries in Stockholm and Oslo and, since 1986, a factory for light fittings in Ireland.

The company was founded in 1958 by Ensio Miettinen as an engineering company, the origin of the present Ensto group. The business idea was to produce small electrical accessories by means of automatic lathes. The 1960s also saw a strong expansion of plastic pressing tools.

For a long time, the company was managed with an entrepreneurial strategy in the hands of the founder. It did not proliferate into other fields but stuck strictly to its traditional field of know-how. As the company expanded, production units were organized into profit centres. In 1979 the company began to move towards delegated management responsibility: a new MD was hired and the owner assumed his duties in the Board of Directors.

To keep ahead of customer demand and technological advances is an essential strategy of the Board. The latest project launched in 1985 is an automatic lighting system for airports, which is rapidly gaining markets at home and abroad.

Isku Companies

In the 1920s a young man – Eino Vikström – started to work as an apprentice in a joinery shop, becoming soon a partner and ultimately the owner. The company called Lahden Puukaluste Oy was established in 1928, specializing in office furniture.

Steadily gaining market shares in the 1950s, the next step for the company was to set up a network of retail outlets. A new dynamic name "Iskukaluste" was adopted, the Finnish word "isku"meaning a strike, a blow etc., up to a striking success. End 1960s saw an upstream expansion: the company built its own sawmill and production facilities for chipboard and plywood. In the 1980s it was the leading manufacturer in its field in Finland. This decade saw a new surge of investment in retail outlets. Farsighted financial planning and the revision of the corporate taxation laws by end-1960s enabled the company to improve its capital structure and accumulate risk capital.

Key elements in Isku's strategies are a large assortment for both home and public facilities; Isku's own retail network and production of materials to assure control over quality; financing facilities geared to marketing efforts (terms of payment and hire purchase). There is an integrated process from logs to finished furniture covering all the requisite techniques. Designers are involved in the planning process from preliminary sketches to finished products and they follow the market response so as to get a quick feedback through Isku's sales organization. All steps of the production and marketing process are under control.

1982 saw the beginning of import and wholesale of carpets through Isku's outlets and other retailers to make for a more complete service. Isku provides interior furnishing service in cooperation with the customer's own architect or interior designer. A major effort has been put into designing interiors for hospitals, schools, hotels, theatres and conference rooms.

Kemppi

Kemppi, a pioneer in the field of welding technology, a market leader in Finland and in a great number of countries, was founded in 1949 by Martti Kemppi, a talented electrician from Carelia.

The original business idea was startlingly straightforward: the need to attach metal components to each other and detach them. This holds good today. Production range covers the entire field of electric welding from handyman's portable tools to industrial robots. The key to success lies in intensive research and product development enabling the company to maintain its pioneering role.

In 1986 Kemppi won a national price for its quality approach. Maintaining quality is an essential ingredient in its business strategy: to be the first or in the forefront in introducing new technology.

Larox

Larox is a Finnish medium-size company producing classification, concentration and filtration equipment for process industries. It was founded by Nuutti Vartiainen, who is one of the most successful Finnish entrepreneurs.

In 1977 Nuutti Vartiainen acquired control of Lappeenrannan Konepaja Ltd, an old engineering firm. He renamed it to Larox Ltd and shifted the production to classification, concentration and filtration equipment for the mining and mineral processing industries, based on prototypes developed by Roxon Ltd (a company earlier owned by Vartiainen) and purchases of domestic and foreign licenses. The idea of the new company was to produce equipment for a specialized market segment.

Larox carried on an active product design and marketing effort. A fruitful cooperation was established between the company and the local University of Technology in Lappeenranta. The company soon became successful both in the domestic and international market. It has showed good profits: the gross operation profit rate has been around 25 % during the last few years. The diversification of products for other processing industries, such as food industry and pulp and paper industry, and for waste water treatment started in the 1980s. However, the production assortment is still very concentrated and the company size has not been greatly expanded. The current number of employees is around 120.

The company established, among others, mobile filter laboratories and pilot testing facilities. Flexibility and high quality have been its great assets in competition with large established international companies. An internationalization of acitivities started in the early 1980s.

Makron Companies

The origin of Makron companies traces back to 1965, when Mr. Jalo Paananen founded a small company, Terspeikko Ltd, producing fastening techniques and equipments for the construction industry. Strong expansion of construction activities and fast progress in construction technology at that time formed a favourable external environment for the company.

In the early 1970s a decision was made to systematically search for new business. In 1972 a new unit of mechanical engineering was founded and production of machinery for plastic ski production started in 1974. The timing was perfect, since the break-through of new materials, i.e. plastics, in ski production had just taken place. Close co-operation with customers gave basis for successful product development.

Recently the Makron companies have started a new product line of stone working machinery and acquired a dynamic medium-size company producing various plastic products on a sub-contracting basis for a wide range of industries. Today the Makron group consists of four small or medium-size companies.

The expansion of the Makron companies is characterized by carefully designed strategies, active and systematic search for new business and accurate timing of new operations which has made it possible for the firm to make use of unexploited profit opportunities. The key elements of success can be summarized as follows:

- Clear customer oriented approach: identification of and effective response to customer needs have formed the basis of new activities, co-operation with customers in product development has reduced risks and created firm business relations
- Search for superior technical solutions to specified customer needs
- Compete on quality rather than costs
- Systematic utilization of technological opportunities, searching gaps between technological frontiers and currently applied techniques in potential customer industries
- Systematic internationalization of business
- A special feature of late 1970s and early 1980s: utilization of business opportunities offered by rapidly expanding Soviet trade
- Development of project management relying on highly educated personnel.

The Martela Group

Established in 1945, Martela specializes in furniture for full range office systems, libraries, conferences and training areas and other public premises, banks, canteens, restaurants, etc.

It is market leader in Finland and among the largest in Europe. The strategy of the company is designed around end-use; to create optimal and ergonomic working conditions by means of office furniture and equipment. A CAD layout planning system helps to find individually fitted solutions. Exports account for less than a fifth of total sales but their share is rising. Since 1984, the company has been organized into four profit centers for domestic and foreign sales. There are subsidiaries in Scandinavia and a Profit Center in the U.K., with bases in Milton Keynes and in Singapore. Martela Office Consultants operate worldwide for in-depth studies, and another company ATK-Väline – which specializes in EDP supplies was recently acquired to complete the range of services.

Mobira

The market for mobile telephones is one of the most dynamic in the world with an annual growth rate of some 50 percent. Every third client is a Scandinavian: Nordic countries with a single integrated cellular system offer better sales ground than countries with their own separate systems.

The Finnish company Mobira was established in 1979 by an agreement between Nokia Electronics, and the TV set manufacturer Salora, to put together the radiotelephone activities of the two companies with a view of producing mobile phones and related quipment and systemes. The company expanded rapidly. Today Mobira has a market share of 13 per cent, which makes it number four in the world, market leader in Europe and the undisputed ruler in Scandinavia. Recently Nokia acquired Salora's share of Mobira which now is one of Nokia's ten industry groups known as Nokia-Mobira.

From the very beginning Mobira aimed at exports. Thus, without any intermediate steps, Mobira entered into global competition with such giants as Mitsubishi, NEC, Matsushita and the American Motorola.

The main strategy of Mobira is to stay well ahead in technology. It has built up a very innovative-minded organization for this purpose. A powerful impetus was given by the rapid build-up of the automatic Nordic Mobile Telephone network since 1982. A key product was the recent innovative product Mobira Talkman, a compact portable weighing 4.5 kilograms including rechargeable batteries, and being adaptable to a multitude of gadgets and users. Moreover, Mobira competes successfully in the market for cellular base stations and complete cellular systems.

A great number of small or medium-size countries were won over to Mobira: in addition to the Nordic countries, rocketing sales were the result in Britain, Austria, Malaysia and Canada. Mobira co-operates with a local manufacturer in France. For the U.S. market, Mobira set up a factory in South Korea as a joint venture with an American company. Certain size is necessary for competitiveness, and this is why Mobira is putting a lot of weight on market leadership and growth.

The Oras Group

The Oras group originated as a family firm in 1945 looking for a product well suited for mass production in those years when scarcity was the dominant factor. The company soon found its own line in the field of mixers, valves and other sanitary fittings, well adapted to the buoyant housing market.

An intensive product development brought a successful single lever mixer Safira to the market by mid 1970s; some 50 000 units were produced in 1976 but a tenfold production was attained by early 1980s. By the time the rivals caught up Oras had gone over to a more automated mass production which guaranteed profits even at the face of a fierce price competition. The number of steps involved in production was radically reduced. A decisive factor was the early competence acquired in plastics technology.

The export strategy has been to focus on a small number of countries, co-operate with local manufacturers and put up or acquire establishments in these target countries. Oras have subsidiaries in the Nordic countries, France and Germany.

In marketing, Oras aims at appraching not only the final customer but also all the intermediate agents in the field of housing. An extensive training given to interior decorators and other suppliers keeps the Oras mixers and valves well in foreground. The recent boom in house repairs as compared to new housing has given weight to marketing efforts aimed directly at the final consumer.

The Jaakko Pöyry Group

Jaakko Pöyry is an internationally known consulting engineering company. Founded in 1958 by two young engineers, Jaakko Pöyry and Jaakko Murto, to design a pulp mill in Finland, the Jaakko Pöyry Group soon became known for the quality of its engineering services for the pulp and paper industry.

The Jaakko Pöyry Group provides a wide range of independent engineering and consulting services to the forest-based and other process industries. Its services cover every phase of a project: basic idea, preliminary studies, basic and detailed engineering, construction management, operation management services, follow- up routines, maintenance, development and training. In addition to engineering projects, the Jaakko Pöyry Group carries out a variety of techno-economic studies for forest-based and other process industries: forestry master plans and other major forestry studies, feasibility studies, R&D studies to test raw materials, extensive marketing research, and special studies such as transport systems planning.

Functions auxiliary or relating to the project work have gradually been developed into operating arms of the mother company. Thus, the services of Jaakko Pöyry are backed up by subsidiaries in Finland and abroad specialized in project and construction management, structural design, electric and HVAC design, energy studies, computer technology, maintenance consulting and comprehensive marketing research services.

Large amount of valuable information has been accumulated in the Jaakko Pöyry data banks over the years: current information on the site, products, capacities and technical features of virtually all pulp and paper mills in the world, covering about 9 000 paper machines. The forestry data banks include a vast amount of data by countries on production, consumption and trade of forest products. This information is used in work for individual clients and published in the form of independent reports of which some are published on a regular basis and other are updated upon request.

Vaisala

The Vaisala Company was established in 1936 by Dr. Vilho Väisälä, a mathematician interested in meteorological instrumentation and radio technology. Following the proverb "measure a thousand times, cut once", this talented inventor developed special instruments and methods to get information from weather balloons. The unique radiosonde found a brisk demand on world market and paved the way for a leading position in a narrow market segment of highly sophisticated technology, with subsequent emphasis on measurement problems in general and systems to solve them.

Vaisala develops, manufactures and markets solutions to measurement problems and opportunities for meteorology, environmental sciences and industry. This comprises upper-air systems, surface weather systems and sensor systems. Meteorological services, research institutes, telecommunications, industry and defense count among customers as well as the programs and campaigns of the World Meterological Organization (WMO).

In this business area it is an absolute necessity to be among the leaders in technology. Vaisala's R&D activity represents some 25 percent of net sales, to assure a steady flow of technologically advanced measurement systems. Laser technology is the most recent addition to the tool box.

To build up a unique, company culture, internal training plays an essential role in Vaisala's strategies. It aims at creative and analytical trouble-shooting as well as team work. A decentralized "Total Quality Control System" has been developed which places responsibility with each individual instead of an independent inspection and quality control. This means a comprehensive grasp of customer's problems, R&D quality control, manufacturing quality and the development of service, with the whole company, through each individual, motivated to quality control.

4. Norwegian Fast Growing Companies

The Norwegian case studies were chosen according to the following criteria:

- among the 500 largest Norwegian companies 1984
- high profitability
- independent companies (or subsidiaries)
- fast growth

A large number of companies qualified in terms of these criteria, to be included in the group. In the final selection the companies listed in Table 3 were selected:

As can be seen from the table the companies differ considerable in size and internationalization. The largest company in the group is Dyno with a total turnover of 2 900 million NOK, the smallest Simrad Optronics with 65 million NOK. Only two of the companies are typically home market oriented companies, the others are highly internationalized.

Table 3 Successful Norwegian companies

	Estab-lished	Turnover (Mill. NOK)			Number of employees			Foreign sales % 1984	Business area 1984
		1966	1975	1984	1966	1975	1984		
G. Block Watne	1927	52	585	1 384	200	1 383	3 192	1	Building contract.
Dyno Industrier	1865	154	833	2 914	1 268	2 421	3 192	56	Chemicals
Ekornes	1934	35	121	566	315	450	1 585	45	Furniture
Frank Mohn	1938	–	135	559	–	277	738	92	Pump systems
Kverneland	1879	49	206	688	510	988	1 333	86	Agricult. machines
Norsk Data	1967	–	55	1 371	–	165	2 214	48	Computers
Nyco	1874	–	–	468	–	250[a]	568	78	Pharmaceuticals
Simrad Optronics	1980	–	–	65	–	–	117	49	Electro-optics
Toro	1946	–	–	303	–	250[a]	585	9	Food products
Ulstein	1909	18	190	893	245	713	1 115	58	Ship-building
Total manufacturing[b]	(average)			–			–	26	
500 largest companies[b]	(average)			460			578	40	

[a] 1976, [b] excluding oil companies.

Note: The wholesale price index rose from 100 in 1966 to 172 in 1974 and 348 in 1984.

G. Block Watne

Block Watne, who is the largest manufacturer of system built, light-weight constructed family-houses in Scandinavia, was founded in 1927.

The Block Watne group is organized in four divisions:

- Residential House
- Commercial Buildings
- Trade Division
- Block Watne International.

The residential House Division is the company's most important activity and represented 61 % of the company's total turnover in 1984. In addition to a wide range of tailormade detached houses, Block Watne also offers expertise and experience in planning and construction of housing development of different sizes – from architectural and consulting services to finished houses.

Block Watne's market share in Norway is about 10 %, and the company has succeeded to increase the market share the last two years. The total housing market in Norway has declined by 30 % in the same period. The market for reconstruction and renewal, however, is a growing market in Norway.

In Norway there is a great demand for planning and building of schools, play schools, public health and office buildings. The market for commercial buildings has been stable during the last two years. Block Watne's market share in this field is small, but it is a fast growing activity in the company.

Another fast growing activity is the trade division, which has developed a chain of do-it-yourself shops. This nationwide chain of shops, selling building components and wooden materials, complements the company's activities in the local markets. Furthermore, Block Watne expects that substantial revenues will come from international operations in the years to come. The growth will take place through mergers and acquisitions. It remains to see if this will be a successful strategy.

G. Block Watne was listed on the Oslo Stock Exchange in 1972.

Dyno

Dyno was founded in 1865 as a manufacturer of explosives. Today Dyno is a more diversified company. The activities are organized in five groups:

1 The Chemicals Group
2 The Explosives Group
3 The Construction Machinery Division
4 The Plastic Processing Group
5 Dyno Engineering

The Explosive Group is the largest division in the company with a share of total turnover of about 37 % in 1984. Today Dyno is one of the leading manufacturers of explosives in the world. The take-over of the American explosive company, Ireco, has to a high degree contributed to Dyno's success. The acquisition was part of Dyno's strategy for increased internationalization. In 1985 Dyno acquired the American company Hercules. Through this acquisition Dyno will be the main producer of explosives in the US and one of the largest explosives companies in the world.

For several years Norsk Hydro has been the largest shareholder in Dyno with a 36 % ownership by year-end 1984. Hydro is an important Dyno supplier of strategic raw materials, such as urea for the adhesives business and nitrates for the domestic explosive business. In March 1984 an agreement was reached between Dyno and Norsk Hydro, which made Dyno to a daughter company of Norsk Hydro (50.5 % ownership). Dyno continues to be quoted on the Oslo Stock Exchange and operates independently to Norsk Hydro's organization.

For the time being, Dyno have partly or fully owned companies in 17 countries. The foreign sale represented nearly 60 % of total turnover in 1984, but this share is rising fast. It is the company's aim to increase it to 70–75 % during the next few years. The internationalization will take place through foreign establishments, acquisitions, joint-ventures etc. The reason for this strategy is a limited growth potential in Norway. Expansion must therefore be secured through entries to new markets, especially for parts of the Chemicals and Explosives Groups, which are very dependent on activities within the construction sector.

J.E. Ekornes

Ekornes was founded in 1934 as an ordinary small scale furniture producer. The product range has gradually been extended, and today the company has a thoroughly prepared and composed assortment of furniture. Among the most important products are stressless/armchairs, lounge suites, tables, mattress/beds and cupboards.

Ekornes is now the largest company in Scandinavia in its field. The Stressless-chair, which has been produced since 1970, has become the company's main product. 52 % of the operating revenues in 1984 came from the production of Stressless and other armchairs. In world scale Ekornes is among the market leaders in this field. Ekornes is also Europe's largest producer of skin furniture.

Ekornes' strategy can be summarized as follows:

- concentration on consumer-oriented marketing, mainly direct-mail,
- internationalization; with the Scandinavian market as a base,
- expansion through specialization and acquisitions,
- financial safety.

Until spring 1985 Ekornes was a family owned company. In April 1985 the company made a new share issue, and another one is planned next year, perhaps followed by an introduction to the Oslo Stock Exchange.

Ekornes' rapid growth had until 1983 been accompanied by high profits. However, in 1984 the profits deteriorated, partly due to an unexpected high price on raw materials.

The home market is too small for a continuing expansion. Therefore the company is concentrating on the export market, especially Scandinavia, Great Britain and USA. The strategy for the next coming years is to work out a balanced growth in the different export markets. Competitive products, offensive marketing and a concentrated effort on those markets which are expected to give the highest growth possibilities, are the company's strategies for a continuing internationalization.

Frank Mohn

Frank Mohn, which is a fully owned family company, was founded in 1938. Frank Mohn is one of the leading companies in the world within design, development and production of pump systems for shipping. At the end of the 1970s, Frank Mohn diversified into the offshore market with its pump technology.

Frank Mohn started to develop and produce their own products after the last war, but it was the introduction of hydraulic pumps in the early 60s, and some years later cargo pumps for chemical tankers and product carriers, which put speed to the company's expansion and introduced Frank Mohn to the world market. Besides this product, Frank Mohn's product portfolio includes various hydraulic pumpsystems for shipping and offshore.

The offshore-share of total turnover is small, but it is a fast growing activity and several larger contracts have been concluded. But this activity is very dependent upon the activity in the North Sea.

Frank Mohn is a internationalized company with subsidiaries in 5 countries; USA, Great Britain, Sweden, Singapore and the Netherlands, together with offices in Japan and Brazil. The market for Frank Mohn's products is the world's shipbuilding nations. The biggest market is the Far East and especially South-Korea. For the future the company expects a rising homemarket share, due to increasing offshore deliveries to the North Sea.

The fast growth of the company during the last decades has been followed by a rising profitability and solidity. Frank Mohn's strong financial position has secured economic freedom of action in such a way that the company can use over 5 % of total turnover to research and development.

Kverneland

Kverneland was formed back in 1879. Kverneland produces machines used in agriculture, and is the world's leading producer of ploughs.

An important part of the company's internationalization strategy has been the building up of trading companies abroad, either as fully owned daughter companies, or as joint-ventures. In this way Kverneland can operate close to its markets. Nevertheless the company's market strategy is to let 50 % of total production go through importers.

Kverneland was introduced to the Oslo Stock Exchange, stock brokers list, in 1983 and was accepted on the regular Stock Exchange list as from 1984.

In the last 5-years period the company has gone through a strong growth. Measured in current value, the total turnover has doubled. The growth has also been accompanied by a satisfactory economic rate of return. This growth forms a sharp contrast to the general development in the market for machines used in agriculture in Europe and North-America, which stagnated during the period.

The company is expecting further growth for the next years to come. The basis for further expansion will be a concentrated effort on product development and product gearing, together with marketing and service. The growth is expected to distribute fairly evenly between the company's traditionally, well-established markets. Kverneland's marketing policy for the next years is to market other products which will complement the company's own products.

Norsk Data

Norsk Data was founded in 1967. The company designs, develops, manufactures, sells and services a compatible line of minicomputers. The computers are designed for three main areas of use:

1 Business data processing, including time sharing and transaction processing
2 Office automation, involving word processing and information retrieval
3 High-speed scientific and technical applications.

Sales and services are organized from fully owned daughter companies in 11 countries with totally 57 offices. Other markets are served by agents or cooperating companies.

It is Norsk Data's firm belief that integration of the company's products is a major competitive strength, and it is mainly this strategy which lies behind the company's success. The company's integrated information system permits users of the company's terminals to perform all office automation and transaction processing tasks from a single workstation.

Norsk Data has gone through a remarkable growth since its start. The company's total turnover in 1984 was 25 times greater than 10 years ago. This rapid growth has also been accompanied by a high and rising profitability. Norsk Data is in this respect in line with, or even better, than its large American competitors.

Norsk Data was introduced to the Oslo Stock Exchange in January, 1974. The shares are also traded at the Stock Exchanges in Stockholm, London and New York. The company are planning an introduction to the Stock Exchanges in Frankfurt and Hamburg. No shareholder have more than 20 % of the share capital, and most of the employees are shareholders in the company.

Norsk Data's strategy, at present, is to put increasing efforts in research & development and marketing of the company's products and thereby increase the marketshare, rather than to seek higher profit margins, which in 1984 was 17 % before taxes. Norway is the biggest market for Norsk Data. However, at the present stage of the company's development, it has chosen to concentrate on building up marketshares in the European market. The next step in Norsk Data's expansion is an activity within the informatics industry with markets that encompass the world.

Nyco

Nyegaard & Co. (Nyco) was founded in 1874 and is the oldest pharmaceutical company in Norway. Today Nyco is a research- based company which uses about 15 % of total income on research and development. Besides Norway, Nyco is marketing its products through its own subsidiaries in Sweden, Denmark, Great Britain, the Netherlands and Belgium. In other countries Nyco is represented through licences.

In 1981 Nyco was taken over by Actinor, and in 1985 Actinor was taken over by Hafslund. Today Nyco is a fully owned subsidiary of Hafslund.

Nyco's main products are contrast fluid, pharmaceutical products, reagents and medical-technical products. Nyco's newest X-ray contrast fluid, Omnipaque, is now introduced to the European market and has obtained substantial market shares. In USA, where Omnipaque has not been introduced yet, the contrast fluid Amnipaque has maintained a very satisfactory market share. In Japan Amnipaque's share of the market has increased radically during the last years.

The company is expecting a substantial growth in total turnover and profits for the next years to come. The X-ray contrast fluids will still be the company's largest product area. In this field Nyco is the leading company in the world. It is also Nyco's aim to develop products within other areas, which can obtain as strong position in the international pharmaceutical market as Nyco's X-ray contrast fluid has today.

In the coming years, Nyco will continue its internationalization process. To do this the company will carry on its extensive research activities, intensify the marketing, expanding through acquisitions and co-operation with companies in its field. As a strategic investment on the research side, Nyco bought 17 % of the shares in Seragen, Inc., USA in 1984.

Simrad Optronics

Simrad Optronics was formed in November 1980 as a fully owned daughter company of Simrad and took at the same time over all activities and responsibilities earlier handled by the Electro Optics Division of Simrad. The electro-optics activities within Simrad were from the start in 1970 based upon application of advanced electronic and optical technology.

Gradually the company has expanded its product line and is today a manufacturer of laser rangefinders for infantry, artillery, mechanized troops, anti-aircraft systems as well as for naval applications. Simrad Optronics is today one of Europe's leading companies in the electro-optic field. The company is approved in accordance with NATO's highest classification standard.

Simrad Optronics has also moved into civilian markets and formed a separate division which will handle all civilian products. The strategy behind the success has been quality combined with advanced technology and first class customer service.

Simrad Optronics was introduced to the Oslo Stock Exchange, Stock Brokers' list in April 1983 and were accepted on the regular Stock Exchange list as from January 1984.

The future for the electro-optic markets looks rather bright. The need for laser rangefinders, night sights and thermal imagers is big and increasing in all the countries where the company markets its products. Simrad Optronics seems today to be on safe ground with an increasing backlog of orders, good liquidity and a number of products which is expected to contribute to increasing sales and profits. It is expected that the company will expand its civilian activities more than the military activities in the years to come.

Toro

Toro was founded in 1946 as a fully owned family company by Rieber & Son. It started with production of bouillion cubes and, a few years later, with different kinds of soups. Already in 1959 Toro was Norway's leading producer of ready-made soup. During the years a number of products have been developed and today Toro is the largest producer of dried foods in Scandinavia.

Through an acquisition in January 1985 Toro's scope of interest widened from dried foods to other preservation methods.

About 90 % of Toro's production is sold in Norway. The company has a marketshare between 70 and 90 % for all its products in the domestic market. 3/4 of the products is sold to household and 1/4 to institutions. Most of Toro's export goes to Sweden, Denmark, USA and Canada.

The company's strategy for the future seems two-fold:

1 Development of the company's share of the fresh-food market in Norway.

2 Internationalize the traditional Toro-production; both by increasing export and by establishing production plants in foreign countries.

Toro has gone through a steady growth since its foundation, and the results have been improving over the last years. The company is expecting further progress in its profit margins for the next coming years.

Ulstein

The Ulstein Group, a family dominated company which was founded in 1909, is located on the West Coast of Norway. The group includes a number of yards and marine equipment manufacturers.

The Ulstein Group's companies have in spite of the hard competitive conditions since 1973 been able to strengthen their financial position considerably during the last years. This is to a large extent due to successful efforts in product development of specialized vessels for the offshore industry and active marketing and sales efforts of such vessels and designs at home and abroad.

Combined with this the group's ships equipment manufacturing companies, which all are very export oriented, have made considerable investments in buildings and in particular in sophisticated CNC machines to increase productivity and ensure that the high quality demands for marine gears, propellers and other ships equipment are satisfied. It is the Ulstein Group's goal to expand the product range with sales and service related products within this sector.

Ulstein's basis for future business is a capital intensive production with international market potential, in an area where Norwegian industry should have the possibility and ability to compete internationally. However, one has to accept that shipbuilding in Norway will not return to its previous level. But the Ulstein Group today has a good basis for further development within their special areas, but this will, according to themselves, continue to require considerable efforts for product development, international marketing and productivity improvements at all levels within the group.

5. Swedish Fast Growing Companies

The Swedish case studies were chosen according to the following criteria

- among the 500 largest Swedish companies 1984[1])
- established after (or during) the second world war
- independent companies (or subsidiaries)
- high profitability
- fast growth

A large number of companies qualified to be included in the group.[2]) The ones selected are listed in Table 4.

Table 4 Successful Swedish companies

	Estab-lished	Turnover (Mill. SEK)				Number of employees				Foreign sales %	Business area
		1950	1960	1970	1984	1950	1960	1970	1984		
Ellos	1947	–	–	82	1 004	–	–	326	762	30	Mail order
Fermenta	(1952) 1982	–	–	95[h]	449	–	–	179[h]	358	98	Pharma-ceuticals
Frigoscandia	1948	1	–	500	1 400	9	–	1 269[j]	2 402	55	Cold transp. and storage
Gambro	1965	–	6[d]	400[e]	1 400	–	121[d]	200–300	2 800	96	Medical engineer-ing equip.
Hemglass	1959	–	–	11[f]	220	–	–	45[f]	300	10	Food products
Hennes & Mauritz	1943	–	–	170	3 047	–	214	750	3 635	37	Clothes retailing
Ikea	1943	3[a]	79[b]	616[c]	7 000	15[a]	250[b]	1 500[c]	8 300	70	Furniture retailing
IKO Kabel	1947	–	30	109	556	–	200	390	480	21	Electro-techn. products
Carl Munters	1955	–	–	41[f]	491[g]	–	–	215[f]	880[g]	85	Energy products
Tetra Pak	1950	–	(45)	(330)	12 738	–	(250)	(1173)	9 000	90	Machinery
228 large manufacturing companies	(average)[k]				1 100[j]	–	–	–	1 413[j]	54	

[a] 1954, [b] 1964, [c] 1974, [d] 1967, [f] 1973, [g] 1983, [h] 1982, [i] 1972, [j] 1985, [k] companies included in IUIs planning survey.

Note: The producer price index in manufacturing rose from 100 in 1950 to 138 in 1960, 173 in 1970 and 625 in 1984.

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[1]) Hemglass is not among the top 500 companies but is an interesting case as a small company in a one firm dominated, mature market.

[2]) Other companies, which could have been included, are Crawford Door, Pågens, Forsheda, Inter Innovation, Stena and Eldon.

As can be seen from the table the companies differ considerably in size and internationalization. The largest company in the group is Tetra Pak with a total turn over of 12 billion SEK, the smallest Hemglass with approximately 220 million SEK. Four of the companies are primarily oriented towards the Swedish marked, the others are highly internationalized.

The selection of companies reflects rather well the trends towards more service- and soft ware-intensive production in the Swedish business sector. An increasing part of firm value added is made up of R&D, services and marketing. The selection also highlights the growth of the service sector compared to the traditional manufacturing sector. Thus of the chosen companies 4 are primarily active in the service sector, and of the remaining 6 manufacturing firms a majority is producing knowledge and soft ware-intensive products and systems.

Ellos

Ellos was founded in 1947 as a mail order company. The company grew rapidly and was in 1968 Scandinavias leading company in its field. The growth has partly been achieved by a couple of acquisitions. The strategy behind the success has been a combination of a broad product range, high degree of automation, low prices, quality control and efficient marketing. The company has no production facilities of its own.

The mail order business is very capital intensive, especially regarding inventories and customer accounts receivable. Ellos was therefore introduced to the Stockholm stock exchange in 1985.

The future of the mail order markets looks rather bright. The share of mail order trade compared to total retailing has been increasing steadily in the last decade. Ellos strategy is to increase its markets and market shares by a combination of internationalization, acquisitions and segmentation and broadening of the product range. In 1983 the company penetrated the Norwegian market which today accounts for some 30 % of total turnover. Denmark and Finland seem to be next in line.

Fermenta

Fermenta can trace its origin back to a fermentation-unit, built in 1952, as a part of Kabi AB. In the middle of the 1970s Astra bought the factory but sold it in 82-01-01 to Reefat El-Sayed. Since then the growth has been very fast. Fermenta was listed on the Stockholm stock exchange in 1984.

Fermenta produces raw materials for penicillin. Many of the large chemical companies produce the same kind of products, but the industry's profitability has, on the whole, been very low.

Fermenta has therefore tried to take a structural hold on the industry; i.e. buy competitors, specialize production between different plants and through larger scales of production get a higher profitability. The rapid growth has thus been accomplished by a series of acquisitions, which has made Fermenta one of the leading companies in its field. Just like Electrolux the acquisitions are partly financed by the selling out of odd products and divisions, partly by the printing of new shares. Through the acquisitions Fermenta has also succeded in integrating forward and has become less dependent on the most basic products which tend to fluctuate quite much in price. The profit margins have also increased.[1])

Thus, the rapid growth has been accompanied by a high and rising profitability and, thanks to large issues of new shares, by a rising solidity.

Today Fermenta's products are primarily aimed for the penicillin-market, which in global terms is growing with only 6–7 % per year. Fermenta is therefore also trying to increase the share of products going to the "animal feed" and "animal health"-markets.

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[1]) During 1986 major changes regarding the future management and ownership-situation have occured. This has also affected future strategies. We have not been able to take these late developments into consideration in this analysis.

Frigoscandia

Frigoscandia, which is a company specializing in cold-storage and (cold)transports, was founded in Helsingborg in 1948. The company's business idea was the need for a specialized distributor for frozen food, where the quality of the products is dependent on low temperatures in each and every link of the chain.

The company began its operations in Sweden, but established during the 50s cold storages in Denmark, Germany and Great Britain. During the 70s further establishments took place in Australia, Middle East Europe and South America.

At the same time the company diversified into related areas, for example design and marketing of freezing-equipment and machinery, and production of building units for cold storage (sold in 1982). The company has thus utilized its accumulated know-how in deep freezing and are in these areas among the world leaders. In cold storages the company is one of the leading in Europe, in transportation among the leading in Sweden.

Frigoscandia's strategy is, at present, to specialize in complicated transports and storages and thereby being able to compete with higher qualities and higher knowledge. The company tries to concentrate its resources on a few markets and there to reach a dominant position.The present strategy is aimed at maintaining and improving the profit levels by becoming less price sensitive.

Frigoscandia was until 1978, when AGA purchased it, a subsidiary of Malmros Rederi AB. No major changes took place following the acquisition by AGA.

Gambro

Gambro was founded in the mid 1960s by Holger Crafoord for the commercial exploitation of the artificial expendable kidney, invented by Nils Alwall. The first kidney was produced in 1967.

The growth was very rapid from the early beginning. Due to foremost unofficial trade barriers Gambro was "forced" to internationalize from the very beginning. At the same time the company broadened its assortment of dialysis products and corresponding machinery. Gambro's strategy was at this time defined as "low production costs for standard equipment and high and continuous investments and R&D in new areas". In 1980 the company had become world leader in hemodialysis.

In 1981 the company diversified into the heart-lung product area and built up a special network of suppliers.

Due to the rapid growth the solidity decreased to less than 20 % in the end of the 70s. In 1982 the company made a new share issue and was in 1983 listed on the Stockholm stock exchange and on the New York OTC-market as well. In 1984 and 1985 the founder's family chose to sell a majority of the shares to the Sonesson Group.

Gambro's rapid growth had until 1983 been accompanied by high profits. In 1984 the profits deteriorated very sharply, partly due to a fall in prices in U.S.A caused by a change in federal compensation to hospitals, partly to problems with new product generations.

Hemglass

Hemglass was founded in 1959 as an ordinary small-scale ice-cream producer. The company did not show any spectacular growth or profits in the beginning. In the end of the 60s, however, Hemglass introduced a new concept. The main idea was to transport frozen products in an unbroken chain straight to the consumer's home, instead of having them to buy frozen food in a store and risk its melting on the way home.

This concept was an immediate success. Another main strategy is to distribute the products through individual entrepreneurs who franchise the right to use Hemglass sign and equipment, but with central marketing. This means that the need for capital decreases, and that the seller's incentives may increase.

In 1973 Hemglass was taken over by Hexagon, a stock listed development company.

The ice-cream market in Sweden has for a long time been relatively mature. Hemglass has, therefore, tried to expand its market base in two ways: a) internationalization into Denmark, Norway and Germany, b) broadening of the product assortment by including frozen juice and hamburgers.

The future of Hemglass will to a large extent depend upon the success of the diversification and internationalization efforts. The ice-cream market in Sweden will probably remain rather constant and is furthermore heavily dominated by Glacebolaget with its market share of more than 55 %.

Hennes & Mauritz

Hennes & Mauritz is Sweden's largest retailer of clothes. The company was founded in 1943, and in 1947 the first Hennes-shop (women's clothes) was opened. At the beginning the company only sold women's clothes, but has since then diversified into men's and children's clothes as well.

The growth of the company was steady until the mid 1960s, when it suddenly increased rapidly. This was due partly to the growing up of the 1940s baby boom, partly to an intensified new establishment of shops in Sweden and in Norway and Denmark.

Hennes & Mauritz' strategy can be described as

- large volumes and relatively low prices,
- high utilization of shop space for product exhibitions, high inventory turnover, many product changes per year,
- intensive marketing and special offers.

The growth of the Swedish clothing market has decreased during the last decade due, among other things, to sinking or constant real wages and decreased population growth. Hennes & Mauritz has tried to adjust to this new development by internationalization and diversification. The English market was penetrated in 1977, Switzerland in 1978 and Germany in 1980.

The diversification has mainly taken place inside Sweden, partly by buying up competitors in slightly different market segments, partly by investments in perfumes, make up, mail order etc.

Hennes & Mauritz was listed on the Stockholm stock exchange in 1974 but is still controlled by the founder's family.

Ikea

Ikea, the world's largest furniture store chain, was founded in 1943 as a mail order company. In 1950 the first furniture was included in the product range. Low prices were the company's basic strategy.

In 1958 the first store house was established, and contrary to all conventional wisdom it was situated far away from any larger city. The store house became a tremendous success. Another innovation was the fact that the customer himself fetched the unpacked prefabricated furniture, transported it home and assembled it.

The real break through came in the mid 1960s with the opening of the store house outside Stockholm and with the establishment of stores in Denmark and Norway in 1963 and 1975. In 1973 the first apartment store outside Scandinavia was opened in Switzerland; in 1985 the number of apartment stores in total were ca 70 in 20 different countries.

Ikea's strategy can be summarized as follows:

- low prices thanks to large series and low storage rents, transportation and labor costs,
- high flexibility, no own production capacity,
- efficient control of suppliers with regard to design, technical specifications, machines etc.,
- high internationalization,
- a very special corporate culture trying to maintain entrepreneurship and fight inflexibility within the organization.

Although Ikea is the world's largest furniture chain, there is still an enormous growth potential. There are some more markets in Europe to cover, i.e. the United Kingdom and Finland, and even in Sweden the market share is not higher than 20 % – in most other markets considerably lower.

Ikea is still wholly owned by the entrepreneur – Ingvar Kamprad – or by trusts dominated by him.

IKO Kabel

IKO Kabel was founded by Karl Ohlsson in 1947 as a producer of plastic isolated electric cables. The company was purchased by ITT in the middle of the 1960s, but the company has maintained its own profile and its independence, probably due to its fine record of high profits. IKO Kabel is mainly a domestic (or Scandinavian) supplier.

During 1983 all of ITT's units in Sweden except the Flygt group were transformed into subsidiaries of IKO Kabel. It remains to be seen if this will be successful strategy. The total IKO-group had a turnover of 1.4 billion SEK and 1 600 employees in 1984.

The market for cables is, to a large extent, depending on the volume of construction and on the use of electric energy. The market is in most senses mature. For some areas, notably telecommunications, a change toward fiberoptical cables is expected. IKO Kabel has therefore spent a lot of resources on developing these kinds of cables.

Carl Munters

Carl Munters was founded in 1955 by the inventor Carl Munters, as a development company. The development of the heating and moisture transmission technology was the company's first goal. The company was early internationalized and had in the beginning of the 70s two productions plants and four trading companies abroad. In 1973 the company was acquired by Incentive, a development company.

The rapid growth has continued during Incentive's ownership. Especially during the energy crises demand for Munters' products increased rapidly. In 1979 and 1980 Munters also made acquisitions abroad.

Today, products for dehumidification account for ca 40 % of turnover, products for freezingtowers for 20 % and refrigerator products for 10 %. The company also has a rapidly expanding leasing and sanitation business. 30 % of production is situated in Sweden, the rest abroad.

Tetra Pak[4]

Tetra Pak is one of the world's largest producers of packaging systems for milk and other liquids. The company was founded by Ruben Rausing in 1950. The company is still owned by the Rausing family.

The new revolutionizing concept behind Tetra Pak was to produce, fill and close the container in a continuous process, instead of first producing the container and then filling and closing it. The paper containers were cheaper and easier to transport than the glass bottles used until then. The sales growth potential was thus enormous.

The strategy behind the success has been:

- trying to reach a dominant market position. Today more than half of all milk in Western Europe is distributed in containers from Tetra Pak.
- selling the concept, the know-how. Tetra Pak covers the whole range from packing machines, packing material and service to educating the users. The machines are leased to the customers and Tetra Pak provides them with everything else needed. This gives the company a strong position on the market and possibilities to tie its customers very close to the company.
- internationalization. More than 90 % of total sales is generated abroad.
- large investments in R&D.

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[4]) Due to the facts that a) the company is family owned and not listed on the stock-exchange, b) the company in reality consists of a group of individual companies in different countries, connected by a very complicated juridical organization, there are no figures for the Swedish parts of the group for earlier years than 1976 and almost no figures for the group as a whole.

- concentration. All resources have been put in the development of the main idea. No diversifications have taken place. The company has tried not to bind resources in large production units, most of the inputs used are bought from other companies and just assembled at Tetra Pak.
- decentralization, but with efficient central monitoring and control.

The future growth and success of the company depends primarily on the expansion of non-European markets. Especially the LDC are very fast growing markets. Another potential market is USA, where Tetra Pak's marketshare is rather low, due to domestic competition.

6. Summary

The factors explaining the success of the 40 companies studied, broadly falls into one of four different categories; a) new products, b) new marketing strategies, c) dominating the industry and d) cost efficiency/more flexible production systems.

a) New products. The success of 19 of the companies can be attributed to the development of products new to the market. In Denmark Eskofot, Vestas, Radiometer and Coloplast; in Finland Kemppi, Makron, Mobira, Oras, Vaisala and Jaakko Pöyry; in Norway Simrad, Ekornes, Kverneland, Nyco and Mohn and in Sweden Gambro, Frigoscandia, Munters and Tetra Pak.

b) New marketing strategies. The success of 10 companies can primarily or to a large extent be explained by new marketing concepts. In Denmark System B8, In Wear and Flügger; in Finland Isku and Martela; in Norway Norsk Data and in Sweden Hemglass, Hennes & Mauritz, Ikea and Ellos.

c) Dominating the industry. Four firms have based their success on the domination strategy. In Norway Toro, Block Watne and Dyno and in Sweden Fermenta.

d) Cost efficiency/more flexible production systems. 7 firms have to a large extent based their expansion on a more cost efficient or more flexible production than other competitors. In Denmark Migatronic, Micro Matic and Egetaepper; in Finland Ensto and Larox; in Norway Ulstein and in Sweden IKO.

Thus, of the 40 companies studied, at least 33 have based their success on new ideas and products, i.e., on product and market knowledge. In the remaining cases, the competitiveness was based on process technology knowledge. This underlines the fact that the major innovations and successes mostly are generated from the market – rather than from the process – side. Market knowledge is one of the crucial factors for maintaining a fast growth in the future. Another important implication of this result is the fact that marketing, services and R&D probably will increase its share of total company employment. This will affect the companies' need for different labor categories, and – as a consequence – the total labor market as well. However, it must be remembered that we here only studied 40 companies and that pure luck in some cases has played an important role. It is therefore difficult to draw any definite conclusion regarding the business sector as a whole.

A crucial decision for many companies is how and when to broaden the financial base. A continued fast growth requires a large capital base, but this may mean that the entrepreneur looses control over the company if, for example, a substantial part of the shares must be sold. On the other hand, larger borrowing means increased rents and decreased solidity, and a decision not to grow so fast may also bring about a lot of negative consequences, i.e., a loss of initial advantages, decreased incentives for employees etc.

Of the companies studied, some, for example Frigoscandia (Sweden) and Simrad (Norway) have not – due to the fact that they have always formed a part of larger groups – had any major problems regarding the financial resources.

Others, for example Mohn and Ulstein (Norway); Ikea and Tetra Pak (Sweden); Egetaepper, In Wear and Vestas (Denmark) and most of the Finnish companies have succeded to grow very fast using only internally generated finance and bank borrowing. In these cases the companies have managed thanks to a high profitability and a strategy of tying as little resources as possible in capital intensive production plants.

In all other cases, the companies have been sold or listed on the stock exchange. A stock exchange introduction is one way of acquiring risk capital at a reasonable cost and still retain control of the company. This highlights the importance of a well working stock exchange for the rising of new risk capital.

Another important aspect of the stock exchange and capital market is that there must exist an efficient market for the valuation of companies. Of the companies studied, Nyco and Dyno (Norway) Gambro, Hemglass, IKO Kabel, and Carl Munters (Sweden), have all been acquired by larger business groups.[5]) Especially in Sweden, the acquisitions of smaller companies plays a major role in the transformation of larger companies and of the economy as a whole. An important, but still unanswered, question is why Sweden differs in this respect. From this aspect as well as from the entrepreneurs side, it is very important that there exists a reliable market value for small companies. This also gives rise to the question if incentives and possibilities in the Nordic countries are strong enough for making small business entrepreneurs continue on their own.

To summarize; this study has identified and discussed a couple of strategic factors explaining success, rapid growth and high profitability in newly established companies. As the sample chosen is small and the data collected limited it is not possible to draw any definite conclusions from the study, but rather to stress the need for more research regarding

- small business strategies, R&D and marketing
- the importance of education
- the importance of the financial markets
- the existence of entrepreneurial incentives.

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[5]) This can substitute for a listing on the stock exchange.

Financial Markets in the Nordic Countries

by Tore Horvei (IØI), Lars Jagrén (IUI),
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Financial Markets in the Nordic Countries

1. Introduction

1.1 The aim of the study

During the last 5–10 years the Nordic economies have been characterized by rapid change in the financial systems. This development has been especially typical of the short-term money markets, but also of the equity market whose role is becoming increasingly important.

The aim of this special study is to give an overview of these changes which of cource, are not a unique phenomenon. During the past 10–20 years major changes have taken place in banking and finance in all industrialized countries.

In the following we give a short introduction to the background of these financial market changes both on the international level and, more specifically, on the Nordic level. The first introductory section also includes descriptions of the financial system in each country. Thereafter, in section 2, we compare recent short-term money market developments in the Nordic countries. Section 3 reviews the bond markets and in section 4 the risk capital raising through the equity market is taken under review. Concluding remarks in section 5 deal with policy implications and implications for corporate finance.

1.2 Factors behind recent developments in the financial markets

There is no single driving force behind the international financial innovation process which has swept across a number of countries during recent years.[1]) Many interrelated factors have been at work. There are, however, similarities that also apply to the Nordic countries.

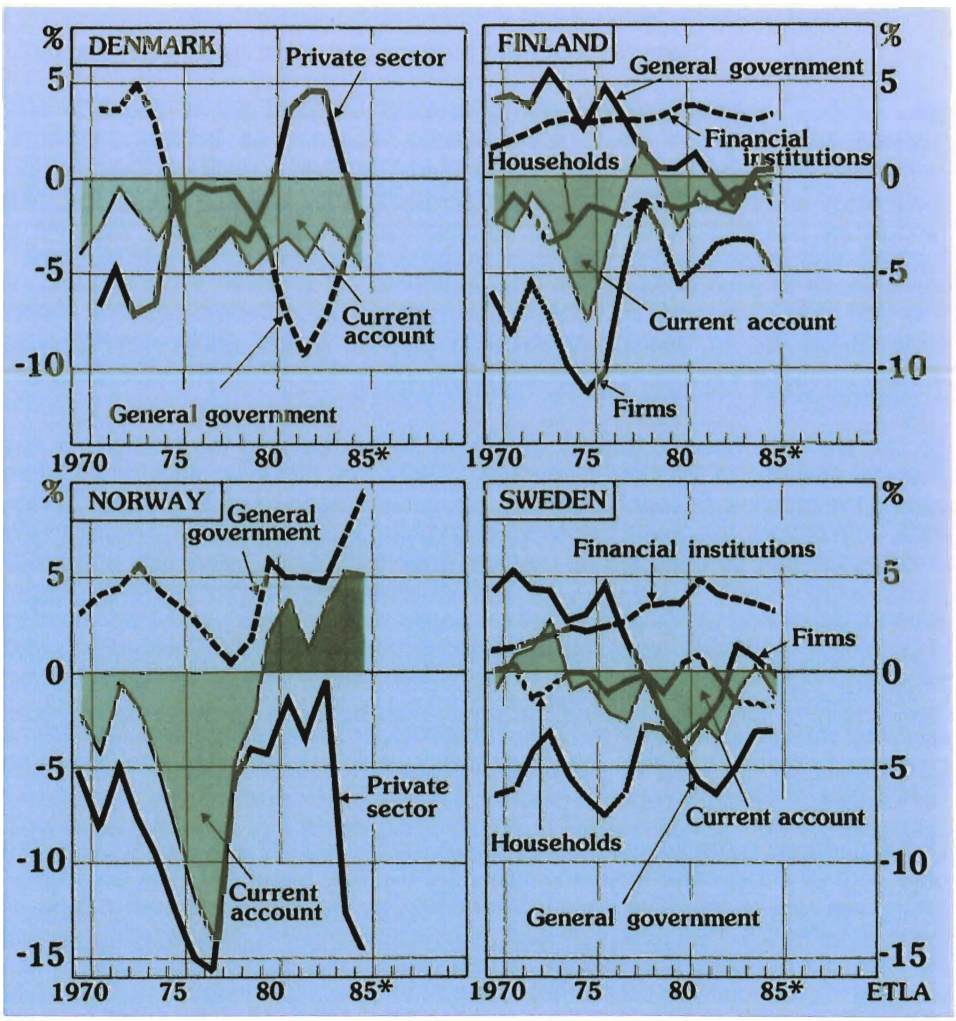
The mid-1970s crisis as a background

The development in the financial systems can be traced back to changes in the economic environment after the first oil crisis. The rise of inflation and its increased volatility, as well as the volatility of the exchange rates, created uncertainty. The economic growth in the industrialized countries slowed down. Another factor that altered the financial position of various sectors was the expansive fiscal policy that was maintained in many countries. Among the Nordic countries Denmark, Norway, and Sweden pursued such policies. Public sector deficits grew rapidly, and were not turned around until 1982 in Denmark and Sweden. In Norway the oil revenues had begun to balance the deficit from the late 1970s. In Finland fiscal policies were not so demand-oriented as in the neighbouring countries, and the deficit stayed at a lower level.

[1]) See e.g. "Financial innovation and monetary policy", Bank for International Settlements (1984).

The international financial system also changed markedly during the same period due to increased use of flexible exchange rates, and due to the expansion of the Euromarket. On the other hand, the growing internationalization of business and banking in the Nordic countries created a new demand for currency related services. The financial behaviour of firms and banks became more closely tied to what happened in the leading finance centers of the world. With the internationalization firms also learned how to better handle the risks attached to flexible exchange rates.

Figure 1 Net lending by sectors in the Nordic economies
Per cent of GDP



Source: National Accounts.

Among the Nordic countries Denmark has traditionally been most strongly integrated in the international economy, and has developed the most sophisticated financial system. During the last few years the Danish system of currency controls has been liberalized. It can now be regarded as one of the most liberal in the world. This relates to the close connections between monetary policy and exchange rate policy, and their influence on financial conditions of a country. The Danish governments have consistently tried to avoid devaluations in the 1980s, which traditionally have been used in all Nordic countries to solve the problems of foreign trade and current account imbalance. To keep the exchange rate stable, the domestic interest rate has largely been determined by foreign factors.

The international integration of Nordic financial markets can be regarded as the single most important factor when considering the recent financial market changes in the small Nordic economies. Without the growing internationalization of business and banking the demand for financial intermediation would probably have stayed at a too low level to create a basis for these changes. Larger amounts intermediated at lower profit margins imply increased efficiency.

New technology offers new possibilities

In the background of the financial market changes there is naturally also the new technology which provides much better possibilities for financial operations. This technology has totally changed the communication and information systems in banking and made the financial intermediation technically faster and cheaper.

Traditional credit rationing was no more succesful

So far, we have been looking at long-term factors causing the changes in the financial systems of the Nordic countries. There are, however, additional factors behind the process. Except for Norway, the general trend towards growing foreign debt, both private and public, caused a change in the economic policies, especially in countries that pursued strong demand-oriented policies. Monetary and credit policy targets became more focused on guaranteeing the financing of current account deficit and the stability of the exchange rate. Monetary and credit policies in all Nordic countries were tightened to reduce the growth of liquidity in the economy, which again except for Norway, was mainly due to permanent state budget deficits. Around 1979–1980 economic growth in all Nordic countries was relatively strong, but at the same time the inflation rate was rising. This also added pressure to maintain a tight monetary policy, which traditionally was based on direct regulations.

Due to changes in the financial environment, and especially due to changes in the behaviour of firms, credit rationing was not effective. Liquidity in the economies had grown very rapidly. The low interest rate policy that was carried out in three of these countries – Denmark excluded – by regulating the lending rate in credit markets, did not clear the markets. There was excess demand for loans, which was met in unregulated markets that emerged in Sweden, Norway, and Finland. (It is interesting to note that in the beginning of the 1970s "a grey credit market" existed, for a period also in Denmark).

These phenomena relate to "a law" implying that the rationing of a financial market is efficient only for as long as it takes the actors to learn how to get around the rules. This happens when the incentives to escape the rules are sufficiently strong. Thus, the regulative actions themselves induce to innovations which aim at getting around the rules. Generally, the process of liberalization of financial markets depends on the efficiency of the existing financial system. Mature conditions and competition like e.g. in the US financial market continuously produce sophisticated innovations, while concentrated oligopolistic and rationed financial systems, typical of the Nordic countries, are not conducive to innovations. Increased competition usually means that banks lose an inexpensive funding source.

The emergence of this grey market, as a parallel market to the rationed market, added pressure towards deregulation and liberalization in the early 80s. Recently the trend in Nordic authorities policies is a movement towards deregulation and liberalization of the rules concerning financial intermediation in domestic markets, as well as currency related services.

Changes have been most significant in the money market

The changes in the financial systems of the Nordic countries started in the short-term market as a natural consequence of the change in the financial behaviour of the firms. The tendency towards increased market oriented systems, also in household markets, is likely to become stronger.

The financial surplus of the household sector in the Nordic economies contributes in creating extra demand for securities, and the attractiveness of equities and bonds as a corporate funding source has increased, as the costs of debt financing have grown. Along with a growing international interest for the Nordic stock exchanges this has added pressure for further development of the equity markets.

1.3 Introduction to the financial systems in each country

1.3.1 Denmark – Are there limits to liberalization?

Although starting from a more mature stage of development of the financial markets than the other Nordic countries, the Danish markets have witnessed dramatic changes in the last decade. In Denmark (like in the other small and open Nordic economies) liberalizations have been intimately connected with the process of internationalization. Among the factors of particular significance for Denmark is the objective of stabilization of the exchange rate of the Danish krone. This objective lead to Danish participation in the exchange rate management system of the European Monetary System (the EMS was established in 1979), and to a series of domestic policy adjustments in the first half of the 1980s. Furthermore, the EEC membership has compelled Denmark to gradually open up the factor markets, i.e. including the financial markets.

Key features of the changes are:
- Deregulation of foreign exchange control and credit markets, resulting in internationalization.

- Integration of financial submarkets; i.e. traditional institutions move into activities of already existing institutions or into newly established activities and products.
- Liberalization increases competition in financial markets – leading, among other things, to institutional adjustments like mergers, exits and creation of new types of financial institutions (often rather specialized).
- Gradual elimination of most monetary policy instruments of quantitative regulation in favour of market-oriented instruments.

Institutions and markets

The financial sector in Denmark has traditionally distinguished itself from those of the other Nordic countries by being more market oriented, i.e. a sophisticated bond markets has existed for a long time and monetary policy has been market oriented. Quantitative restrictions have been used only to a limited extent.

Bond markets occupy the central position in the overall credit stock with outstanding debt amounting to 1–1.5 times GDP in the first half of the 1980s. In 1986, however, total bond credit stood at 2 times GDP, following the very rapid credit expansion associated with the economic upswing.

Traditionally, the bond market has been dominated by private institutions that issue bonds with security in real estate or other real assets. Mortgage institutions possess a monopoly in issuing bonds with security in real estate. There are two groups of mortgage institutions. Three "general" institutions extend loans primarily for residential construction, and two "specialized" institutions provide credit for the business sector. The regulations governing mortgage credit (ceilings on lending per property, restrictions on purposes etc.) are politically determined and often utilized as instruments of economic policy, as witnessed several times in 1985–86.

Since the mid-1970s, the capital markets have been increasingly dominated by government treasuries. In 1982 the share of government bonds in the net growth of bond debt reached 75 %, raising the share of government bonds in the total stock to 1/3. In the last couple of years the issuance of treasuries has been declining, due to the drastic reduction of public sector deficits.

Following the global trend, large Danish companies have increasingly invested in financial assets, and government notes have proven very attractive for companies' cash-flow management. Another important feature of the bond market is the large sales of krone-denominated treasuries abroad, which started in the mid-1970s and expanded rapidly since 1982, when the temporary suspension of sales from 1979 was lifted again. The large stock of bonds currently owned by foreigners (by the end of 1985 around 40 billion DKK) may be a potential threat to the policy of a stable exchange rate and low interest rates.

Equity markets have grown rapidly in the 1980s – both when measured by the amount of issues and by volume of trade. This development has generally been welcomed as a means of increasing "productive" investments and as a means of providing risk capital to the private sector. Smaller companies are increasingly getting access to risk capital, and investors have been ready to absorb new shares at high prices. In fact, share prices for small and new companies have tended to be

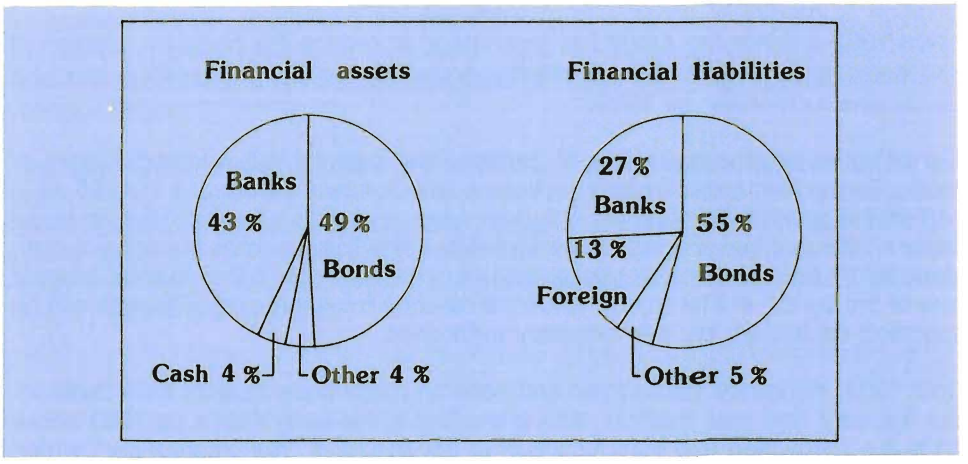
inflated due to a general excess demand for shares. Due to the liberalizations of residents' purchases of foreign shares in 1984, imports of shares have increased, which may reflect both a general domestic excess demand for shares and a weakening of confidence in the domestic market.

Accommodating the rapid growth of stock trading, a stock exchange reform is under way. The reform will provide for a decentralization of trade in that auctions at the stock exchange floor are substituted with OTC-trading. At the same time, the reform will bring the majority of all trading (about 90–95 %) that currently takes place outside the stock exchange into an official information system, since deals must be reported to the stock exchange. These changes are expected to bring the Danish markets closer to international markets. The reform will be fully implemented by mid-1987.

The *banking sector* in Denmark has traditionally been relatively insignificant compared to the situation in the other Nordic countries. In recent years total lending by foreign sources has reached approximately the same magnitude as total lending of the banking sector.

In the mid-1980s, the banking sector consisted of about 75 commercial banks and 150 savings banks with a network of about 3 600 branches. The banking sector exhibits a long-term trend towards concentration, and with growing competition in the sector, the number of mergers and exits is likely to increase in the coming years.[2] Foreign banks have been allowed to operate in Denmark since the early 1970s, and by the end of 1984 the total number of foreign banks with branches or representation offices was 8.

Figure 2 Financial assets and liabilities of households and firms at the end of 1984



Source: IFF.

[2]) Concentration is also motivated by returns to scale, see Erik Carstensen: Den fremtidige arbejdsdeling på penge- og kapitalmarkedet, Nationaløkonomisk Tidsskrift, no 1, 1986.

Taxation

Personal and corporate taxation have been very influential in shaping the financial markets in the Nordic countries. High tax rates, complex tax rules, differences in tax treatment of legal entitities and recurrent changes in tax rules provide incentive for financial services to reduce or circumvent tax payment (i.e. to so-called "tax-thinking").

An comparative overview of personal tax rules in the four Nordic countries is available in the appendix of this chapter.

Interest payments are deductible from taxable income (and interest earnings are taxable). This taxation principle has provided an incentive for borrowing. The political aim has been to aid households in aquiring private homes, and the corresponding cost may be identified as the low incentive for saving. Alternative taxation systems with less incentive for households to borrow, have been considered. In principle, such a tax system should motivate household savings and still provide easy access for corporate sector credit. However, these objectives are not easily met. Most importantly, it is administratively difficult to impose general disincentives for households' borrowing since the majority of the electorate owns private real estate financed by issuance of bonds through mortgage societies.

However, in June 1985, a substantial majority in the Folketing adopted a *major tax reform* to be implemented gradually from 1987 (certain parts of the reform are effective already from 1985). The reform will equalize and reduce the subsidy element inherent in the tax deductibility of interest payments. In the future the "tax value" of interest payments will be about 50–56 % for all income groups, i.e.irrespective of the marginal tax rate. Similarly, interest income will be taxed like other capital income (divdents, rental value etc.) at a flat rate of 50–56 %.

Another problem addressed by the tax reform is the *double taxation* of dividents. Currently, dividents are taxed both as corporate income (up from 40 to 50 % beginning in 1985 as a part of the tax reform) and as personal income. The double taxation is generally considered detrimental to "productive" investments, and since 1982 a minor tax credit has been used to reduce the personal taxation of dividents. According to the tax reform, however, the double taxation is to be eliminated completely by 1990.

Capital gains on stocks are free of taxation if the ownership has lasted 3 years or more. Concerning capital gains on bonds, taxation was introduced in 1985 as a part of the general tax reform. The new rules will reduce the incentive to issue papers with nominal interest rates that differ significantly from the market rate. Henceforth, tax freedom on capital gains are granted only if the nominal interest rate of the bonds at the time of issuance meets a minimum rate. This rate will be specified continually by the monetary authorities.

Until 1984, insurance companies and pension funds were exempt from taxation. But the very high real interest rates prevailing in the early 1980s (in 1982 about 10 % p.a.) provoked the introduction of to the so-called *"real-interest-tax"*, which ensures that yields of bonds and shares do not exceed 3.5 % p.a. in real terms. This tax was introduced to reduce the large capital accumulations in these financial institutions, primarily in order to prevent unproportionally large pension payments after the turn of the century. An additional motive behind this taxation

was the large public revenue to be tapped by the public sector. Extensions of this law may be introduced, since the 3.5 % real interest allowed may still be relatively high compared with the long-term growth potential of the economy. Perhaps even more important, however, are the distortions created by uneven taxation of alternative investments which has tended to favour "passive" and unproductive investments in real estate or bonds rather than in shares etc.

Finally, the tax reform will broaden the *tax base* to cover also foundations, societies, associations, mortgage institutions and other hitherto untaxed financial institutions.

Credit policy and public control

The first and primary policy objective of the monetary policy in Denmark has been the need to accommodate the persistant deficit on the current account of the balance of payments, i.e. to ensure the continued availability of foreign reserves. As a clear political choice, it was decided to provide the needed foreign reserves by ensuring a private capital import by keeping interest rates high.

Capital imports are, however, sensitive to the risk of exchange rate shifts, and significant interest rate differentials had to be observed to provide a risk premium. As the international interest level increased to unprecedented levels in the late 1970s, the Danish rates followed suit with a (growing) differential added to international rates. Together with a gradual liberalization of currency regulations during the 1960s and 1970s, this resulted in very high interest rates in Denmark, in contrast to the policy of low interest rates pursued in the other Nordic countries (c.f. real interest rates in Figure 10).

The high interest rates contributed to turning an international recession into a strong domestic investment down-turn in the second half of the 1970s and early 1980s, and the credit policy thus caused a relatively strong down-turn in Denmark.[3]) The investment crisis was accompanied by low and negative after-tax yields on real investments on the one hand and increasingly attractive financial investment opportunities on the other hand. Since the late 1970s, a number of taxation and credit measures have been taken to enhance real investments, but until the strong recovery of overall demand in 1983–84, these measures were of marginal effect.

The second important objective of the monetary policy was to accommodate the public sector deficits since 1975. In order to minimize the negative consequences on domestic interest rates, government treasuries were sold both on domestic and foreign markets, and papers were issued with a short-term maturity, partly in order to diversify the markets and to minimize the consequences for the existing markets of long-term maturity bonds.

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[3]) A discussion and comparison of Nordic countries is available in: Jespersen, Jesper: Sammenhængen mellem statens budgetunderskud og renteudviklingen i de nordiske lande, Nordisk Økonomisk Forskningsråd, Årbok 1983.

The third objective emanated directly from the complications caused by the two first policy objectives. Because international real rates of interest were already high, the continued need for capital import could no longer be met by providing the needed interest rate differential. The cost in terms of domestic recession were too high. In 1980–81 the Government embarked on a different policy, involving increased public sector borrowing in international markets which in principle should allow for a reduction of the interest rate differential. By 1982, however, this approach had not produced significant results.

But in late 1982 international interest rates fell sharply, and the Danish policy choices were considerably and unexpectedly simplified. During 1983–86, the fiscal deficit has been gradually eliminated, and despite continued high real interest rates the differential needed for stabilizing the currency reserves has not prevented an investment boom from materializing.

Instruments of monetary and credit policy in the early 1980s were geared to meet the needs created by the recession in the 1970s. One area of concern was the traditional choice between private or public capital imports when international real interest rates are high. The possibility of diversifying the term structure of interest to relieve long-term interest rates from the restriction of being the main instrument in controlling short-term international capital movements has often been addressed. Some progress has been made by the creation of large markets for short-term maturity papers but the long-term interest rate is still sensitive to fluctuations in the foreign currency reserve.

More generally, the instruments of credit and monetary policy have gradually been transformed to meet the demands of financial liberalization. Up till 1985, day-to-day regulation of bank liquidity was conducted primarily through a system of quantitative regulation of bank lending. The use of such instruments was, however, partly ineffective due to the emerging liberalizations and internationalization. Additional liquidity adjustments (primarily changes in the general level of interest etc.) were performed through central bank open market operations in bond markets.

In connection with the various capital market liberalizations during the 1980s it has proven difficult for the central bank to control the increases in bank lending. It was increasingly felt that the old control system was worn down by company borrowing abroad and by increased bank circumvention of the existing framework of bank lending control. This prompted the introduction in the summer of 1985 of two new systems for controlling overall liquidity and individual banks' lending:

- A more market oriented system of bank liquidity control was introduced, based on sales to banks of 3-months certificates of deposits. Money market interest rates are controlled by setting the yield of, and borrowing costs on these certificates.
- The ceiling of bank lending was replaced by a system of placement requirements related to increases in deposits, where interest payments by the central bank is set on a day-to-day basis.

Despite these changes, private sector borrowing for consumption is still difficult to restrict. One important reason is the easier access to foreign sources of credit – notably the so-called "finance-loans" (company borrowing abroad).

Due to the serious balance-of-payment problems, a certain measure of re-regulation has taken place in the bond markets. Mortgage credit regulations have been tightened (credit facilities withdrawn for some construction purposes and reduced for other etc.) and corporate sector access to foreign credit has been reduced marginally in 1986 by reimposed clauses of the use of "finance loans".

But the control attempts have not been successful, and at times the central bank has relied heavily on simply asking the banks to moderate credit expansion. The difficulties experienced in controlling credit is evident also in the austerity measures introduced during 1985–86. In particular, reduced availability of mortgage credit and a tightening of hire-purchase rules have been remarkable.

In compliance with both OECD and EEC agreements, it has been a policy objective in itself to integrate the Danish financial markets with international markets, in order to improve their overall functioning. Liberalizations of *international capital movements* have been particularly far-reaching during 1983–85. There are several reasons for this, but many of the restrictions had already become obsolete.

1983
- Residents allowed to buy foreign bonds quoted on stock exchanges and with initial maturity of no less than 2 years.
- Non-residents allowed to buy non-listed Danish shares.
- Finance loans to be taken up without any quantitative restrictions and control on use of funds.
- Higher ceilings for amounts involved in regulated transactions (e.g. direct investments) and easing of rules for intra-company loans.

1984
- Residents allowed to buy foreign shares listed on stock exchanges abroad.

1985
- Although non-listed foreign bonds and shares may be purchased only with the accept from the central bank, the administration of this is very lenient.
- Quantitative limits on a number of transactions raised. The minimal maturity for "finance-loans" reduced from 5 years to 1.

From the summer of 1985, only a few restrictions remain on international capital transactions of individuals and private non-financial businesses, and the remaining retrictions relate primarily to capital exports. The distinction between private and corporate credit has, however, been difficult to administer, and private consumption has benefited directly and indirectly (e.g. by large-scale relending of foreign loans through investment institutions etc.) from the easy access to "finance loans" without control on the usage. In March 1986 restrictions were reimposed on the use of "finance loans", but this move is not expected to be very effective in reducing credit available for private consumption.

Issues in the development of the financial sector

An important factor behind the surge in financial market activity has been the increased propensity of *households* to invest in financial assets. The growing interest in financial assets and portfolio management has been reflected first of all in the private sector investments in government teasuries as they emerged in the

second half of the 1970s. In the early 1980s, equity shares gained importance and attractiveness as objects of financial investment, and the very large demand caused share indices to rise. Also, domestic investors turned the excess demand towards foreign share markets, when such investments were allowed in the mid-1980s. The growing interest in portfolio management is also evident in the dramatic increase in the number of investment companies and societies. Generally, this behaviour of the private sector has been welcomed as rational and beneficial but there have been indications of an emerging "casino society" with wide-spread financial speculation based on borrowed funds.

Another issue in the development of the financial markets is the growing importance of *institutional investors*, represented primarily by insurance companies and pension funds with assets amounting to 145 billion DKK by the end of 1983. Additionally two large semi-public funds are important investors. Already in 1964 a compulsory pension scheme, the "Arbejdsmarkedets Tillægspension" (ATP) was established, and in 1979 the "Lønmodtagernes Dyrtidsfond" (LD) was created. Together the two funds had assets of about 46 billion DKK in late 1983.

According to present legislation, pension funds may invest up to 25 % of their capital in stocks, and by pooling resources through an investment company pension funds and insurance companies may acquire more than 50 % of a given company. The two semi-public funds have stricter placement rules. Only 20 % of assets may be invested in shares, and the two funds together may not own more than 20 % of a company. These limits may ease in the coming years. Changing the rules may be beneficial in that these investors may move funds from bonds to shares. Nevertheless, the risk aversion of these funds is likely to stay high, thus limiting investments to solid and already well situated business.

The semi-public funds are not different from ordinary pension funds in their objectives of high rates of return and long-term security. But in addition to that, the boards of governors consist of employee and public representatives (ILD) and employer and employee representatives (ATP). These may have additional objectives such as distributions or resources and employment etc. that may conflict with the pure pension maximizing objective.

Further development of the financial markets will occur with the spreading of *profit sharing* schemes in private enterprises. This is happening already on a decentralized level, but it may acquire significant proportions if introduced as a part of a pension reform (for blue-collar workers, primarily). These changes may considerably alter the present composition of supply and demand for long-term credit.

Some anxiety about policy implications

The *integration of financial submarkets* and the process of internationalization create an interconnected system of credit sources, resulting in increased availability of credit for almost any purpose. This poses a challenge to policy makers since traditional instruments become obsolete. Thus, the integration of markets has prompted a search for new instruments in the first half of the 1980s.

The increased interdependence of domestic and international financial markets, and the fundamental shift in the policy regime in 1982 (with the introduction of

stable exchange rates, liberalizations of capital transfers, and gradual reduction of interest rates) is likely to further reduce the autonomy of monetary policy by making monetary variables even more dependent on international markets than they are already.

Since 1982, there has been a shift away from the heavy reliance on monetary policy of the 1970s when fiscal policy was loose. The Danish currency has been kept relatively stable, and the declared policy aim of the Government has been to abstain from devaluations and continue to gradually force the rate of interest downwards. Instead, the burden of adjustment should be placed on tight fiscal and incomes policies. This policy has been relatively successful so far, but so have the conditions in terms of the international economic recovery.

If, in the coming years these policy objectives cannot be met with the chosen set-up of instruments, the close relationship between domestic and international financial markets may make it difficult to apply discretionary monetary policy in solving the fundamental economic problems. In conclusion, the changing features of the Danish financial markets have not yet been tested in more adverse economic settings than those prevailing during the first half of the 1980s.

1.3.2 Finland – Deregulation brings about further integration

Bank domination in financial intermediation is one of the main characteristics of the traditional Finnish financial system. Banks account for over half of total domestic financial sector credits to the public. This importance compared to the minor role of the securities' market is at least partly due to the tax exemption for households of interest on bank deposits and the generous tax provisions which the deductability of interest costs brings for both households and firms. Bank loans have been, and still are, an important source of finance for business investment as well as for household housing investments, and bank deposits are the predominant financial asset of the households. The banks have a central position in the intermediation of both short-term and long-term financing.

The banking sector consists of a few large national banks (six private commercial banks and the state-owned Postipankki), who have access to central bank borrowing, and over 600 local savings and cooperative banks. The local banks are linked to the national banking system via their own "central banks", which enjoy status as commercial banks. The number of bank branches in Finland is altogether over 3 500 (in addition there are about 3 200 post offices) which is very high, 0.7 per 1 000 inhabitants.

Since 1982, foreign banks have been allowed to establish in Finland. For the time being there are four foreign bank subsidiaries and two representative offices in Finland. Since the mid-1970s, the Finnish banks have been participating in international consortium banks and establishing subsidiaries and more recently, branches in financial centres abroad.

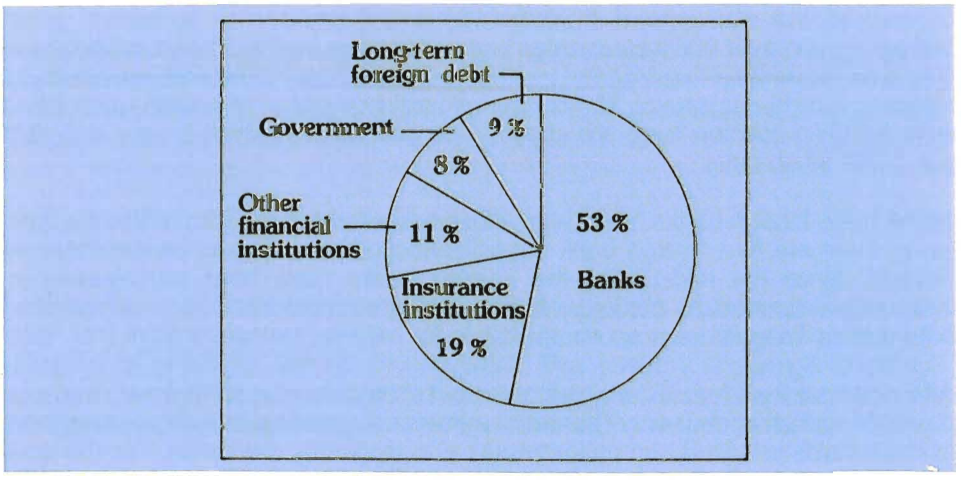
All Finnish banks offer similar types of deposits, on which the same interest rate is paid by a mutual agreement. This cartel agreement guarantees the tax-exemption to households provided that uniform rates are applied by the banks. For the time being, the agreement is valid until the end of 1988, but there is much pressure to modify the law which is a prerequisite for this agreement. The cartel is preventing

the competition between banks and the tax-exemption is widely regarded as a hindrance to the growth of the equity and bond markets. It is regarded very likely that the cartel will break by the end of 1980s.

The lending rate of banks has traditionally reflected the interest rate regulation of the Bank of Finland. The control of banks' average lending rate was, however, finally relaxed in August 1986. Due to the variable interest rate system, most deposit and loan rates are tied to the base rate of the Bank of Finland, a rate which has rarely been changed.

From 1962 on, after the creation of the compulsory employment pension system, the role of *insurance institutions and pension funds* in the financial intermediation has been increasing. Today their share of loans granted to the public is 20 %. Other financial institutions consist of *mortgage banks and development credit institutions* which fund their loans by issuing long-term bonds. To the same group belong also *financial companies* (the hire purcahse, credit card, factoring and leasing companies), which have expanded rapidly during last few years. The growth of the finance companies reflects, however, only partly an increased demand for the type of lending and services they provide. An at least equally important factor was the use of bank-owned finance companies as a means of circumventing interest rate regulation. This group of other financial institutions supply 15 % of the total domestic credits to the public. Also, the Bank of Finland grants some loans directly to firms. The share of the government lending, mainly for housing investments, is decreasing. Approximately ninety percent of total credits to the public is supplied by the financial institutions and the general government, direct long-term *foreign credits* making a remaining ten percent.

Figure 3 Outstanding credits to firms and households from various sources at the end of 1984



Source: ETLA, Credit Stock Statistics & Central Statistical Office.

The Finnish *bond market* is dominated by government long-term bonds. The rapid development of the bond market is mainly a result of an increase in the government bond issues. As mentioned above, they are tax free and with the high real interest rate prevailing during the last few years they have been quite profitable. Government and private sector bond rates and other issue terms are controlled by the authorities. Bond issuance permits are granted by the government. Debentures and other bonds, on the other hand, are only registered in the Bank of Finland. The government also grants tax-free status for bonds separately. In addition to the state, the mortgage banks which grant credits for the energy and other infrastructural investments, have also issued tax-free bonds. Companies have appeared only on the taxable bond market and their role has been minor.

With the adoption of and increase in property income deduction, in respect of taxable capital income, the demand for taxable securities has, however, grown. This is particularly true for corporate debentures. The growth of bond and debenture issues by industrial and financial companies was especially rapid in the first half of 1985, when foreign investors began to show interest for these loans due to their high and fixed interest rates. The foreign portfolio investment into these securities was quite large until the Bank of Finland put a ban on this type of capital imports at the end of June 1985. At present this prohibition is still in force.

The maturities of Finnish bonds and debentures are usually 5–10 years. Until late 1970s, before the expansion of the bond market, there did not exist any secondary market. Thereafter the development of such a market has been rapid, and, as an example, the share of bonds and debentures of the total turnover of the Helsinki Stock Exchange is very high (two thirds in 1984 and three quarters in 1985).

So far the *equity market* is rather undeveloped. The market value of the 50 companies quoted on The Helsinki Stock Exchange, the only one in the country, is 31.7 bill. FIM (as of end 1985). In addition to these firms, shares of about 35–40 firms are quoted on a so called brokers' list, the number of the firms on the OTC-list being so far (autumn 1986) only four. There are 18 brokers - 8 banks and 10 stock broker firms – participating at the Stock Exchange. The rapid growth of the stock exchange turnover in the 1980s – in 1985 it was over 17-fold compared to the turnover in 1980 – is mainly due to the increased markets for government bonds and corporate debentures, as mentioned above.

Taxation

Taxation has greatly influenced the structure of the Finnish financial system. Interest payments are deductable in taxable income for both households and corporations. Bank deposits and the interests on them are not as a rule taxable for households. Also government bonds, together with some other bonds (to a minor extent) are not taxed. Dividends are taxed both as a corporate income and as personal income, although some deductions can be made in personal taxation. Capital gains on financial assets are tax-free in general if the securities are held for more than five years.[4]) Against this background it is easy to understand that the markets for shares and company bonds play only a minor role in the Finnish

[4]) For further details see appendix.

financial system. The prevailing high real rate of interest and the increased need for risk financing, due to changes in the structure of investment, e.g. towards increasing intangible capital spending, add pressure to develop the securities market. Accordingly, taxation is being reconsidered. It is most likely that these reforms, if realized, will make the development of the securities market more favourable. In 1987 the corporate income tax will be somewhat reduced. We can also mention a proposed law which would give more easy access for the investment funds activities. Increasing financial wealth in the household sector could also in this way be diverted to risk bearing investments.

Policy targets and public control

The system of credit rationing is today giving way to more market-oriented policy measures. Until the mid- or late-1970s, the primary target of the monetary and exchange rate policy was to support investments and the rapid growth of industrial production. This was pursued by keeping the interest rate level low through credit rationing and by directing capital import to investments which were regarded as growth-supporting. Chronic excess demand for credit until recently were the most eminent features of the financial market.

The main instrument of traditional monetary policy was the regulation of central bank borrowing of commercial banks. By raising the cost of this borrowing, which until 1975 (the foundation of a call money market) was regulated in the form of quotas for individual commercial banks, the central bank could influence the profitability of the banks and so their willingness to grant loans. To maintain the banks' central bank borrowing high enough for policy purposes, reserve requirements were introduced in 1979. The efficiency of this kind of policy very much depends on currency regulations. Until the early 1980s the control was successful in quaranteeing a relatively autonomous monetary system.

In the early 1980s the monetary and exchange rate policy targets were reconsidered to better fit in the changing economic and institutional environment. Policy was targeted to avoid the devaluations that traditionally were used to speed up exports when the inflation had undermined the competitiveness of export industries. This meant a tighter monetary policy stance in general.

Since then, with the broadening of the money market, the interventions in the call money market as well as in the foreign exchange forward market have become major instruments of the monetary policy. The Bank of Finland's call money rate, which from 1984 on is the same for all banks, to a large extent determines all short-term rates, and has a significant effect on the formation of other rates of interest, especially after the abolishing of the ceiling for interest rate on bank loans in the beginning of 1986, and the final abondoning of the control of the banks' average lending rates in August 1986.[1]) The Bank of Finland's interventions in the foreign exchange forward market had a significant impact on the liquidity in the economy in 1984.

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[1]) Late 1986 the central bank allowed banks to convert their day-to-day borrowing to three month negotiable loans. Accordingly, the three month rate is replacing the role of the call money rate.

At present the traditional way of conducting monetary policy through rationing has given way to an interest rate based mechanism; the effects of the monetary policy on the real economy are transmitted through changes in interest rates rather than through changes in the degree of credit rationing. Accordingly the interest rate has risen, partly due to the conscious policy to lower inflation, and more recently – from summer 1986 – to ensure a sufficient level of foreign reserves. This relates partly to the increased international integration of Finnish financial markets, and thus a diminished monetary autonomy.

Foreign exchange policy

As mentioned before, the goal of the exchange rate policy has been set firmly to avoid devaluations. This really means *pursuing a policy of a fixed exchange rate* with respect to an average exchange rate between the FIM and other currencies. The target has been to keep the currency index set by the Bank of Finland unchanged, although the exchange rate relationships between individual currencies change continuously.

This has proved to be no easy task as the experiences of the summer 1986 show. The Bank of Finland has been forced to defend the FIM against speculative attacks by raising quite steeply the call money rate, first in May and then again in August. In May the Bank of Finland also devaluated the FIM about 2 %, which it could do within the normal limits (4.5 %) given to the currency index. However, the fixed exchange rate policy conducted by the Bank of Finland is given a large priority in the economy, and the Government has declared its support to it. In this connection an institutional fact deserves mentioning: The Bank of Finland decides the value of the currency index within the limits mentioned above. Major revisions can only be carried out by the Government, who decides the limits of the currency index on the proposition made by the Bank supervisors delegated by the Parliament.

Capital control regulations

The control of capital movement has been slightly liberalized. The new law defining the framework for foreign exchange regulations in the beginning of 1986 did not bring about any major changes: As a rule capital flows between Finland and foreign countries are regulated by the Bank of Finland and are to a large extent subject to the Bank of Finland's approval. Current foreign exchange transactions, i.e. short-term capital flows associated with foreign trade, are exempt from regulations, whereas long-term loans raised abroad or investments abroad require the Bank of Finland's approval.

The guidelines of the currency rules have, however, been recently liberalized, e.g.:
- The households can to a minor extent invest in foreign bonds and shares or deposit funds with the foreign banks.
- As from August 1986 the long-term foreign borrowing (maturities over 5 years) of the manufacturing firms and the shipyards were released from the control of the Bank of Finland, and banks were given right to intermediate these funds.

The Bank of Finland has declared its purpose to continue favouring cautious liberalizations of the capital movements.

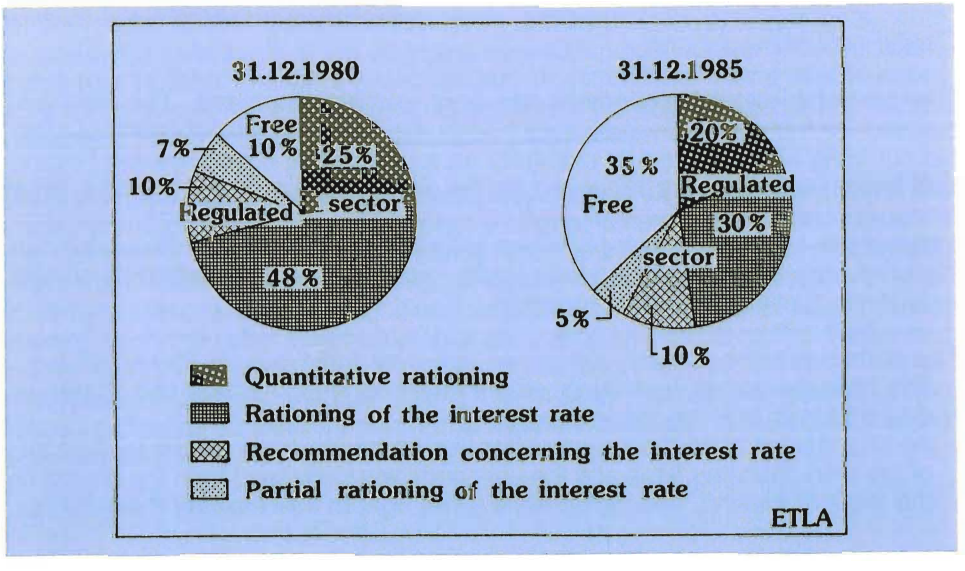
Future trends – Cautious deregulation and liberalization likely to continue

The Finnish financial system has undergone a number of changes during the last few years. The role of credit rationing has diminished rapidly, and the traditional view of the Finnish financial markets as undeveloped, bank-dominated and strongly regulated markets is rapidly changing in the 1980s.

Key features of changes are:
- The emergence of an unregulated short-term money market and the closer integration of the whole financial system.
- The international integration of the Finnish financial system as a result of increased internationalization of banking and business, and cautious liberalization of capital movements.
- Changes in the monetary policy targets and instrument towards utilizing more market-oriented measures.
- Changes in the monetary policy instruments towards utilizing more market oriented measures and the implied change in the transmission mechanism.

The properly functioning Finnish *money market*, which gradually started as a "grey market" between firms in the 1980s, is still in the intermediate phase. So far, the amount of securities handled in the short-term market – certificates of deposits issued by banks, government short-term loan bills and the commercial papers – is too small to create a basis for a functioning secondary market. The short-term money market plays, however, an important role in the financial intermediation as a whole. The short-term interest rate is increasingly influencing bank interest rates

Figure 4 Sources of finance of firms and households from regulated and non-regulated sectors of the financial market, %-shares



Source: ETLA, Data from Central Statistical Office – figures are rough estimates.

on all new loans. The final abandoning in August 1986 of the control of the average lending rate of the banks, removed the corner stone of the Finnish financial system.

The increasing competition among the banks is also reflected in the lending policies of other financial institutions, the activities of which are also slightly deregulated; e.g. in spring 1986 the Bank of Finland stopped giving recommendations concerning the lending rates of the insurance companies. So, the regulated and unregulated sectors of the financial market, which are presented in the adjoining chart, cannot be as easily defined as before.

Although the regulation has been dismantled as far as banks' lending rates of interest are concerned, the fact that bank deposits continue to be exempted from taxation will keep deposit rates largely subject to the cartel arrangement between banks. Of all bank deposits, 90 % is under the cartel agreement, and of all the time deposits only 1–2 % are outside this agreement (as of the end of 1985). The tax law, which is a prerequisite for the agreement, is valid at least until the end of 1988.

In general, the increased effectiveness of the financial intermediation has, ceteris paribus, expansive impacts on the economy. This is because, with a given monetary policy stance the credit terms get better for investors in real capital. The financial market changes have, so far, resulted in higher average financing costs for the Finnish corporations. But, on the other hand, the credit availability has improved.

Leaving aside the present situation, where the real rate of interest is generally regarded to be too high (7–8 % for new loans, in Autumn 1986), there is agreement that a positive and stable real interest rate will improve the effectiveness and profitability of investments in the long run. This is especially true when keeping in mind the indebtedness of Finnish corporations which is high in international comparision. Improving this situation, among other things, adds pressure to further develope the direct financing of the corporations in the form of both bonds and debentures, and shares. The taxation of interest payments and dividends, in contrast to the tax exemption of bank deposits and government bonds, is widely regarded as the most important reason for the rather undeveloped corporate *bond market* as well as the narrow *equity market*. There is, however, much pressure to amend the law, mentioned above, to imply a more equal tax treatment of the financial assets of households.

International integration and increased foreign capital movements affect the autonomy of the financial system and monetary policy. Also in Finland the short-term capital flows – which in practice are free – have been quite large. Although speculative capital flows cause disruptions, it is believed that with a better functioning domestic money market the authorities would have more flexibility to take counter-measures, and the trend towards cautious liberalizations of capital movements will continue.

1.3.3 Norway – Will market-orientation and deregulation proceed?

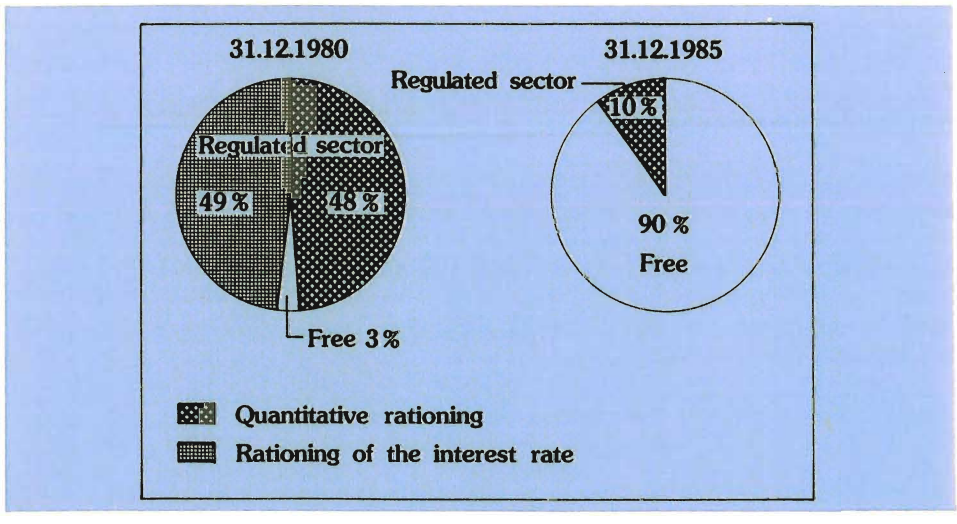
The general trend in the Norwegian financial market in the 1980s has been deregulation and liberalization. This goes for money markets, as well as capital and equity markets. Government policy is today based on more market oriented behaviour than before. This may be seen from the following figure showing the development in sources of finance for enterprises and households from regulated and non-regulated sectors of the financial market.

Institutions and markets

The *banking sector* dominates the Norwegian financial system to a large extent. Banks lend money to both households, the corporate sector and municipalities. In the last 10 years, banks have, on the average, supplied approx. 70 % of all domestic credit. However, inside the banking sector we have seen considerable changes since the late 1970s. The sector consists of private banks (commercial, savings and foreign banks (since 1985)), and state banks.

In 1979 the state banks were supplying almost 50 % of all domestic credit. Today their share of the market is reduced to under 10 %. The private banks have, on the other hand, increased their share of the market from 25–30 % to more than 60 % last year (sharp increase since 1983 and particularly for the commercial banks). So far, we have seen a quite distinct tendency to concentration in the private part of the banking sector in the 1970s and the 1980s.

Figure 5 Sources of finance of firms and households from regulated and non-regulated sectors of the financial market, %-shares



Source: Bank of Norway and OECD Economic Survey.

Since January 1985, foreign commercial banks have been allowed to conduct banking services in Norway on an ordinary basis. Seven banks have established in Norway. Due to various government regulations, the volume of their business is very limited so far.

The Norwegian *bond market* comprises of government bonds and bonds issued by municipalities, state banks, the corporate sector and various loan associations. Bond market institutions in Norway are not lending money to the household sector as in Denmark and Sweden. Historically, up to 1980 the bond market in Norway was heavily regulated, both on the supply (issuance regulations) and the demand side (allocations of quotas through the Credit Budget) and also regarding the terms associated to the securities.

Because of government regulations in the 1970s, which resulted in lower bond yields than market conditions should imply, the bond market's share of domestic credit supply decreased to some 6–10 % in the late 1970s. The lifting of issuance regulations in 1980 gave a real boost to bond issuing in the following years, but from late 1982 new regulations were introduced. These lasted to autumn 1985. In recent years the bond market has accounted for 10–15 % of domestic credit supply.

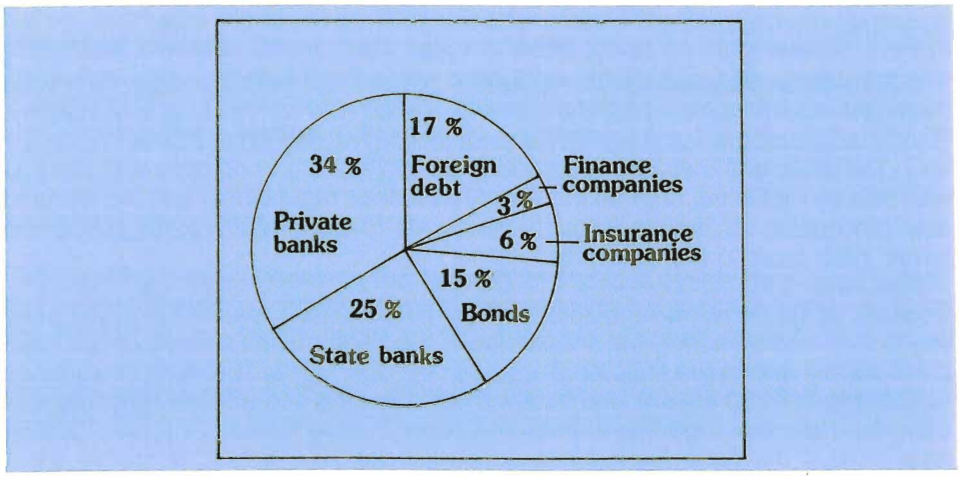
Other financial market institutions which are lending money to households and firms, are *insurance companies (including various pension funds) and finance companies*. These have had quite small and rather stable market shares in the past 10 years. This is mostly due to government regulations concerning lending volume and interest rate on loans. Today insurance and finance companies have a 10 % share of domestic credit supply.

Since 1982, the *equity market* in Norway has become more important in the credit supply. The market share has increased from some 2–3 % to 6–7 % in 1985. The vitalization of the equity market has brought more private risk capital to Norwegian companies and may be regarded as a result of the efforts and ambitions to strengthen the equity base of the Norwegian corporate sector. This is highly required when the ambition is to compete for new markets and in order to face increased competition on existing ones.

Foreign sources contribute to a considerable degree to the total credit stock available for domestic sectors. In 1984 the net foreign sources accounted for 16 % of the total credit stock. The figure has diminished considerably in the 80s from a maximum in 1978 (end of the period of oil-related borrowing). Today almost all Norwegian foreign borrowing is related to actors in the private sector of the economy, mainly financial institutions, oil-related industry and shipping.

In the period with credit rationing, an unregulated credit market, the so-called *grey market*, evolved in Norway like in the other Nordic countries. The outstanding volume of grey market loans is considerable (some NOK 27.5 bill. by end of 1985), accounting for as much as 10 % of outstanding loans from banks. As a result of the more market oriented credit policy and a less regulated interest rate, the terms on grey market loans (that is loans where neither lender nor borrower is a finance institution) are now more in accordance with the ordinary credit market. The fast increase in grey market loans also seems to have slowed down.

Figure 6 Outstanding credits to firms and households from various sources at the end of 1984



Source: NOU 1986:5 and Credit Market Statistics.

Credit policy and public control

The main objective of Norwegian policy regarding money and credit, has for a long time been to shelter the domestic money and credit supply against international disturbances. However, this is no easy task considering the fact that the Norwegian economy to a large extent depends on foreign trade in goods and services (most evident in shipping, the petroleum sector and the process industry, and with regard to import of consumer goods). In the 1980s we have also seen a growing internationalization of the Norwegian financial system, a process lead by Norwegian commercial banks following and guiding important customers out on the international market scene.

Important policy instruments have been regulation of credit supply and interest rates, exchange rate policy and capital controls.

Up to the end of the 1970s the Norwegian credit market and the credit policy was characterized by severe regulations both regarding volume of lending from different financial institutions and the interest rate on loans and credits. The result of this was a very segmented and complex credit market where the *low-interest rate policy and credit rationing* became genuine features.

However, over the time period 1979–83 have been given three important recommendations from various committees regarding Norwegian credit policy; one concerning problems with the structure and the control of the credit market (1979), one about the interest rate policy (1980) and one dealing with objectives and means in the credit policy (1983). All three concluded with the *need for a more liberalized credit market and a more market-oriented credit policy.* Even though it took some time from the committees finished their work to any changes took place,

it is obvious that their recommendations have had considerable influence on the deregulation and liberalization we have seen in the Norwegian financial system in the 1980s. This process has increased in pace the last three years, and by the end of 1985 almost no sectors, apart from the State Banks of course, are left with heavy Government regulations.

The most prominent changes in the Norwegian credit policy since 1980 are:

- Reduced influence for the State Banks
- A less segmented credit market.
- Policy objectives more related to total domestic liquidity and money supply than to credit supply from each market sector.
- A more flexible interest rate policy where the system of interest rate declarations is replaced with a surveillance system where the Bank of Norway is to use market operation tools like certificates and government bonds to control the money and credit supply.

Some credit policy elements still remain little market oriented. Most important are the primary and supplementary reserve regulations on private banks.

In the process towards a more market-oriented credit policy we have experienced some undesirable effects. The process of market deregulation so far has been characterized by a step-by-step reduction of the credit rationing. The result is a credit expansion considerably overshooting official targets bacause of the unwillingsness to let the interest rate rise enough for a market equilibrium. However, this is also due to expansive effects of the fiscal policy with an increasing deficit on government budgets when petroleum is excluded.

After the abolishing of the interest rate declaration in September 1985 and Bank of Norway raising interest rates on government bonds and certificates, the interest rate level has increased somewhat. Still, this does not seem to be enough to reach equilibrium. This is mainly due to persistent interest rate differentials between Norway and other countries, capital movements and features of the Norwegian tax system. The real after-tax interest rate on borrowing is quite low compared with the international situation.

Foreign exchange regulations and capital controls

The aim of foreign exchange regulations and capital controls has been to ensure sufficient reserves to finance imports of indispensable items in case of a sharp drop in export revenues. The growing oil-revenue from the late 70s and the emergence of more developed and less restricted international financial markets, has reduced the need for capital controls for balance of payments reasons.

Today foreign exchange regulations and capital control are *aimed at improving the possibilities for being able to conduct an autonomous monetary and credit policy* in Norway. If regulations contribute to a reduction in foreign capital movements, this could make domestic policy more effective.

Trade-related capital transactions have been freed from control as the Norwegian economy has become more open. Other capital transactions have also been deregulated, though slowly, in accordance with the requirements by the IMF and the OECD's Code for the Liberalization of Capital Movements.

Direct investment has been subject to authorisation, but since 1979 virtually no application for outward investment has been refused. The currency licence has been granted automatically to foreign direct investment into Norway provided that it conformed with domestic legal requirements, and in mid-1984 the currency licence requirement was dropped.

Purchases of foreign securities by residents have been under strict regulation. The controls were loosened in June 1984 for shares and in January 1985 for bonds. The purchase of Norwegian shares by non-residents has been progressively liberalized since 1973. In contrast to these developments, there has been no clear trend towards liberalization of long-term borrowing from abroad. Exeptions are financing of investments in the petroleum and shipping sectors. Because of the large financial needs of these sectors, it has always been a pronounced policy to have these financed abroad.[5])

Present foreign exchange regulations and capital controls seem to function as intended with regard to the long-term capital movements. This is indicated by higher yields on domestic bonds than Euro-NOK bonds. It is more *difficult to control short-term capital movements.* This is due to quite large interest rate differentials between Norway and most other countries where rates are considerably lower. This attract foreign capital inflow to Norway.

Foreign capital is mostly channelled through the Norwegian foreign exchange forward market. The existence of this market implies that foreign investors may place claims in NOK at a high interest rate (by buying NOK forward) in order to make a profit on the interest rate differential between the Norwegian financial market and international markets. Such "speculation" is difficult to control, but affects the Norwegian money market and the liquidity supply.

Taxation

In Norway there is unlimited tax deductibility of interest payments by households. Combined with relatively high marginal tax rates this renders the real after-tax interest rate close to zero. This strenghtens the *demand for credits by households in general.* With credit quite easily availible from banks lately, it is reason to believe that households may have blown up their financial asset and debt structure by making financial investments with borrowed funds in order to obtain an after-tax profit.

A tax reform (based on the "Tax Commision Report") will most likely be implemented in Norway. This is, however, not a sudden change, but a more gradually adjustment over time. Personal income is to a larger degree to be taxed at a gross basis, i.e. before various deductions. This will make it less favourable for the household sector to borrow. We may also see that only real interest payments are deductible.

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[5]) This does not apply to Statoil, which in periods has been instructed to finance investments by issuing bonds in the Norwegian market.

Today, yields on *various financial assets are taxed differently.* Interest payment on bank deposits and bonds is taxed at the same rates as ordinary wage income. Dividends on shares are more favorably taxed. Capital gains on shares are taxed favorably and according to how long the assets have been owned. Losses are tax deductible only in respect to capital gains. Capital gains on bonds are free of tax. The same goes for capital gains on life insurance saving, but here changes may occur pretty soon. Household saving in banks and shares (through approved equity funds) give tax reductions within certain limits.

Traditionally it was more favorable for the corporate sector to finance investments by loan capital than by equity because interest payments are tax deductible while dividens to share holders are payed out of the after tax profit. The low interest rate policy also favoured loan capital at the expence of equity financing. Various tax reliefs are, however, introduced in the 1980s which have made *equity financing more competitive*. Financial investments by actors in the corporate sector are in general taxed as ordinary corporate income.

Present financial market status and the outlook for the years to come

In some areas the process of deregulation and liberalization may have been too fast. We should therefore expect reintroduction of regulatory measures in financial markets for some time. The current capital market development can be seen as an example of such reactions.

The *money market* has developed from being a strictly bank dominated market into a market with a wide range of participants. The connection between the ordinary money market and the grey market is more evident. Today the corporate sector is placing surplus funds in the short-term money market as part of their daily operations. This development has obviously increased the importance of the money market in the Norwegian economy.

From 1985 certificates has become an important part of the money market. With the introduction of certificates as part of the Norwegian money market, the authorities intend to involve the public more directly in the Norwegian money market. This is done in order to increase control with the liquidity supply, and thereby making the monetary and credit policy more effective.

The Norwegian certificate market has had a modest start. Although total issues of certificates amounted to as much as 41.5 bill. NOK in 1985 (of which 32.3 bill. NOK was in treasury certificates), the market turnover in the secondary market has been low. Only finance companies and a few larger Norwegian corporations seem to have adopted this new intrument as an important source of funding so far.

The main buyer of certificates is Bank of Norway together with private banks in certain periods. The modest turnover in certificates is due to a very tight liquidity in the financial market at present. The banks have little ample funds for placing in certificates, and funding is cheaper by using the market for deposit on special terms. Despite these liquidity problems in the money market, the Bank of Norway intends to develop the certificate market in a way which makes it an effective tool to control liquidity in the banking sector.

The *bond market* has also been liberalized in the 1980's. The obligation of banks and insurance companies to hold a certain proportion of their capital in bonds was entirely abolished during 1985. Issuance regulations are also liberalized, but still some sectors are not allowed unrestricted access to the market. This goes for foreigners, households and also municipalities, as well as banks, finance companies and loan associations engaged in the housing sector. The process of deregulation has resulted in a considerable increase in turnover in bonds quoted at the Oslo Stock Exchange.

Not only banks and insurance companies, but also other financial institutions, the corporate sector and to some degree households have become important investors in bonds. This is mainly due to increasing yields on financial investments compared to real investments and to favourable taxation of capital gains on bond investments.

Bank of Norway has also been an important actor in the revitalization of the Norwegian bond market. Today the bank is active in the secondary market as a market maker in selected series of government bonds and by market operations. The objective is to influence liquidity supply and long-term interest rate development through participation in the bond market.

From 1982 to the beginning of 1986 the development of the Norwegian *equity market* and the Oslo Stock Exchange has been very similar to that of the other Nordic countries. Both turnover, market value of shares, the number of listed companies and the amount of new equity capital raised on the Stock Exchange increased considerably. This was due to government incentives, entry of foreign investors in the Norwegian equity market, the need for a strengthening of the equity base of Norwegian companies, and to an undervaluation of the companies listed on the Stock Exchange.

Since the beginning of 1986 the development in Norway has been somewhat different from that of most other countries. The sharp fall in the oil price, uncertainty with regard to the foreign exchange policy, decreasing competitiveness of Norwegian industries and the current account turning into a deficit, are all factors which have affected the equity market in a negative way. The Stock Exchange turnover has come down somewhat, the market value of shares in companies listed on the Stock Exchange is reduced, and the amount of new equity capital raised by Stock Exchange companies are lower than in recent years. Foreign investors also seem to be more negative to the Norwegian market than to equity markets in other European countries for the time being.

The future of the Norwegian equity market seems to a large extent to depend on the future oil price development, as this is a crucial factor for the corporate sector development in a short and medium term perspective.

With a more flexible Norwegian interest rate policy and the use of open market operations in certificates and government bonds, a more interrelated money and capital market is emerging. This process may be strengthened by a planned introduction of a new range of certificates with maturity ut to three years. The use of convertible bonds and bonds with warrants to buy shares at a predetermined price, are other examples of closer links between financial submarkets. Corporate finance activities in general are becoming an important function in the financial markets.

Generally speaking, it seems right to say that the whole process of financial market deregulation and increasing competition is leading to a more integrated financial system in Norway. An implication of this development is the need for increased financial know-how and competence, both in the corporate sector, in the financial institutions and in government bodies.

1.3.4 Sweden – The largest financial system, but still in the melting pot

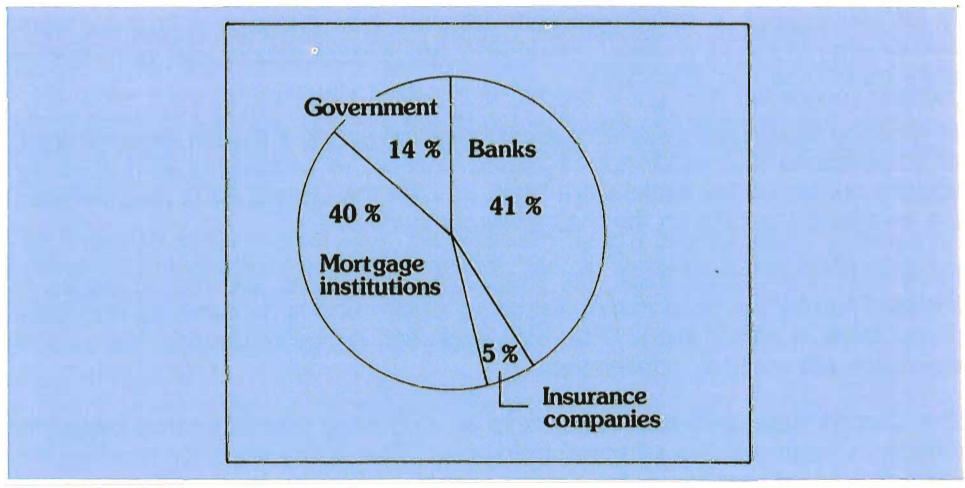
Institutions

The credit market institutions in Sweden can be grouped into *two main categories*. On the one hand are the *banking institutions*, dominating the money and short term credit markets, whose activities are based mainly on deposits from the public and whose credits are principally short-term. On the other hand are the *long-term capital market institutions*, whose lending is financed either by public or private insurance savings or by borrowed funds, e.g. through bond issues.

Besides the Central Bank there are three types of banks: commercial banks, savings banks and co-operative banks, accounting for 62, 30 and 8 per cent respectively of total bank deposits. The total number of commercial banks is 14, of savings-banks ca. 150 and of co-operative banks ca. 390 local banks organized in 12 regional banks. In 1986 foreign banks were allowed to establish subsidiaries in Sweden.

On the credit market an important role is played by the National Pension Insurance Fund and a few dominant insurance companies. Other capital market institutions are the state-owned Swedish Investment Bank, the mortgage institutions for housing and shipping and some specialized credit institutions for export credits and long-term credits to manufacturing industry, farmers and local authorities.

Figure 7 Outstanding credits to firms and households from various sources at the end of 1984



Source: IUI and Financial Market Statistics.

These institutions act as financial intermediaries, i.e. they procure capital by borrowing on the long-term market.

The stock market in Sweden is dominated by the Stockholm Stock Exchange, the only one in Sweden. The total number or registered stock brokers are 28, 14 banks and 14 stock broker firms. Investments in the Swedish stock market are to an increasing extent dominated by large institutions (insurance and investment companies and pension funds), while the retail investors' share has decreased trendwise during a long period.

Public control and credit policy

The Government and its agencies exercise a thorough control of the financial markets. Besides the control of the volume and direction of credits exercised through a great number of monetary policy instruments, there are special laws and charters required for practically all types of financial institutions. However, the dramatic changes in the Swedish credit markets during the last years will probably necessitate a revision of rules. The present laws are in some cases not covering the new type of institutions that have emerged.

The Swedish *monetary policy*, executed by the Central Bank, has *traditionally* been *operated through quantitative regulations* and has thus often been referred to as credit policy. To keep the total amount of credit within tolerable limits, the Central Bank has imposed liquidity and cash quotas, and at times lending limits on the banks and investment quotas on other institutes on the credit market. These formal quantitative regulations have been supplemented by informal agreements and so called moral persuasion in contacts between the Central Bank and the banks.

To avoid interest rate rises following the credit rationing, the Central Bank has also regulated the lending rates, at first informally by agreements, but in the years 1980–1984 formal regulation of interest rates was in force.

In 1982 the rising budget deficit forced the Central Bank and the Public Debt office to introduce what is called non-bank treasury bills (there is a limit for bank investments in them), 6- and 12-month money market papers that were sold in large quantitites from the start.

In 1983 the Government started issuing long-term bonds at market rates, directed at corporations and other non-regulated entities. In connection with this, the liquidity quotas on the banks were lifted. In 1984 the Central Bank also changed the investment quotas on the insurance companies.

In addition, the Central Bank has lifted some regulations applying to issues of bonds. Thereby the bond market including most of the large investors has been deregulated in recent years. The main exception is housing bonds, the sale of which are still centrally administered.

The Central Bank generally adheres to an *exchange rate fixed to a basket of Sweden's major trading partners' currencies*. This policy implicitly dictates the limits for the expansion of the money supply and/or the level of the Swedish interest rate.

The deregulation of the credit market and the new market-rate Government papers has given the Central Bank the opportunity to *influence interest rates through open market operations* affecting bank liquidity. Furthermore, the worsening external balance and the need to refinance Sweden's foreign debt has brought about a heavy dependence on international interest rates and a considerable liberalization of exchange regulations on capital imports. Still, however, the *regulations on capital exports is one of the strictest among the industrialized countries.*

Taxation

In principle, for household and individuals all kinds of dividends and interest payments received are taxable. Capital gains on shares and bonds are taxed according to the number of years the items have been owned. Capital losses are tax deductible only in respect to capital gains. Interest rates payments are deductible up to a certain amount. Net wealth tax is levied on all individuals whose net wealth exceeds 400 000 SEK. However, in 1982 a tax free saving in bank and in shares (through bank funds) of maximum 800 SEK per month was introduced.

For institutional actors on the financial markets the tax laws are more complex and more difficult to overview. However, in general the rules are more favorable than those for individuals.[1])

Summary of a financial market changes in recent years

Starting from virtually nothing in 1980, *a vivid money market* has emerged in Sweden. The development started when banks were permitted to issue certificates of deposit. The real take-off for the money market was the introduction of a new short-term market-rate government paper, the so-called non-bank treasury bills, in the middle of 1982. The booming trade in government papers stimulated the creation of new instruments for other borrowers as well, for example non-financial companies, municipalities and public corporations. There are plenty of examples of how the short-term market has generated new financing models.

The bond market has revived mainly through the stimulating effect from the money market. When the government started issuing long-term market-rate bonds in late 1983, they were immediately traded and quoted along with the money market instruments. In addition, some of the industrial bonds are being quoted, and new forms of housing bonds are marketed in smaller amounts aimed at households and smaller institutions.

The Swedish *stock market* was characterized by low activity, small volumes of trading and new issues and little investor interest throughout the 1970's, apart from a temporary upturn in 1975/1976. Starting in 1980, there has been a rapid

[1]) For a description of the Swedish tax law, see SE-Banken (1985).

development mainly resulting from increased profitability, changed tax rules, the occurrence of new, potent domestic and foreign investors and the establishment of the OTC-list as well as a former undervaluation of shares. During the last years the stock exchange has become a realistic alternative to the bond market for external finance.

2. The Money Markets

The money market is usually defined as a market for short-term capital. In a well functioning money market the actors -firms, banks, financial companies, government and other official institutions; households act as lenders generally only via various institutions – can quickly and at a low transaction cost acquire or place short-term capital in securities that have a publicly quoted price. The efficient money market thus includes a secondary market. Money market instruments typically have rather short maturities (approx. up to one year). However, also instruments with longer maturities (e.g. bonds) are used in the money market.

In a developed financial system monetary policy is conducted through market oriented measures (mostly open market operations). Accordingly the day-to-day loans between the banks, or between the banks and the central bank are also included in the money market. Also the foreign exchange forward market is often included in the money market. Excluding Denmark, the Nordic financial systems until recently have been rather undeveloped. For many reasons a functioning short-term money market had not been established. Now such a market exists in each country's financial system, although its efficiency varies. In the following we give a short comparision of the developments and systems in each country.

In Table 1 the various submarkets of the money market in each country are listed. The schedule illustrates the recent establishment and the fast changes of the money markets in the Nordic countries except for Denmark which traditionally has been most strongly integrated in the international economy. However, the growing internationalization of business and banking since mid-1970s has increased the demand for the financial intermediation to create a basis for changes also in these countries. Common to all these markets is that their development started outside the banks as a "grey market", when firms began to avoid the prevailing strong rationing of a financial market. From the prephase of a grey market to the present situation the development has been rather fast. The Swedish money market already has many of the characteristics of a market-oriented system described above. In Finland and Norway, the money market is more or less in starting phase. However, the various submarkets, altough small, already exist.

In Figure 8 the size and development of the money market in each country is illustrated. The Danish system, as well as the Swedish money market, includes various types of securities whereas in the Finnish and Norwegian market the volume of different securities is not yet big enough to create a functioning system with e.g. secondary markets. In Figure 8 the money market includes the instruments that are available to the public (i.e. firms) and financial institutions.

Table 1 Development of the money markets in the Nordic countries

Submarket	Denmark	Finland	Norway	Sweden
Interbank-market	since 1970	since 1986	since 1971	since 1982
Market for:				
Treasury bills or certificates	since 1975	since 1985[1])	since 1985[1])	since 1982
Certificates of deposits issued by banks and other financial institutions	since 1985[2])	since 1982[1])	since 1985[1])	since 1980
Commercial papers (securities)	since 1985	since 1986[1])	since 1985[1])	since 1983
Deposits on special terms (negotiated deposits) with banks	since 1973	since 1982	since mid-1970s	since mid-1970s
"Grey market"[3])	–	since late 1970s	since 1979	since early 1970s

[1]) So far no secondary market or markets starting.
[2]) Issued by the central bank and dealt only in the interbank-market.
[3]) Transactions between non-financial institutions, often quaranteed by e.g. banks or insurance institutions.

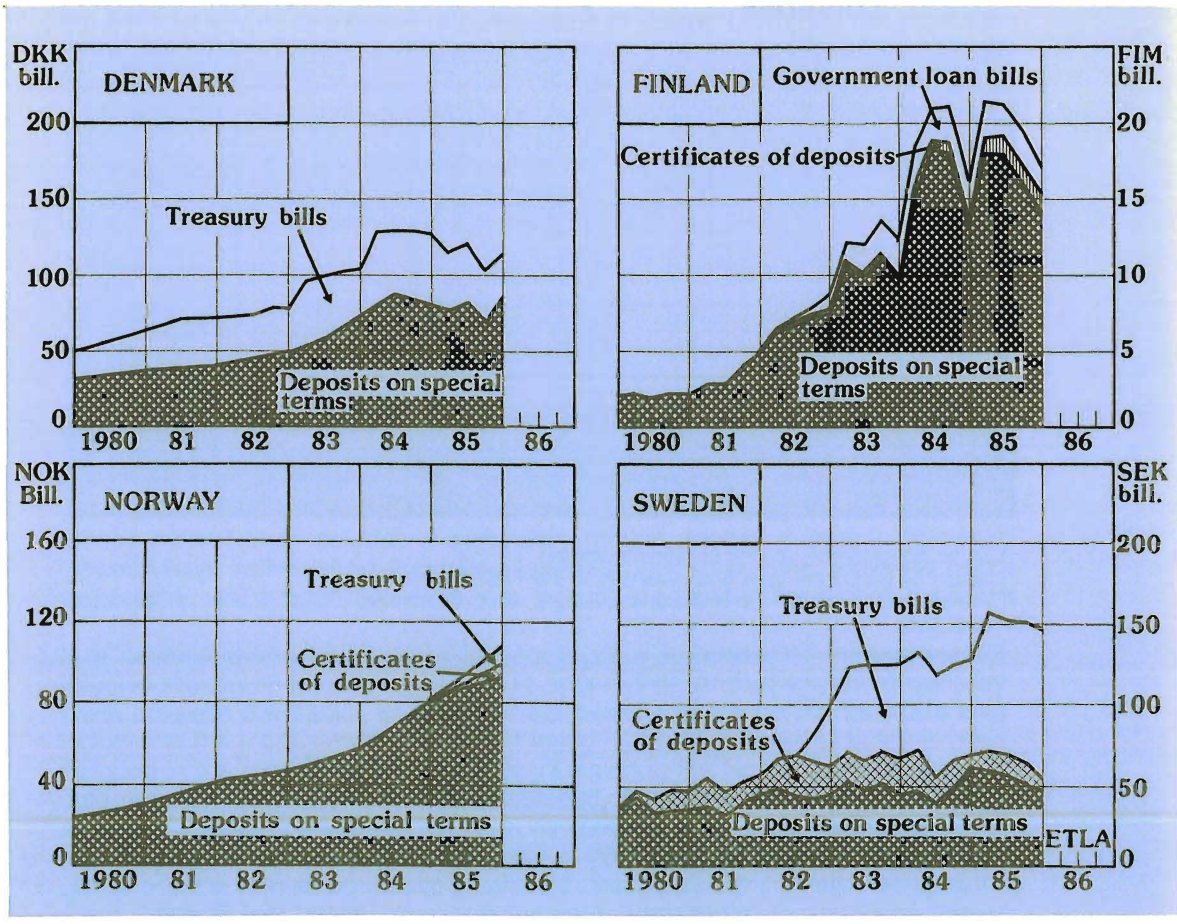
E.g. certificates of deposits used only in the interbank market are not included (as in the Danish system). Excluded are the forward exchange market and the "grey market" which are of rather great importance e.g. in Finland and Norway.

Figure 9 illustrates the high short-term money market rates in the Nordic countries during most of the 1980s compared to the international interest rate level. This is partly related to decreased monetary autonomy which in the fixed exchange rate regime results in rising domestic interest rates especially when there are devaluation speculations.

The Danish money market: Traditionally most sophisticated

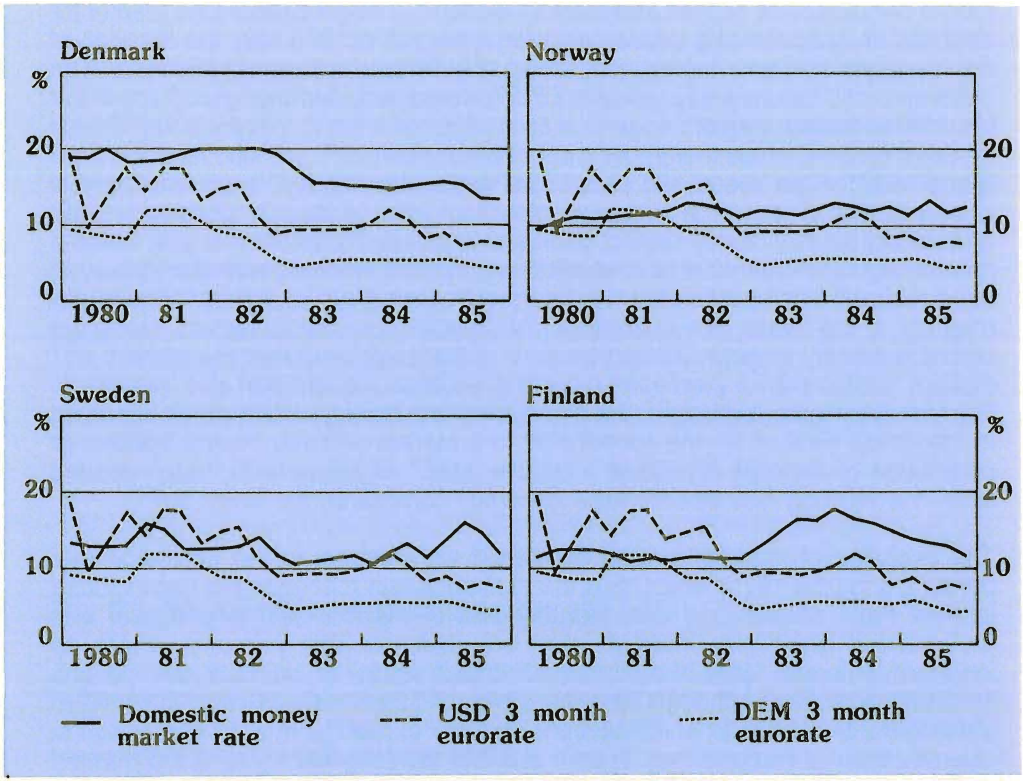
As mentioned before, the Danish financial system differs from the other Nordic ones. The money market there can be regarded as the most developed one in the sense that it already has long traditions in having functioning secondary markets. There are several actors in the market, and also securities with longer maturities are part of the market. The Danish monetary policy is market oriented. The market expanded in the late-1970s and in the beginning of the 1980s, when the large public deficits were almost totally financed by the issuing of bonds and treasury bills at prevailing market terms.

Figure 8 The money markets in the Nordic countries [1])



Source: ETLA, IFF, IUI, IØI.
[1]) The size of the money market, as % of GDP, at the end of 1985 was in Denmark 19 %, Norway 22 %, Finland 8 % and Sweden 17 %.
Note: Figures for Danish deposits on special terms prior to 1982 are rough estimates.

Figure 9 Short-term money market interest rates in the Nordic countries



Source: ETLA, IFF, IUI, IØI. Data from central bank publications, World Financial Markets, Morgan Guaranty Trust Company of New Nork.

Especially the Danish interbank market is free and unregulated except for the central bank interventions. All major banks participate in this market. The interest rate in the interbank market is controlled by the Central Bank, by means of new 3.5 month certificates of deposit that were introduced in August 1985. The market for deposits on special terms (aftalemarkedet) emerged in 1973 after the abolition of the contract between banks concerning the interest rates on deposits. The creation of the treasury bill market in 1975 further intensified the functioning of the short-term money market.

Since 1983, when the public deficit has decreased rapidly, there has been a declining rate of growth in treasury notes. In 1985–86 this temporarily created uncertainty among money market participants and institutional investors, that the market would decline in size and efficiency. These worries have not, however, been realized since public debt has been restructured into treasuries with shorter maturity. In the future, new short-term instruments (commercial papers, mortgage credit) are likely to grow in importance in order to accomodate the market.

For monetary policy purposes, the money markets have gradually been improved in efficiency. First of all, the recent shift to a market oriented control system for certificates of deposits constitute a "rejuvenation" of instruments, much needed since the existing instruments were generally considered as "worn out".

The evolution of markets is also of interest with respect to the exchange rate policy. During the 1970s and 1980s the exchange rate management has included interest rates on the long-term maturity end of the markets. In principle, it is preferable if short-term interest rates are used for this purpose, where as long-term interest rates should remain more stable to improve the general investment climate. Although long-term interest rates are still very sensitive to developments on the external account and the exchange rate of the DKK, the diversification of markets may in time stabilize the long-term end of the market.

The Swedish money market: 20 years' evolution in a couple of years

The Swedish money market development is an interesting example of a rapid evolution with the driving force being the unexploited profit opportunities that the regulated monetary system created in a changing economic environment.

The reasons behind the development of the Swedish financial system, which started in the mid-1970s, are mainly similar to those mentioned in section 1.2. The economic environment had become more uncertain, the competitiveness of the Swedish firms deteriorated drastically, profitability collapsed and the growth rate of investments slowed down. Among others these factors changed the behaviour of the firms, who started more intensively than before to plan their liquidity. Firms even established their own departments for the financial management, and their traditional links to a "house bank" loosened. Thus the competition among banks and financial companies increased. In the beginning of 1980s the investment activity of Swedish firms remained low and their cash reserves were on high level. Simultaneously the government deficit grew significantly and the incentives to direct firms' excess funds to the government, grew. This created the conditions for the emergence of the money market in Sweden.

The development of the short-term money market was, however, started at the initiative of the banking sector. First the banks began taking funds from firms in the form of special deposits and later in March 1980, to issue certificates of deposits. This is regarded as a starting point of the Swedish money market.

In 1980–1982 the central bank tried to resist the rapid growth of the liquidity in the economy through various measures which however did not work in the expected way. Simultaneously, there were difficulties to finance the government deficit from the traditional sources. For these reasons the government started issuing treasury bills and became thus one of the participants in the money market in summer 1982. Along with the introduction of the treasury bills the secondary market was created. The development has been rapid also afterwards, now papers issued by firms, financial companies and municipalities are dealt in the market, together with the treasury bills.

The dramatic expansion of the Swedish money market, especially the introduction of treasury bills has made it possible and even necessary for the central bank to begin to influence the interest rate level and banks' liquidity through open market operations.

The Finnish money market: Just taking off

In the Finnish money market development the public sector deficit – that has been rather central in the innovation and deregulation process in other Nordic countries – has not had any major role. Otherwise the process has been similar, especially resembling the Swedish developments.

In the late 1970s the monetary policy was tight and there was constant excess demand for bank loans at the prevailing regulated interest rate. Because the investment activity was low and the profitability of the Finnish firms had turned better after the recession years, the liquidity of the firms grew. There was even "excess liquidity" due to the prepayment arrangements in the Eastern trade in the beginning of the 1980s. The grey market that step by step emerged between the firms a couple of years earlier expanded rapidly. The banks were eager to participate in this market, because during the tight monetary policy the central bank borrowing of the banks was on a high level and the marginal cost was high.

The competition for grey market funds by means of the interest rate was, however, prevented by the contract which Finnish banks traditionally have had concerning the interest rates on various bank deposits (see section 1.3). However, banks could act as intermediators of these funds by using their trust departments and through the financial companies, owned by banks, whose balances in the 1980s grew rapidly. Gradually the banks started to slip from this cartel and to take in free market funds in the form of special deposit contracts. In 1982 banks got the permission to issue certificates of deposits, but sofar they have not gained a significant role.

Also the Bank of Finland has favoured deregulation. In the beginning of May 1983, banks were allowed to transfer part of their funding costs of these so called free market funds into their lending rate. This can be regarded as the birth of the

short-term money market. The market was further developed in May 1983, when the call money market was changed to have only one common interest rate for all banks (the tranche system was abolished).

The establishing of foreign banks in Finland in 1982 and the deregulation of their activities has increased the competition among the banks, and thus also greatly influenced on the development of the money market in Finland.

At present the Finnish money market consists of the free funds market (responds deposits and loans on special terms) between banks and firms, the forward exchange market, and the call money market between the central bank and banks. The call money rate was the same for deposits and loans until the beginning of 1986, when the Bank of Finland started to pay lower interest on the banks' deposits. This led to the creation of an interbank market. The above submarkets have become internally more integrated. The short-term money market including the forward exchange market has grown substantially.

The Finnish money market as described above, has taken only the first steps towards market-orientation. There is practically no secondary market, and the short-term interest rate is directly determined by the central bank's call money rate. However, towards the end of 1986 the central bank introduced a three months' borrowing facility for banks as an alternative for day-to-day borrowing. The three month rate is largely determined by the credit bids given by the banks. The market-oriented development is strong, the system of two interests (unregulated and regulated) has become more and more diffused. Especially after the abolishment of the ceiling for the highest lending rate in the beginning of 1986 and the final abandoning of the controlling of banks average lending rate in August 1986.

It is largely belived that the short-term money market will further expand and become increasingly diversified. One possibility to create a functioning secondary market may be increased issuing of bank certificates. The need for institutional changes is also widely recognized.

The Norwegian money market: No functioning secondary markets

The Norwegian money market has changed remarkably during the past few years, although it still – like the Finnish one – is rather undeveloped. The origins of the changes date back in the mid seventies when during the international recession the fiscal policy was turned expansive and future oil revenues were made use of in advance. The government spending and lending were increased. This resulted both in government deficit and deficit on the external balance. In 1977–78 the fiscal policy turned restrictive and the interest rate policy led to higher interest rates. In 1978 the monetary policy was strenghtened. The lending ceilings of commercial and savings banks were lowered. In the autumn 1978, however, the price and income clause was introduced. The interest rates were at first included in the clause but were liberated in 1980 at the same time when the bond market was partly liberalized.

After the abolition of the price and income clause there was great pressure for higher prices and costs in the economy. These factors turned the minds against

liberalization. New regulative forms were again introduced. Regulation was at its highest in 1983 when direct control was applied practically in all markets.

But regulation was not effective. The innovative ability to intermediate funds was high in spite of rules. Due to large oil income the current account had turned into surplus. The supply of money in the economy increased and there was excess demand for credits. These factors led to the emergence of an unregulated grey market. The structure of the market was unsettled, which, together with the ineffectiveness of the regulatory policy, made it even more difficult to exercise monetary policy.

By the beginning of 1984 it was evident that deregulation of the financial market was needed and the authorities have since then favoured deregulation. The market-oriented interest rate policy is designed to influence the demand side in the credit market. The lending ceilings of commercial and savings banks have been abolished. There is no more obligation to invest in government bonds and also the new emission regulation has been liberalized. Further the foreign capital movements are liberalized, but only with regard to trade related capital flows (see section 1.3.3).

Until 1985 the money market in Norway included an interbank market with the banks' borrowing facilities in the Bank of Norway, deposits on special terms and the grey market. The interbank market is partly in NOK and partly in foreign currency (the swap market since 1979). The interbank market gained importance after 1971 when the Bank of Norway reduced its interventions in the exchange market. Like in Finland, the foreign exchange forward market has recently gained an important role in the short-term money market due to the increased interest rate differential between domestic and foreign markets. The certificate market gained importance in 1985 when short-term negotiable treasury certificates were issued, and banks, finance companies and business enterprises were allowed to issue deposits and loan certificates. Simultaneously the issuing of money market paper (by the central bank) was abolished. The treasury certificates immediately became important instruments of the market oriented monetary policy, along with the purchases and sales of bonds. The Norwegian Government is since 1985 using the interest rate on treasury certificates as a signal rate for the short-term money market and the rate on government bonds as a signal for long-term interest rates. This has brough about a closer link between the money market and the capital market in Norway.

As a summary we can conclude that the Norwegian money market has, along with the deregulation process, developed from being a market strictly concentrated on the banking system, into a market with a wide range of participants. As a consequence, a steadily rising proportion of bank deposits carry interest matching the money market rates.

3. The Capital Markets

The institutional setting for long-term credit varies greatly between individual Nordic countries. This is due primarily to different traditions with respect to the division of functions in the financial sector.

Whereas banks have played a leading role in Finland, Norway and Sweden, mortgage credit (by mortgage institutions' issuance of bonds) has been the dominant source of long-term credit in Denmark.

Over the last 10 years, however, the importance and characteristics of bond markets in the four countries considered have been converging – due, both to common external developments, similar domestic economic problems, and also due to conscious attempts to improve the functioning of bond markets.

Although large differences still exist, all countries seem to have the following general development features in common:

- Creation, diversification and sophistication of bond markets and growing importance of trade.
- In the 1970s, government issuance of bonds came to dominante the bond markets completely.
- Creation and growth of the bond markets with shorter maturity, prompted by the financing of public sector deficits since the mid-1970s. Increased interest among investors in the short-term bond market for the purpose of liquidity management.
- Increased interest on the part of large companies in the bonds markets – as a means of credit and financial investment.
- Deregulation on both issuance and investment obligations has been extensive in the 1980s, and there is an increased reliance on market forces in regulation.
- Increasing internationalization of the bond markets, although it was initially asymmetrical in favour of capital import rather than export.

3.1 Institutional features

Bond issuance:

In Sweden and Denmark, the traditional borrowers in the bond markets have been private persons and to some extent private enterprises, and mortgage institutions providing funding for private residential construction have been dominating the markets. In Finland and Norway, however, housing credit has been channeled through banks, and the relative importance of the bond markets in the overall credit systems have been correspondingly smaller.

In all countries, state borrowing aquired overwhelming significance from the mid-1970s and onward. In Finland, the creation of a bond market is almost exclusively due to government borrowing.

Long-term credit to private enterprises through specialized mortgage institutions have generally been important, but in the 1980s, enterprises have increasingly turned directly to capital markets by issuing corporate bonds. Their general importance is still very limited, however.

Bond investment:

In Norway and Sweden the investments in bonds have been heavily regulated by investment obligations. Traditionally, this regulation served purposes of controlling banks, pension funds etc., but in relation with growing public sector bond issuance, these investment obligations proved usefull in providing domestic sources of credit (relatively inexpensive) for the public sector. Placement rules account for some of the intra-Nordic difference in the distribution of the total stock of bonds. Thus, by the mid-1980s, the private sector's share in Denmark was about 1/3, in Finland about 50 %, in Norway about 20 % and in Sweden about 15 %.

In recent years there has been a tendency for the corporate sector to invest in bonds. The increased interest of the corporate sector for using bonds as financial assets, is due both to relatively high rates of interest (compared by yields on real investments), and (in the 1980s) to a general speculation in continually declining interest rates. Government notes have been attractive to private companies in cash flow management as a highly liquid and low-risk asset.

Markets and trade

Until recently, only Denmark and (to a lesser extent) Sweden had a well developed secondary market for trade in bonds, i.e. trade after issuance. In Norway and Finland, secondary markets have practically come into being since the late 1970s.

In some countries, the bond markets have been somehow segmented in order to suit political aims of credit policy. The most evident example is Sweden, where the bond market is divided into a priority sector (bond issuance for housing and private business) and a non-priority sector. The priority market is subsidized in the sense that it recieves preferential treatment with respect to tax etc. In Finland, a similar segmentation of the market has existed for many years since tax freedom is granted for some bonds, such as government bonds, whereas commercial bonds and debentures are generally taxed. Furthermore, the Government may grant tax free status to issuers.

3.2 Interest rate developments

Policies with regard to the availability and price of long-term credit differ significantly among the Nordic countries. While on the one hand, Finland, Norway and Sweden have conducted low interest rate policies (based on quantitative regulation), the Danish policy has been to keep interest rates high (primarily through open-market operations of the central bank) in order to ensure sufficient private capital import to finance the balance of payments deficit.

While balance of payments problems have also been serious for the other countries (though relatively smaller), the Danish choice of relying heavily on private capital import has been a distinctive feature.

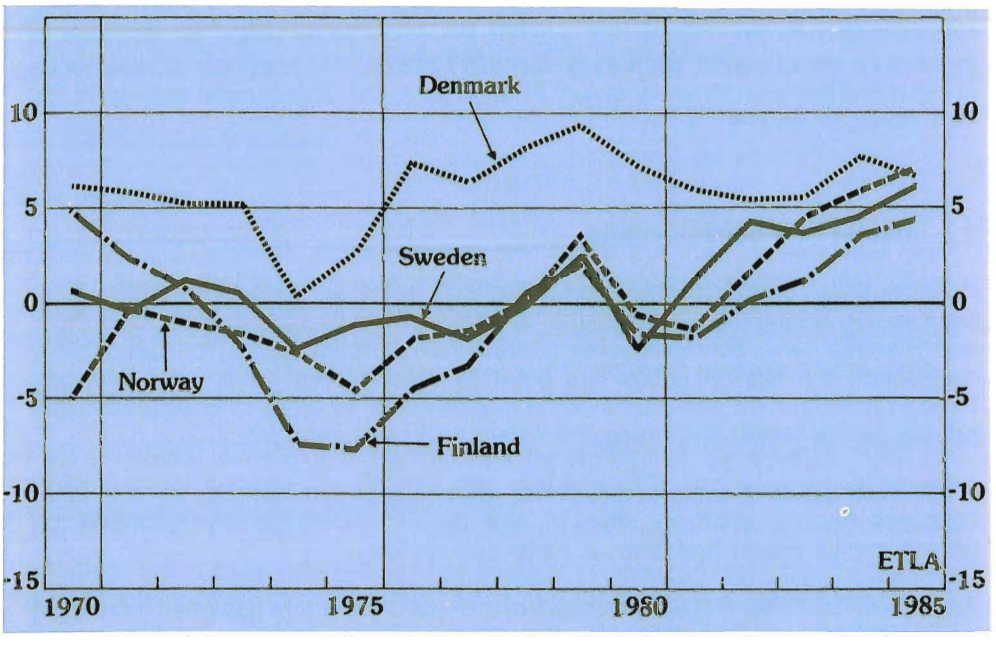
As evident from Figure 10, the real rate of interest in Denmark has been increasing up till 1982 and throughout this period the rate has been considerably higher than in the other Nordic countries. The interest rate differential vis-a-vis the internation-

Table 2 Bond markets in the Nordic countries

	Denmark		Finland[1])		Norway		Sweden	
	1980	1984	1980	1984	1980	1984	1980	1984
	Bill. units of national currency							
Total circulating bonds at nominal values	499	838	17	44	86	147	323	560
	%-shares							
Share issued by:								
– State	20	39	39	38	44	40	41	49
– Mortgage inst	75	56	26	20	13	20	46	40
– Banks, municipalities, firms	5	5	35	42	43[2])	40	13	11
Share placed with:								
– Banks etc[3])	18	21	37	44	51	42	31	32
– Insurance comp.	25	25	9	7	21	21	18	22
– Pension funds	16	18			21	16	37	32
– Other[4])	41	36	54	49	7	21	14	14

Source: national sources.
[1]) Bonds and debentures.
[2]) Incl. state banks and non-listed bonds.
[3]) Incl. the central bank.
[4]) Incl. postal giro and postal banks.

Figure 10 Real rates of interest 1973–85[1])



[1]) Real interest rates calculated from data available in the Statistical Appendix.

al market rates has also been considerable in order to ensure the needed private capital import. The policy objective of private rather than public capital import was generally succesfull, but the high real interest rates contributed to a serious investment downturn in the late 1970s and early 1980s. Since the economic policy changes in 1982, the interest rate differential has been gradually reduced. The need for capital import is still present, but the greater confidence in a stable value of the Danish krone has allowed for a significant narrowing of the interest rate differential without serious difficulties in providing the needed foreign exchange reserves. In the mid-1980s, however, the balance of payments deficit has caused a renewed increase in this differential.

A major reason behind the lower Swedish interest rates (despite comparable public sector deficits) was the continued issuance control and investment obligations. These regulations have, however, been graduaily eliminated in the 1980s which has caused the interest rate to rise and approach the Danish level.

3.3 Public sector deficit and borrowing

Of the four Nordic countries considered here, only Denmark and Sweden have experienced a serious problem of public sector financial deficit. In Norway the public deficit (excluding oil revenue) has been considerable and increasing, but oil revenue has prevented this from causing difficulties with respect to the financial markets. In Finland the public sector deficit has caused some government borrowing, but at a much lower level than in the other countries.

Despite the similar relative size of the deficit in Denmark and Sweden, the economic implications have differed considerably due to the different institutional set-up and to alternative ways of *financing the deficits*.

For all countries considered, debt financing has been conducted with issuance of bonds in domestic markets. At the same time monetary policy in the second half of the 1970s was generally tight (partly inspired by "monetarism", but also directed at eliminating or reducing the liquidity expansion, inherent in the fiscal deficit). The overall aim (particularly for Denmark) was to control interest rate developments, whereas the monetarist principles of controlling money supply was much less dominant. Hence, the bond financing of public sector deficits was generally accomodated with counterweighting increases in the liquidity, leaving interest rates unaffected.

In Denmark, the large bond market is governed by market forces, i.e. demand and supply must be balanced by the interest rate. There is no investment obligation for financial institutions and the government bonds have to compete with private bonds. The large amounts of government bonds issued in the early 1980s (in 1982 75 % of net additions of bonds) are not generally considered to have caused serious crowding out, a conclusion that also holds for the other Nordic countries since monetary policy was directed at interest rate management and thus accommodated bond issuance. Furthermore, potential crowding out was countered by the establishment during the late 1970s of several large institutional investors such as pension funds etc.

The growth in public sector debt between the mid-1970s and the mid-1980s also entailed increasing foreign borrowing. Thus, by 1984 the share of foreign debt in

total central government debt had reached about 56 % in Finland, 40 % in Sweden, 23 % in Denmark, and for Norway the public foreign debt was almost non-existent.

In the 1980s the central government deficits have gradually come under control in the Nordic countries. Since 1982 the Danish public sector deficit has been declining, and the public budgets are likely to balance by 1986 or 1987, although deficits may occur occasionally through the rest of the 1980s.

3.4 Recent liberalizations and possible re-regulation

In all countries the bond markets have been regulated on the supply side (by issuance control) and (except Finland) on the demand side (by investment obligations of banks etc.). In Denmark, however, the degree of regulation has been distinctively lower than in the other countries. In recent years, the Nordic credit markets have been subject to wide ranging changes in regulations. Generally the changes have enhanced liberalizations – with a few (temporary) re-regulations:

Denmark:
1978 – Residents allowed to buy bonds issued by international organisations, of which Denmark is a member.
1979 – Suspension of sales of kronebonds to non-residents.
1983 – Suspension lifted on foreign sales of kronebonds.
– Residents may freely buy foreign bonds provided that the original maturity exceeds 2 years.
1985 – Although residents' purchases of un-listed foreign bonds and shares are still subject to approval from the central bank, since June 1985, however, this is administered in a liberal way.
1989 – Planned abolishment of issuance control of mortgage credit.

Finland:
1985 – Temporary ban on non-residents' purchase of domestic bonds and debentures. This is still in force by the end of 1986, although in a somewhat relaxed form.

Norway:
1980 – Relaxation of bond issuance controls.
1982 – Re-regulation of issuance control.
– Access for foreigners to buy Norwegian bonds.
1984 – Foreigners' access to purchase Norwegian bonds (including government bonds) suspended.
1985 – Bond investment obligations virtually eliminated for all financial institutions (and aquisitions drastically reduced).
– Loan associations allowed to freely issue bonds in order to grant loans to the business sector.
– Eurobonds may be traded freely in the secondary market.

Sweden:
1983 – Issuance controls liberalized.
1984 – Placements obligations of insurance companies changed from the a net basis to a gross basis, i.e. placement obligation only for current issues, whereas the obligation to hold on to them is discontinued.
1985 – Placement obligations of insurance companies (except life insurance) lifted.
1986 – Banks' placement obligations for priority housing bonds abolished.

The heavy dependence on foreign financing of public sector deficits in the 1970s and the gradual liberalizations of bond markets, have made the bond markets important channels for international capital transactions. It is especially the surge in recent years in sales abroad of bonds denominated in national currencies ("kronebonds"), that have opened up the Nordic capital markets.

In *Denmark* sales of kronebonds have increased rapidly in conjunction with the growing confidence in the fixed rate policy of the government. From 1979 to early 1983 the access for foreigners to aquire Danish government bonds was suspended. But the liberalization in 1983 was followed by large net sales, increasing from about 3 billion in 1983 to 9 billion in 1984 and 17 billion in 1985. In 1986 the interest of foreign investors has moderated somewhat which may be attributed to the mounting balance of payments problems.

The rapidly growing stock of kronebonds owned by foreigners has caused some uneasiness about a possible rush of returning papers in case of impending depreciation of the DKK. One such period of uncertainty during the latest months of 1985 and early 1986 reversed the direction of capital movements as krone bonds were returned and as private residents invested heavily in foreign shares (liberalized in 1984). A rise in interest rate differentials in March 1986 stopped the outflux of capital – at least temporarily.

While the trend has clearly been towards further liberalizations, it appears that the process of deregulation may turn into a *process of re-regulation*. The bond markets provide examples of both reversal of liberalization initiatives and of increased control to counterweight deregulations in other parts of the financial market.

An example of the need to reverse deregulatory initiatives is available from *Norway*, where the elimination of (parts of) the emmission control of bonds with long maturity caused an boom in private issuance. The move caused several problems: first the Norwegian economy was then operating close to capacity levels and hence in no need of further credit expansion. Secondly, the move caused difficulties for sales of Government bonds, since the government was unwilling to raise the interest level sufficiently. Similarly, the access for non-residents to buy treasuries has been reversed again since sales progressed too rapidly.

In *Denmark*, it appears that bond markets are one of the few remaining areas amenable to traditional quantitative control. In particular mortgage credit has come to bear a rather large burden as a policy instrument. Thus, recent policy interventions to reduce the private consumption and the trade deficit have employed quantitative reductions in credit availability.

4. The Equity Markets 1970–1985

4.1 Introduction

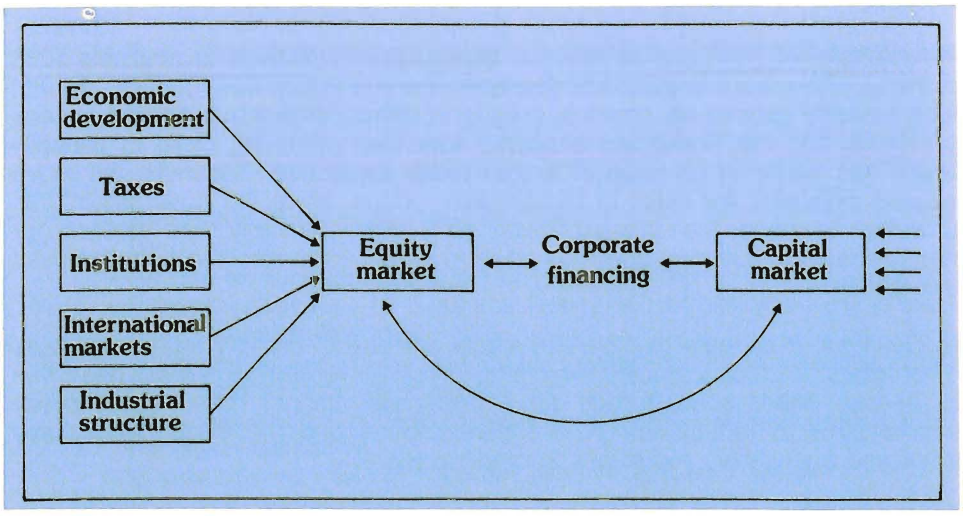
A firm acquires finance from different sources. It generates an internal cash flow, it can borrow from banks, credit institutions and from the public, or it can acquire finance in the equity market. The source of finance chosen depends on the cost and availability, which in turns depends on a number of different, but interrelated, factors such as the interest rate, expectations about future profits and growth, strategies and institutional factors and taxes. Thus, there is a very close connection between the money, capital and equity markets.

The main tasks of the equity markets is a) to generate new risk capital and allocate the resources in an efficient way so that new and profitable companies are able to attract resources, b) to value firms adequately, and c) to work as a market for corporate control.

By issuing shares for sale to the public a company acquires financing which need not to be repaid during its operating life. Investors receive a return on their investment in the form of dividends or by increasing value of their shares. Share ownership is also accompanied by administrative power, exercised by shareholders in deciding matters at the General Meeting.

Share financing is in many cases more expansive for a company than credit financing. To be able to pay a dividend a company must show a profit on which a tax is payable. The costs of credit financing, on the other hand, are tax-deductible.

Figure 11 The equity market



According to Teigen[1]) the amount of new equity issues as a share of GDP was during 1965–72 approximately as large in the Nordic countries as in the USA. Teigen draws the conclusion that the Nordic countries had relatively well-developed and active equity markets. During the 1970s, new share issues on the stock exchange accounted only for some 2–5 % of total funds furnished to the stock exchange companies. During the 1980s the importance of the equity markets seems to have increased.

All Nordic equity markets – except the Danish one – are still regulated, and we are a long way from a common Nordic stock exchange. In Table 3 the intra Nordic ownership of large corporations is listed. As can be seen, the number of large Nordic companies owned to more than 10 % by owners from other Nordic countries is very limited. In international comparison, the Nordic equity markets are rather small. This may cause market inefficiencies and is another argument in favour of a common Nordic market.

As matters now stand it may be easier for a firm in any Nordic country to negotiate a business deal, for example a direct acquisition, with a firm outside the Nordic countries than with another Nordic firm. In the first case, there is only one regulatory agency to contact; the one in the firm's host country. On the other hand, if two Nordic companies see a mutually beneficial business combination that involves equity arrangements, there are two regulatory bodies to deal with, that may not be in agreement or incline to make decisions fast. In ETLA et.al.[2]) it was argued that this situation makes it relatively more easy for Nordic firms to look outwards for new business combinations. The effects can be observed in the form of lower intra Nordic industrial cooperation than the extent of industrial activity in the Nordic countries should suggest. This slows down, or prevents, the forming of efficient business combinations on a Nordic basis. During the last years, however, we have witnessed an upswing in inter Nordic acquisitions.

Table 3 Number of large companies in which more than 10 % of equity capital is owned by owners in other Nordic countries, 1984

	Number of companies in					
	Denmark	Finland	Island	Norway	Sweden	Total
Owners in						
Denmark	–	0	0	0	1	1
Finland	0	–	0	0	0	0
Island	0	0	–	0	0	0
Norway	1	0	1	–	1	3
Sweden	1	1	0	5	–	7
Total	2	1	1	5	2	11

Source: ETLA, IFF, IUI, IØI (1985), Samhandel og eierforbindelser i Norden. Situasjon og utviklingstrekk, Bergen.

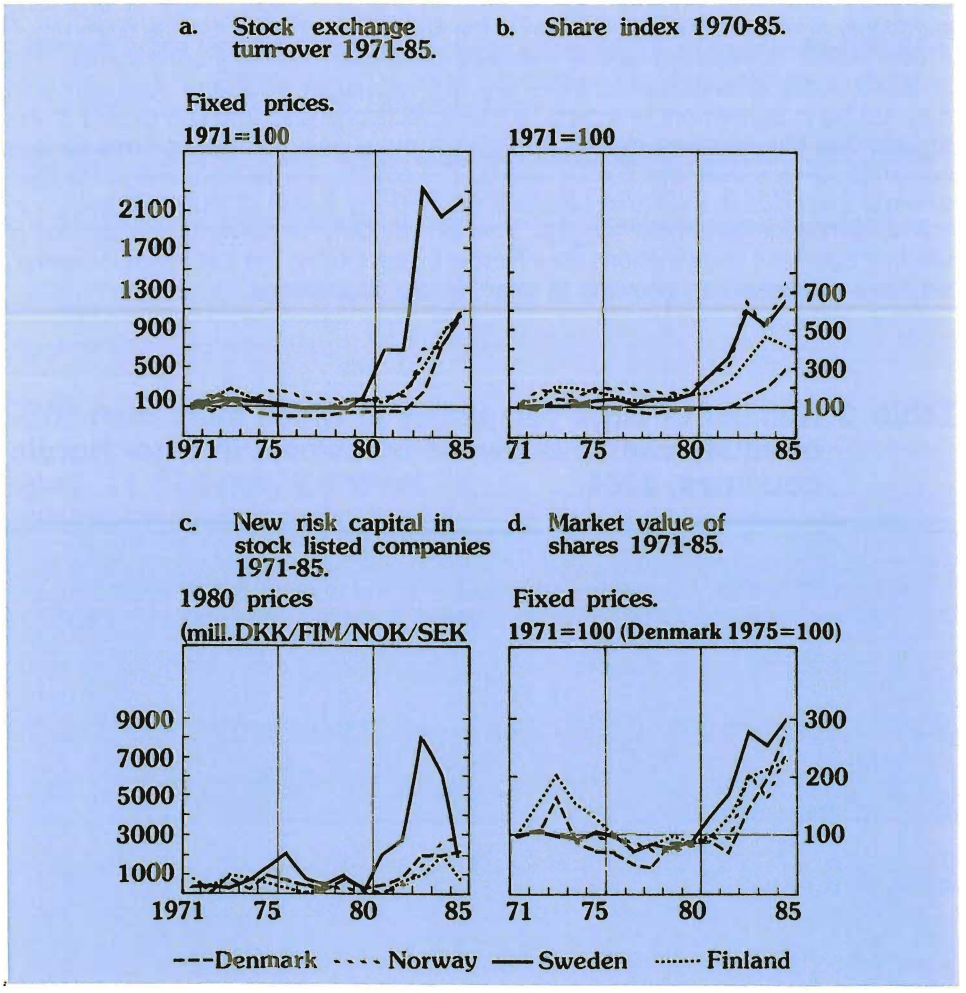
[1]) See Teigen (1975), Financial development and stabilization policy: A study of the Scandinavian Economies, Stockholm.
[2]) ETLA, IFF, DØR, IUI, IØI (1984) Economic Growth in a Nordic Perspective, Helsinki.

The main purpose of this study is to *describe and analyze* the development of the Nordic stock exchanges, with regard to turn over, market value of shares, entry and exit of firms, new capital issues and export of shares. One important question is whether the differences between the countries in terms of industrial structure, institutions, taxes etc. also can be noticed in different developments of the equity markets, or if the development is similar in all countries due to some more general explanation (Figure 11). We will also discuss the importance of the creation of new "small company" stock exchanges, and venture capital markets.

4.2 The development of the stock exchanges 1970–85

The development of the stock exchanges has been quite similar in the different Nordic countries. After a stagnant period following a peak in the mid 1970s, all

Figure 12 The Nordic stock exchanges 1971–85



countries have witnessed a fast expansion during the last years in terms of value of shares, turnover and new issues of shares. Generally speaking, the stock exchanges have been vitalized (Figures 12a-d). The upswing in the Nordic countries have been rapid also in an international comparison (Figure 13).

In *Denmark* the equity market was rather passive until the beginning of the 1980s. After a peak in 1975/76 both stock exchange turn over, market value of shares, and share index decreased due to lowered profitability and competitiveness. In 1981/82 the trend was reversed and a period of very fast growth followed. In 1984 there was a setback, foremost due to an "overvaluation" in the beginning of the 1980s of new stock exchange companies. In 1985 the expanison continued but the development during 1986 has been characterized by large set backs. In 1985 total turnover was 13.5 billion DKK and total market value of shares 135.4 billion DKK (excluding Unit Trusts).

The number of companies listed on the stock exchange was in 1975 252. The number fell continuously until 1982 when it was down to 210. Since then it has increased to 249 (in 1985). The amount of new share issues shows a u-formed development, with large increases from 1983 onwards.

The foreign demand for Danish shares has increased during the last decade, due among other things to a relaxation in the rules restricting trading of shares (and capital). From 1975 to 1979 Denmark was a net importer of shares, but from 1980 onwards (except 1984) a net exporter. The 1984 change was caused by a complete liberalization of foreign share imports. Denmark has free capital movements and a free export of shares and securities to abroad.

In 1982 the s.c. Børs III (Stock Exchange 3) was established for small and medium sized companies. In 1985 28 companies were listed on this exchange. At present, a stock exchange reform is underway. The reform , which will be fully implemented in 1987, will decentralize stock exchange trading.

The *Finnish* stock market differs somewhat from those in the other Nordic countries in that the peak of 1973 was much higher, and that the improvement began already in 1978/79 (with a small rest in 1980). In 1985 total turnover was 3.1 billion FIM, total market value of shares 31.7 billion FIM.[6])

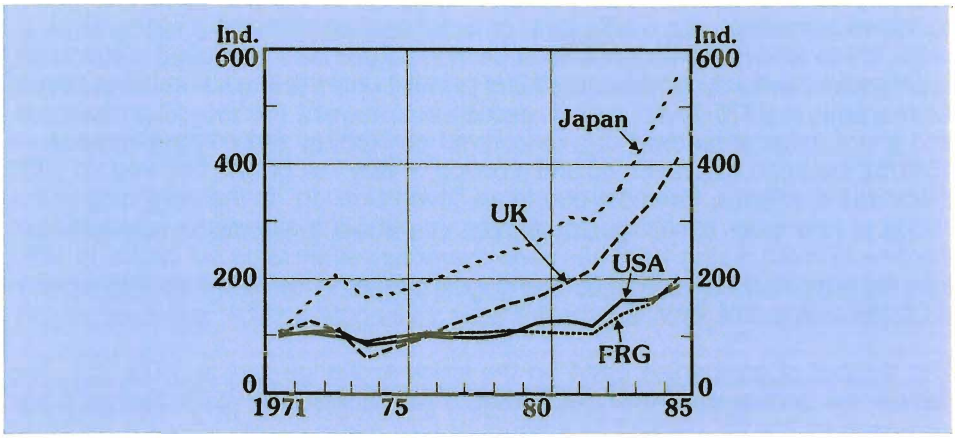
An interesting feature is that turnover in unrestricted shares, i.e., shares which can be freely acquired by foreigners (see below), has been clearly greater than that of restricted shares, the latter making up for at least 80 % of all shares. To promote sales of unrestricted shares the Helsinki Stock Exchange also started to quote them separately. Data regarding the export of shares are few and unreliable. However, they seem to indicate a fast increase in gross and net export of Finnish shares.

Except the shares of Finnish insurance companies which are freely available, a foreigner may purchase only the unrestricted shares of the corporations. A company or bank can issue this kind of shares up to 20 % of its total share capital. A proposal to amend the legislation to allow the amount of free shares to

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[6]) This does not include the stock brokers' list, which legally doesn't form a part of the stock exchange. On this list 27 companies are included (1985).

Figure 13 Share index in Germany, Japan, UK and USA 1971–85
1971=100



rise up to 40 % (the limit to the shares giving also full voting rights to foreigners remaining the present 20 %) has been given to the Parliament. Furthermore, in January 1986, Finns were allowed to acquire a limited amount of foreign financial assets.

One important factor regarding households' ownership of shares is that interest on governments bonds and bank deposits is tax free (until 1988 at least), while dividends on shares and the yield of most other bonds and debentures are taxed progressively (after some minor deductions). This, has diminished households' role in the development of the Finnish stock exchange, although their interest in stocks and bonds has increased.

In contrast to the other Nordic countries the number of companies listed on the Finish stock exchange has been rather constant: in 1970 45 companies were listed, in 1980 50 and 1985 51.

In 1984 an OTC-list was established in Finland for companies with at least 1.5 million FIM in share capital, 200 share holders of whom no one owns more than 90 % – and sales of at least 25 million FIM. In 1984 only one company was on the list, but during 1985 the number increased to 4. Daily trading takes placed.

The *Norwegian* stock market has also been vitalized during the last years.[7]) In terms of turn over, share index and market value of shares there was a peak in 1973 followed by a decline with a trough in 1977/78. Since then growth has been very rapid. The development of the Norwegian stock exchange is heavily influenced by the developments in the oil market. The recent fall in oil price has therefore affected the stock market negatively. In 1985 total turnover was 31.8 billion NOK and, total market value of shares 77.1 billion NOK.

[7]) Furthermore, there exists some small local stock exchanges in Norway. Thir positions will be further strengthened during the comming years.

In accordance with the great fluctuations in turn over and market value, the number of companies listed has varied considerably. In 1970, 152 companies were listed on the stock exchange, in 1974 the number had increased to 159 but fell to 115 in 1981. Since then the number has grown to 163 in 1985, including the small business stock exchange (33 companies). Exits for other reasons than mergers have been more common in Norway than in the other countries. The considerable fall in the number of listed companies between 1974 and 1981 was primarily caused by the worldwide shipping crisis. A total of 38 shipping companies were forced to exit the stock exchange. These companies accounted for more than 60 % of all exiting firms. In 1985/86, however, several companies have exited because of mergers and acquisitions.

The amount of new share issues has also increased during the last five years and was in 1985 more than twice as large as on the previous peak of 1975. At the same time export of shares has increased fast. Generally speaking, the limits to foreign ownership are 10 per cent in banks, 15 per cent in insurance companies, 20 per cent in industry and 40 per cent in shipping. The export of shares is controlled by the Bank of Norway. Within the limits mentioned above, there are in practice no control of foreign ownership of shares.

In 1984 a small business stock exchange (Børs 2) was established in Norway. During its first two years 33 companies were introduced to the exchange. A majority of the companies were formerly listed on the un-official stock brokers list. The amount of capital raised was in 1984 about 600 million NOK, in 1985 approx. 250 million NOK. Total market value of shares was 4 300 million NOK in 1985 and total turnover 2 600 million NOK. To be listed on Børs 2 a company must have an equity capital of at least 2 million NOK, and 200 owners of a certain size.

The development of the stock exchange in *Sweden* – larger than the other three put together – resembles very much that of the other Nordic countries. In 1980 the stagnation, following a peak in 1975, was followed by a very fast and steady growth in trading activities and corporate values. Even in international terms, the Swedish stock exchange has been an outstanding price performer during the last years. The number of companies listed on the stock exchange has increased from 96 in 1979 to 170 (including OTC 242) in 1985.[8]) Total turnover was 83 billion SEK in 1985 and total market value of shares 288 billion SEK.

The growing importance of the stock exchange can, apart from the number of companies entering the exchange, also be illustrated by the increasing number of new share issues during the last years. After a peak in 1983, however, the amount of new risk capital has decreased by some 75 %. At the same time the export of shares has grown rapidly. Until 1981 Sweden was a net importer of Swedish shares. After a liberalization of rules in 1980, the equity imports in the form of foreign issues or sales of Swedish shares abroad increased rapidly, and Sweden became a net exporter of shares (net importer of equity capital). During 1987 deregulation of the rules concerning acquisitions of foreign shares will probably take place.

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[8]) Until 1981 the equity market also consisted of the s.c. fondhandlarlistan (stock brokers' list). Due to a change in the rules of the stock exchange a majority of those companies were transferred to the newly established A:II list, where the rules regarding e.g. the distribution of share, are somewhat relaxed. In total some 40 companies were listed on the stock brokers list during the 70s. Out of these 6 was introduced to the stock exchange in 1980 and 26 in 1981. Thus, these companies account for a large part of the number of introductions these years. The market value of shares on the stock brokers' list was in 1980 ca. 7 billion SEK.

In 1982, a small business stock exchange (OTC) was established in Sweden to faciliate the raising of funds for small and medium sized companies. The terms for being listed on the OTC-market are at least 2 million SEK share capital and 200 owners of whom no one owns more than 90 %. This concept proved an immediate success. The total number of listed firms was in 1985 72. The amount of capital raised was 415 million SEK in 1983, 460 million SEK in 1984, and 75 million SEK in 1985.

Among the factors that have a bearing on this vigorous development of the stock exchanges in all Nordic countries are both common and country specific ones. Among the common ones are:

- tax relaxation on unit trust savings and/or tax relaxation on dividends and capital income. A more positive attitude towards equity financing and savings in shares from both politicians and the business community.
- growth in domestic demand due to increased profitability and competitiveness in business.
- entry of foreign investors, in some cases after liberalization of rules. Nordic shares relatively cheap in comparison to those abroad.
- increased liquidity.
- favourable economic developments, and developments of the entire financial market.
- an increased undervaluation of shares during the 1970s.
- higher investments, changed structure of investment and a necessity of a higher share of equity capital.
- international stock market upswing.

Among the country specific explanatory factors are:

- entry of new companies, and the establishing of special stock exchanges for smaller companies (Norway, Sweden, Denmark).
- tax changes made premium bonds less attractive, why capital moved into shares (Sweden).
- decreased tax on capital gains (Norway).
- decreased transaction costs with regard to new issues of shares (Norway).
- improved possibilities of households to borrow money for investments in shares (Norway).
- improved profitability and brighter future expectations following the devaluations in 1981 and 1982 (Sweden).
- diversification of financial portfolios (Denmark).

4.3 Venture capital

The supply of venture capital for small or medium sized companies has expanded rapidly during the last years, and the number of venture capital companies has increased. The purpose of the venture capital company is to supply financial resources to small and medium sized firms with good growth potentials and to influence their future development. In practice, this means that the venture company buys a significant (but usually not majority) part of the firm and thereby a considerably influence.

Thus, the business strategy is to select and invest money in a lot of different, potentially very profitable, but high risk companies. The investment spread allows

the venture company to support high risk companies. The investments are in most cases on a long-term basis, i.e., at least 7–8 years.

The main advantage from the small companies point of view, is that the return on the money invested is not expected now in form of dividens or interests, but rather as long-term growth in corporate value. More capital can be kept within the company financing its different investments. So, venture capital is a cheap way for the entrepreneur of financing growth, but at the price of loss of influence. In most cases the venture capital firms elect one or two members of the board. One important prerequisite for an efficient venture capital market is the existence of small business stock exchanges, through which the venture capital company can capitalize the value of its shares in due time.

Apart from the primary role as supplier of capital, most venture companies also intend supplying the small companies with managerial and marketing expertise.

The first venture capital companies in the Nordic area were established in Sweden during the 1970s, but the development did not take off until 1982, when the taxation on dividends from companies not listed on the stock exchange was reduced and the "OTC"-list established. Today there are ca. 55 private or public companies with a total capital of more than 1.5 billion SEK in Sweden. Most companies are small with a capital of some 10 million SEK. The companies have invested in 500–600 different projects.

Recent studies of the Swedish venture capital market report that the national venture capital companies in Sweden mostly buy a smaller owner share than 25 %, while the regional companies in many cases have acquired a majority part. The typical receiver company is less than 3 years old, producing industrial input- and investment goods or operating within high tech areas like computers, electronics and communications. In most cases the venture capital company investment was less than 1 million SEK.

In Norway the first venture capital firms were established in 1983. The number increased rapidly and has reached ca. 35 in the middle of 1986. The companies administer funds exceeding 1500 million NOK. The companies have become minority shareholders in some 250 different projects. The typical receiver company is operating within the information technology sector (computers, micro-electronics, information systems etc.). However, many are active in areas like engineering, finance and aquaculture. In Denmark there exists some 10 larger venture capital companies with funds exceeding 750 million DKK.

In Finland venture capital companies have not played any significant role. The reasons relate mainly to the scarcity of investors who are willing to invest on a long term basis and the difficulties to liquidate the investments. The latter difficulty is diminishing with the emergence of the OTC-market. In Finland there are today about 20 venture capital firms, with total funds of 300 mill. FIM (1985). Their strategies can be broadly characterized to buy medium-sized profitable firms with favourable markets to achieve market-dominance and to introduce them into the Stock Exchange or to buy low profit firms and reorganize them into one profitable unit.

A common Nordic venture capital company – Euroventure Nordica - was formed during 1985/86 as a practical result of the "Gyllenhammar-Sundqvist" group's work.

As the venture capital companies still only have been in operation for less than 10 years, it is much to early to evaluate their effects. The recent development in Sweden (the oldest Nordic market) has since 1984 been rather calm, and the rapid expanison has come to a stop. The market has been characterized by consolidation and restructuring, and a somewhat changed investment pattern can be noticed. A larger share of total investment is going to big, well established companies and to financial activities. The difference between venture capital companies and investment/financial companies has become less distinct. This may be due to limitations in the capital base of some venture capital companies, and for some companies the cash-flow situation is pretty tight.

4.4 Summary

The equity market is one of the main markets for supplying capital to the corporate sector. During the 1970s, the importance of the market was in this sense rather limited in comparison to debt financing.

During the 1980s the picture has changed following the increased real interest rates on debt financing, the rapidly increasing demand for shares, higher share values and the establishment of special small company stock exchanges and venture capital companies. Thus, equity financing has become more competitive. This was for many companies absolutely necessary as a continued decrease in solidity because of extensive debt financing wasn't possible in order to maintain growth. The growing importance of the equity market as a supplier of risk capital for industrial growth can be illustrated either by the amounts of new share issues, or by the number of companies entering the stock exchanges. On both accounts the development during the last years has been very fast. Especially the establishment of small business stock exchanges has made it possible also for small and medium-sized companies to obtain new risk capital.

In all Nordic countries there was a "stock exchange" peak around 1972–75, followed by a decline up until 1980–82. Since 1980 the growth has been extremely rapid, foremost due to a favourable economic development, higher profits and increased expectations, increased liquidity and a vigorous growth in the foreign demand for Nordic shares. Other important factors have been changes in tax rules and liberalized capital control regulations. The factors explaining the vigorous development are very much the same in all Nordic countries. Country specific factors, such as changes in tax rules, seem to have acted as catalysts and "triggered off" the development. Furthermore, the linkages between the Nordic markets, and between the Nordic and international markets seem strong.

The development in the different countries have been very similar. However, there are some differences. For example, Finland and Norway have had, in terms of stock exchange turn over and market value of shares, considerably more fluctuations than Denmark and Sweden. The Swedish and Norwegian exchanges have been more "booming" concerning the number of firms entering the stock exchange.

In all countries except Norway, the main reason for exiting the stock exchange has been mergers or acquisitions between stock exchange companies. Very few companies have been forced to exit because of bancrupcy. In Norway, the international shipping crises forced almost 40 shipping companies to exit the stock exchange.

5. Conclusions

5.1 Policy implications of liberalization

The changes that have taken place in the financial markets over the last decade, and in particular since the early 1980s, have wide implications for economic policy in the Nordic countries. The new policy setting results from changes in the economic climate, as well as from an evolution of the monetary policy instruments.

First of all, the basic policy problems confronting the Nordic countries have changed during the last 5–10 years. Most notably, public deficits are now under control, and inflation is low. These factors influence many fundamental features of the financial markets: overall demand for credit, real rates of interest, etc. The evolution of financial markets have been accompanied by new economic challenges. For instance, fundamental changes have occured in the first half of the 1980s with respect to borrowing/lending position of various sectors, and the distribution of wealth and income. These developments may be attractive from some political points of view, but they also run counter to other established political ideals.

Second, the changing market conditions alter the availability of policy instruments and the effectiveness of traditional instruments. Changes occur particularly in the area of monetary policy, and this has important consequences for the role of fiscal policy, incomes policy etc. Furthermore, the legal and institutional framework of financial activity is being reconsidered and updated in all the Nordic countries. In the following discussion attention will be focused on this instrumental question.

Exchange rate policy

Except for Denmark, all the Nordic countries presently conduct a partially fixed exchange rate policy with the exchange rate of the national currency being determined by a basket of international currencies. For all three countries, the U.S. dollar weighs prominently in the baskets, and the three countries may be considered as belonging to the dollar-dependent group of currencies.

Denmark, on the other hand, is a member of the European Monetary System (EMS) where exchange rates and margins for fluctuations are negotiated and supported by a concerted-action system. The EMS currencies are heavily dominated by the West German Mark, and may be considered as belonging to the DM-dependent group of currencies.

During the 1970s and 1980s all the countries have used occasional devaluations to adjust export/import performance. This type of policy becomes increasingly difficult to manage as liberalizations of financial markets, and especially of currency regulations are introduced. Intergrated financial markets are characterized by extensive short term capital movements. Thus, it is almost impossible for an individual country to defend a given exchange rate of the national currencies.

The question confronting the Nordic countries is then: For how long can continued financial liberalizations be combined with a traditional exchange rate policy?

So far, the most radical adjustment to these new conditions appear to have taken place in Denmark, who has embarked on a policy of stable exchange rate of the krone (within the EMS). By eliminating the possibility of devaluations, Denmark had to rely on alternative policies. Danish fiscal and incomes policies have been tight in the 1980s. Despite a deteriorating balance of payments through 1985–86, the policy of stable exchange rates (and a moderate revaluation within the EMS) has been upheld (so far until September 1986). The confidence in the Danish krone has been surprisingly strong, allowing for gradually declining interest rates during most of the period. (In the second quarter of 1986 the decline stopped and interest rates increased slightly during 3. quarter). However, the future success of this policy is widely questioned, and if the external account is not quickly improved, it remains an open question for how much longer confidence in the currency can be upheld. Should confidence erode, then considerable upward pressure on domestic interest rates and eventually major adjustments of the exchange rate of the Danish krone may be difficult to avoid.

Norway, on the other hand, is a country which has been rather prone to the use of devaluations as a central part of her exchange rate policy. With the close relation between the NOK development and the US dollar development (due to the considerable revenue in US dollar from petroleum and shipping) the exchange rate of the NOK must occasionally be adjusted to control the export/import performance with respect to the European economies. Extensive short-term capital movements, associated with the swap and foreign exchange forward markets, make it difficult to avoid exchange rate adjustments.

Interest rate policy

The liberalization and internationalization of financial markets should in principle bring about a closer relationship between international and domestic interest rates, and the increased competition will in principle tend to result in lower interest rates. However, these relationships are only partially reflected in actual developments, as interest rates have been influenced by other and more specific factors such as capital control measures etc. (in several respects, the theoretical relationship outlined above has proven to be contradicted by reality).

In the previously regulated economies of Sweden, Norway and Finland, changes in financial markets have resulted in increases of the interest rates. In Denmark, the opposite development has occured, as previously high domestic interest rates have fallen, due to the substantial decline in international interest rates in 1982. Since then, the interest rate differential has gradually declined as a result of increased confidence in the Danish currency accompanied with liberalization of capital controls.

From a policy point of view there has been a growing interest in a differentiation of monetary policy instruments that would allow a sophistication of monetary policy. Not surprisingly, the problems of improving the monetary policy instruments started in Denmark, the financially most liberalized Nordic country, but the other countries have all faced the same type of challenges in the 1980s. One important problem has been to combine the long-term objective of obtaining and keeping low interest rates to promote investments, with the short-term objective of maintaining a high interest rate to promote the necessary private capital import, induced by the external-account deficit. In all Nordic countries, the creation of various submarkets

has improved the possibility of meeting both purposes by allowing volatile (and generally high) interest rates on short-term maturities, without strongly affecting the interest on long-term maturities. Thereby, various financial submarkets may serve different policy objectives separately.

Internationalization and autonomy of monetary policy

The recent liberalizations in financial markets have brought foreward the question of autonomy of monetary policy – particularly in Denmark. The alleged loss of autonomy occurs when the policy choice in setting domestic interest rates and credit availability is limited.

However, autonomy of monetary policy in most of the Nordic countries has in fact been limited in varying degrees for decades due to the external and fiscal deficits. These imbalances restricted the room for policy manoeuvring severely.

In Denmark private capital imports were encouraged in order to finance the external deficits by maintaining interest rate differentials vis-a-vis international markets. Fiscal deficits in Sweden and Denmark forced the monetary policy to accommodate the heavy state borrowing – with consequent dangers of inflation and/or crowding out.

Thus, restrictions on policy autonomy have existed in various forms for many years. However, the novel feature in current restrictions on monetary policy autonomy is the deregulation of both domestic markets and capital controls.

The greater dependence on international markets is visible e.g. with respect to interest rate policy. Small, open economies with fixed exchange rate regimes will find it difficult to lower the rates of interest to enhance domestic investment because free capital flows will tend to equalize domestic and international rates. Similarly, controlling overall credit availability (in particular for specific purposes such as private consumption) becomes almost impossible. In countries, where private consumption induces a growth in imports the need for direct control of consumption may be a necessity.

Naturally, the reduced autonomy of monetary policy will increase the burden placed on other policy instruments. Fiscal policy and incomes policy must play a stronger role in regulating overall activity and price developments. With respect to enhancing structural development and improving international competitiveness, incomes policy and industrial policies are natural alternatives. Taxation policy occupies a central role as a successor of certain parts of the traditional monetary policy.

Changes in the financial markets and in the monetary policy options may have limited the policy choices available to a yet unknown extent. In many ways, the limitations may even be welcomed as incentives for policy makers not to create large imbalances or otherwise divert from the paths that are compatible with freely functioning financial markets.

However, should serious imbalances develop, the reduced autonomy of monetary policy may prove to be a very inconvenient restriction on policy choices. Thus, discretionary rules and selective policies – also in the areas of financial intermediation – pose a temptation to politicians, and with moderate growth

prospects for the rest of the 1980s, there is a risk that such policies may be pursued.

Possible re-regulation

Despite the general and strong trend of liberalization, integration and sophistication of the Nordic financial markets, some doubts as to the future development may be advanced.

The process of liberalization and integration seems to create two types of difficulties for the policy authorities: first, the process of change itself is difficult to administer and it may result in *unforeseen difficulties and abrupt adjustments*. To bring financial developments back under control, temporary reversals of recent liberalization measures have been wittnessed in all 4 Nordic countries since the late 1970s. For instance, Denmark (1979) and Norway (1984) were both forced to suspend the access for foreigners to buy domestic bonds or shares. In most cases, the reintroduction of restrictions were specifically declared to be temporary as the underlying difficulties were seen to be temporary, caused by passing complications of the very rapid introduction of a new financial regime.

A second and more fundamental control problem occurs when the liberalized financial markets cause *long-term problems in the allocation of resources*, e.g. massive out-flux of capital, volatile or very high interest rates etc. In the financially most liberalized countries, the general availability of policy instruments is affected, and depending on the economic tasks confronting these countries, re-regulation may seem inadvertible to redress basic economic problems and to conduct stabilization policy. Examples are primarily available from Denmark and Sweden where measures have already occured in the areas of capital controls and overall credit availability. In particular for private consumption, control of credit facilities for this purpose are likely to develop in the direction of quantitative and discretionary intervention. In Denmark, several quantitative re-regulations have been introduced in 1985–86, aimed directly at consumer credit and at mortgage credit availability. However, the effect of such measures is generally acknowledged to be low (due to the integration of financial markets and the existence of unregulated credit markets acting as buffers) but alternative avenues of curbing private consumption have either been less attractive or not available.

Additional potential for re-regulation may be found in long-term structural policies, such as credit support for selected sectors, employee ownership funds and their investment patterns etc.

While it is still true that the general trend in the Nordic countries goes in the direction of further liberalization and integration of the financial markets, the possibility of re-regulatory intervention is not very remote – particularly in the financially most internationalized countries, where the long-term control problems are still unknown.

Furthermore, the recent history of financial liberalization has been favoured by the international economic recovery. A deterioration in the international economic climate may bring about problems in the Nordic countries that presently appear remote.

5.2 Changes in the financial markets – implications for the corporate sector

When discussing changes in financial markets and their implications for the corporate sector, we must keep in mind that the characteristics of this sector vary between the Nordic countries with regard to productivity, technological competence, economic performance, market orientation and future outlooks. However, the financial aspect seems to gain increasing importance for corporate sector development in all countries. This is only natural since the process of financial market liberalization originates from the corporate sector. Evidence for this can be found in the creation of various "grey markets" in the late 1970s in order to bypass existing, but outdated, regulations.

In this context, effects on equity and liquidity positions, corporate investment strategies and more liberalized capital movements, seem to be of special interest for corporate sector development. Most of the financial market changes with direct implications for the corporate sector seem to have emerged in the equity market. However, a growing integration of the various financial markets (notably the money market, the capital market and the equity market) makes it necessary to consider the entire financial market when discussing corporate sector implications.

Corporate sector equity position

The vitalization of Nordic equity markets, which has taken place in the 1980s, has clearly improved the equity position of Nordic companies. Increasing share prices and turnover on the stock exchanges have made it more easy to generate new equity capital. Introduction of small business stock exchanges, and a growing venture capital industry, have supplied small and medium sized companies with new risk capital. This improves the financial position and strenghtens the growth potential in fast developing industries.

One negative effect of the rapid development of the Nordic equity markets may, however, be an increasing focus on short-term profit (as reported in quarterly returns) at the expense of long-term considerations. The development of the Nordic equity markets seems to move more in the direction of U.S. standards, than towards the more long-term equity markets in West-Germany and Japan. This may not be the best way to stimulate corporate sector growth in the Nordic countries.

Structural changes in the corporate sector

A result of the stock exchange development in the 1980s is a more unstable structure in the corporate sector. One of the main qualities of a well functioning equity market is to make it possible to value companies adequately. It is quite evident that the equity market development in recent years has contributed positively in this respect.

This has opened up for more mergers and aquisitions, both between companies listed on the stock exchange, and between stock exchange companies and un-listed companies. We have also seen a growing number of company spin-offs where company units are established as independent companies. This corporate sector restructuring should be seen as a positive result of the financial market liberalization. However, corporate sector restructuring may imply more unstable

labor relations, because some employees find their jobs threatened. This may be balanced by the increasing degree of employee ownership of shares in many Nordic companies. Employee ownership should be viewed as a positive effect of the equity market development. Company employees may become important participants in the development of Nordic firms in the future.

Corporate sector liquidity position

Even though the equity position of the corporate sector is improving, corporate liquidity positions in some countries seem to deteriorate. This is partly due to an unsatisfactory economic performance in some industries, but may also be viewed as an effect of financial market liberalization and deregulation.

Traditionally the Nordic countries (except Denmark) have pursued a monetary and credit policies aimed at low interest rates and quantitative rationing. These policies have gradually been abolished in all countries, resulting in expanding credit demand and increasing interest rates. This has put a heavy burden on companies with regard to payment of interest and installments on corporate debt.

All in all the net financial result in the corporate sector therefore may diminish. Moreover, excess liquidity seems to be concentrated in large volumes in a rather limited number of Nordic companies. These companies experience high financial flexibility and are becoming increasingly important as institutional investors. In Norway, for instance, industrial corporations have become the dominant shareholders, and their role in the equity market is increasing. Moreover, some of the largest Nordic companies, like Volvo and Norsk Hydro, have established their own banking and investment companies, which are pursuing large-scale operations in the financial markets.

A more developed market for short term financial transactions has made cash management more important for the corporate sector. Those companies which possess financial expertise, may improve their economic results considerably by participating in the money market. The number of companies participating in this market is increasing, but it takes time and resources to aquire the necessary skills. This seems to increase the difference between the large companies and the smaller ones with regard to financial performance.

Availability of special corporate financial services has also increased strongly. A large number of new financial institutions, aimed at serving new and growing corporate sector needs for financial assistance, have been established. Particularly, leasing and factoring have been strengthening their position in the financial market. The creation of a leasing industry has, however, also implied a need for public control in this sector. In Denmark, for instance, taxation of leasing has become an important policy control instrument.

Allocation of investment capital and corporate investment policy

When we are discussing implications of more liberalized financial markets for allocation of investment capital, we are in fact dealing with various kinds of investment options.

One is the question of real versus financial investments. This is closely linked to the development in the nominal and the real rate of interest, but also to the taxation of real versus financial investments. Traditionally, there is a tendency for tax rules to encourage real investments, but in periods with high interest rates financial investments seem more profitable. Denmark experienced this particularly in the period of high interest rates, and the other Nordic countries have been facing the same development when interest rates started rising as a result of the financial market deregulation and liberalization in the 1980s.

On the other hand, tax rules in all Nordic countries today favour investment in the own company instead of transferring resources to other, maybe more efficient, parts of the corporate sector. There is, thus, a risk that capital is locked into previously successful, but today stagnating companies and not into growth industries. The growth of the venture capital industry in most Nordic countries may improve this situation, if the venture capital companies have the necessary financial strength, the managerial and technological competence, and a strong market orientation.

The emergence of more efficient equity markets and a venture capital industry, is very important for the distribution of "hard" versus "soft" investments. During the last decade we have witnessed a shift from material to immaterial resources in many industries, especially in the fast growing high technology companies. Knowledge intensive operations, such as marketing, R&D and different kinds of services have become more important. These "soft investments" have to be financed by equity capital, either internally generated through operating profits, or by supply of new risk capital. In this respect the liberalization and vitalization of the Nordic equity markets are of great importance.

With the liberalization of Nordic financial markets, we have developed more sophisticated financial instruments. Efficient utilization of these new financial opportunities require corporate investments in new equipment and qualified personnel. This is more easily acceptable in larger companies because financial economies of scale seem to exist. Large companies may therefore improve their financial position, while smaller ones with scarce resources and less opportunities of using the potential economies of scale, may have problems adjusting to the rapid financial market development.

Financial market integration and increasing capital mobility

The liberalization process has meant an internationalization of Nordic financial markets, most notably the money and equity markets, but also the capital market to some degree. This makes it easier for the corporate sector to aquire capital from the most profitable sources, either domestic or foreign. The corporate sector is also to some degree (in Denmark to a large degree) allowed to invest capital abroad if this seems more profitable. However, capital control regulations still restrict financial investments abroad for many purposes. Sweden is perhaps the best example in this respect. Regulations on Swedish capital exports are still among the strictest in the industrialized countries.

One effect of a closer link between Nordic financial markets and foreign capital markets may be a reduced investment basis for domestic purposes. Such outflux of capital for financial investments abroad has been observed in most Nordic countries in the 1980s.

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APPENDIX

PERSONAL INCOME AND WEALTH TAXATION OF FINANCIAL ASSETS AND REAL ESTATE.

The following should be observed in connection to the matrix on taxation of income from financial assets and real estate:

The Tax Reform in Denmark

As of January 1st 1987, the tax reform adopted in 1985 comes into force – with some transitional provisions.

The basic features of the reform is the separation of *personal income* (wages, pensions etc.) and *capital income*. The latter will include *net* interest income, dividends and rental value. Personal income will still be taxed with a progressive rate (although lower than previously), but capital income will be taxed at a flat rate of approximately 50 % (for income above 200.000 DKK the rate will be 62 %).

If interest payments exceed interest income, the income tax will be reduced by approximately 50 % of the deficit.

Taxation of financial assets in Finland

Capital income (interest income, dividends, capital gains and rental income) is as a rule taxed progressively (joint taxation by the marginal rate of the spouse with the highest income) in the state taxation and proportionally in the municipality taxation.

For the financial securities, the deduction is 3.800 FIM, and for the rental income from housing 6.000 FIM, the total tax free capital income being 6.000 FIM (1985 figures). Interest payments are deductible untill 25.000 FIM per year, of which at most 10.000 FIM per year on loans for other purposes than the purchase of a house.

Personal income tax treatment of financial assets and real estate

	DENMARK	DENMARK (AFTER TAX REFORM)	FINLAND	NORWAY	SWEDEN
Bonds:					
– Interest income:	Taxed as ordinary income.	Enters into calculation of overall *net* interest income, which then enters into capital income.	Government bonds are tax free, corporate and mortgage institutions [1]) bond yields are taxed as ordinary income.	Taxed as ordinary personal income. Government premium bonds are tax free.	Taxed as ordinary income. Government lottery bonds are tax free.
– Capital gains:	Tax free only if the nominal interest rate of bonds at the time of issuance meets a minimum rate, specified by the monetary authorities. If bonds are issued with nominal interest rate below market level, the consequent larger capital gains are subjected to income taxation.	Taxed according to previous rules.	Included in taxable income unless the security is held for more than 5 years.[2])	Tax free at present, but new rules are under consideration by the authorities.	All capital gains are taxed as income if the bonds have been held for less than 2 years – when held for more than 2 years, only 40 % of the gains are taxed.
Shares:					
– Dividends:	Taxed as ordinary income. Prior to personal taxation, corporate tax has already been levied on profits (50 %). This double taxation is temporarily aleviated by a tax rebate of 25 % of the pre-tax dividend.	Dividends enter into capital income.	Taxed as ordinary income.	Taxed as ordinary income by the state, but tax free with regard to municipality tax. 40 % of personal savings in approved equity funds, max 2000/4000 NOK per individual/family, are deductible in income.	Taxed as ordinary income. Saving through special bank funds is tax free within a maximum of 800 SEK per month.
– Capital gains:	Tax free, if shares have been in the possession for no less than 3 years. Commercial traders are taxed on capital gains and may deduct losses.	Taxed according to previous rules.	Tax free if the shares have been in possession for no less than 5 years.[2])	Tax free if shares have been held for no less than 3 years, otherwise taxed at a flat rate of 35 %. Losses are deductible in gains.	Taxed at the same rules as for bonds, i.e. 100 % or 40 % of the gains are taxed according to the time of possession. Losses are deductible against gains.

	DENMARK	DENMARK (AFTER TAX REFORM)	FINLAND	NORWAY	SWEDEN
Bank deposits:	Interest on ordinary bank deposits are included in the tax base as any other interest earnings. In addition, many different deposits on special terms exist with favourable tax treatment, e.g. personal pension savings, investment savings etc.	interest income enters into calculation of overall *net* interest income, which then enters into capital income. Deposits on special terms continue unaffected.	As a rule tax free.	Interest exceeding certain amounts, in 1985 this was 2100/4200 NOK for individuals/families, are taxed as personal income. 40 % of savings on special bank accounts, max 4000/8000 NOK for individuals/families are deductible in personal income tax.	Interest taxed as ordinary income. Tax free savings through bank funds are possible within 800 SEK per month.
Real estate:					
– Income tax:	Based on a calculated *"rental value"*. The tax base is the market value of the property (both land and buildings), and the tax rate is progressive with one kink at 0.85 mill DKK. Property value below this sum is taxed at a rate of 2.5 % and above that at a flat rate of 7.5 %.	*"Rental value"* enters into capital income.	Rental income is included in taxable income.	Residental premises are income taxed on basis of a calculated *"rental value"*, at a flat rate of 2.5 % of the taxable value of the premises.	Depending on the debt situation, ca. 2–4 % of the taxation value is taxed as income.
– Capital gains:	Tax free if the property has been in posession for no less than 2 years – losses cannot be deducted. Otherwise, capital gains are taxed as income. Commercial traders are taxed on capital gains and may deduct losses.	Capital gains are taxed according to previous rules.	Included in taxable income unless the property is held for more than 10 years.[2]) Gains on flats in apartment houses are tax free when held for more than 5 years.	Tax free if the property has been in possession for at least 10 years or in personal use the last 5 years. Tax freedom is also granted if the gain is reinvested in a new property within 4 years. Rules will be simplified in 1987.	Taxed as income depending on the number of years the estate has been owned.

[1]) Government has occasionally granted a tax free status to bonds issued by mortgage institutions.
[2]) If capital gains exceed 1 mill. FIM, 20 % of the gains are included in taxable income. Acquisition value is accepted at least to 50 % of the sales price

Personal wealth taxation of financial assets and real estate

	DENMARK	FINLAND	NORWAY	SWEDEN
	Wealth tax is levied on wealth above 1.3 mill DKK with a flat rate of 2.2 %.	As a rule, the net wealth of households is taxed progressively if the tax value exceeds 800.000 FIM (1985 figures).	Wealth tax by municipalities are levied on net wealth exceeding 60.000 NOK, at a flat rate of 1 %, and by the state on net wealth exceeding 110.000/ 140.000 NOK (1985 figures) for individuals/ families at progressive rates varying from 0.2–1.3 % (1985).	Tax is levied on all net wealth exceeding 400.000 SEK. The tax rate is 1.5 % in the interval 400.000–600.000 SEK, 3.000 SEK +2 % in the interval 600.000–800.000 SEK, 7.000 SEK +2.5 % in the interval 800.000–1.800.000 SEK, and 32.000 SEK +2.5 % for wealth exceeding 1.800.000 SEK.
Bonds:	Market value enters into the tax base of wealth taxation.	Government bonds are tax free. Corporate bonds are included in the tax base for wealth taxation at current valuation. Bonds issued by mortgage institutions are taxed as corporate bonds, but the authorities have occassionally granted tax free status.	Included in tax base of wealth taxation. The current value is used for bonds quoted on the stock exchange; for other bonds the estimated sales value are used as market value.	Valued according to market values per 31st December.

	DENMARK	FINLAND	NORWAY	SWEDEN
Shares:	Market value enters into tax base of wealth taxation.	Included in the tax base of wealth taxation at 80 % of current valuation for companies listed on the stock exchange. Shares in companies not listed on the stock exchange are mostly undervalued.	Market value enters into the tax base of wealth taxation. The current value is used for shares quoted on the stock exchange. Shares in companies not quoted, are given market values by the authorities. Usually these values are more favourable.	Valued according to market values per 31st December. Small company shares have a more favourable valuation.
Bank deposits:	Nominal deposits enters into tax base of wealth taxation.	As a rule tax free.	Nominal deposits by 31st December enter into the tax base of wealth taxation.	Valued at nominal values of 31st December each year.
Real estate:	Market value enters into tax base of wealth taxation. Additionally, property tax is levied (on land only) by municipalities at varying tax rates (averaging 1.0–1.5 %).	Included in tax base of wealth taxation, but usually undervalued (approx. 50–75 % of current values).	Taxation value (approx. 30–50 % of market value) enters into the tax base of wealth taxation. In addition, property tax is levied by municipalities at varying tax rates (averaging 0.3 % of taxation value).	Valued according to taxation value (approx. 75 % of market value).

Labor Market Flexibility in a Nordic Perspective

by Enrico Deiaco, IUI

Abstract

Are Nordic labor markets less flexible than their European counterparts? Do inflexible relative wage structures and/or inadequate institutions on the labor market explain differences between countries? What are the similarities and differences in a Nordic perspective?

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1. Do Nordic Labor Markets Need More Flexibility?

Resource movements between sectors are vital for overall economic efficiency. The labor market has two essential tasks in promoting such structural adjustment. The *first* relates to the allocation of people from declining industries/occupations to expanding ones. The *second* is directed towards education and training, e.g., giving new entrants basic knowledge and retraining those already working on the labor market.

This paper examines Nordic countries from the first point of view; namely, do wages adjust rapidly and smoothly to clear the market? Our primary concern is with the micro-economic wage flexibility across industries and its connections to the relative growth of employment. We will only touch on the second problem, the effectiveness of institutions in providing training opportunities.

It seems to be generally agreed that European labor markets have been relatively unsuccessful in meeting this first task, as compared to the Japanese and U.S. experience in the 70s and 80s. Some have even argued that the fast growth of jobs in the U.S. is attributable to wage flexibility in terms of both real-aggregate wage-adjustments (macro-flexibility), and in terms of relative adjustments across sectors (micro-flexibility).

The rigid wage structure and worsened employment records of the Nordic countries has been debated for many years (see Calmfors et al., 1985 for Sweden). Critics of the present system have suggested, for example, a more decentralized wage bargaining system and the inclusion of marginal wage bonuses/premia in salary negotiations. The purpose is evidently to make wages more flexible in response to changing economic circumstances.

These proposals are motivated by the idea that there is some kind of relationship between relative wages and employment performance. However, there is still a wide disagreement, both theoretically and politically, on the actual role of wages in contributing to employment growth. In the end the question is empirical.

What about the pattern of relative wage adjustment and employment in the Nordic countries? The Swedish approach to labor market behavior is by definition a denial of the allocative role of relative wages. This denial of the invisible hand in the labor market has simultaneously provided a case for narrowing the wage structure by institutional means, and leaving the allocation of labor to government labor market programs. It certainly differs a great deal from the U.S. system where the formulation of policy has proceeded on the basis of an underlying presumption that primary reliance should be placed on the market place.

Do the other Nordic countries conform to this general approach to the system of industrial relations? Can they be treated as homogeneous? Sachs' and Bruno's (1985) classification of national labor markets according to the degree of centralized bargaining – or corporatism – places Sweden, Denmark and Norway at the top of the "corporatism index", and Finland in the middle range. This suggests that there are interesting institutional differences in the Nordic countries. And, as we shall see later, these differences also exist in regard to historical experiences of unemployment and employment performance.

The primary objective is to investigate the relation between the relative wage structure and pattern of sectoral employment. Has the existing wage structure hindered, fostered and/or been neutral to changes in aggregate sectoral employment?

In order to answer these questions we will identify the determinants of nominal wages and employment across manufacturing industries. Basically the research methodology follows the one in Bell and Freeman (1985) and OECD (1985), although the ambition is more modest, given the quality of data. This paper can be seen as a first attempt to discuss, in a Nordic perspective, the questions this new research introduces. We are interested in both similarities and differences: Are Nordic nominal wages inflexible? Is there a relationship between relative wage changes, sector- specific variables and employment adjustments? How does this compare to other European countries? Other questions relate to institutional differences in the Nordic countries. Does the lower degree of centralized bargaining lead to greater flexibility in Finland and Denmark? How does this affect employment performance?

This special study has been organized as follows: Section 2 gives some general statistics of labor market performance in the Nordic countries. This section also studies past and current imbalances on the labor market. We conclude the section by asking whether imbalances on Nordic Labor markets are due to deficient relative wage flexibility and hence poor employment-generating capacity. In order to analyze the question more thoroughly a theoretical framework for comparison is discussed in Section 3. Section 4 studies the development of inter-industry wage-structure and the determinants of changes in relative wages and employment. In the last section (5) some policy issues are discussed.

2. Indicators of Labor Market Performance

A dynamic economy will always simultaneously experience a process of job losses compensated to some degree by growth of new employment. Various imbalances will appear as a result. Labor market imbalances are caused by lack of instantaneous price-adjustments in factor and product markets.

Following the examples given by Soete and Freeman (1984), demand-deficient unemployment is caused by lack of price adjustment on factor and product markets. Frictional and skill-related unemployment is caused by insufficient wage and skill-related adjustments of wage differentials. Finally, structural unemployment is due to the rigidity of relative input prices and insufficient capital-labor substitution.

The purpose of this section is to survey Nordic labor markets from an aggregate demand and supply perspective. The analysis is rather more diagnostic than explanatory in this respect. In the first section I will measure labor market tightness in the 80s compared to the development in the 60s and early 70s. The second section separates the structural and cyclical component in past and present unemployment figures by applying the "Okun-analysis".

2.1 Measuring Labor Market Tightness

Do growing unemployment rates of the 70s and early 80s indicate slack on Nordic labor markets? Table 2.1 shows a variety of indicators measuring labor market tightness over the postwar period in the Nordic countries, such as the rate of unemployment, employment in manufacturing and private services and employment to population ratios. Also the size and significance of any time trend in some of the series are shown.

The unemployment and employment figures show a worsened performance in almost every country after the first post-oil crisis and the early 80s. There are, however, some differences across the Nordic countries. Unemployment is much lower in Sweden and Norway compared to Denmark and Finland. On the other hand, employment to population ratios have developed more favorably in Finland. Turning to employment growth (manufacturing and private services) in the Nordic countries, Denmark and Finland are more successful than Sweden and Norway (see Table 2.1).

Table 2.1 Indicators of labor market tightness in Nordic countries

	Unemployment per cent (1)				Employment in private services 1 000 (2)				Employment in manufacturing 1 000 (3)				Employment/ population (2+3) per cent (4)			
YEAR	DK	SF	NO	SV	DK	SF	NO	SV	DK	SF	NO	SV	DK	SF	NO	SV
1970	0.7	2.0	–	1.5	798	688	–	1 328	569	520	–	1 055	28	26	–	29
74	3.5	1.8	1.5	2.0	808	720	–	1 344	549	590	–	1 040	27	29	–	29
78	8.0	7.3	1.8	2.2	829	763	–	1 380	500	546	395	980	26	27	–	28
80	7.0	4.7	1.7	2.0	816	818	–	1 390	490	592	388	981	35	29	–	28
82	9.8	5.9	2.6	3.1	802	826	–	1 405	470	581	383	915	25	29	–	28
84	10.5	6.2	3.3	3.1	840	861	–	1 423	492	562	363	894	26	29	–	28
85	9.2	6.3	2.5	2.8	873	889	–	1 444	524	557	365	908	27	29	–	28
Annual average growth rate: (per cent)																
Period																
1963–80	8.8	7.7	–	2.0	1.7	1.8	–	0.7	0.2	2.6	–	−0.3	–	–	–	–
1974–80	13.1	10.2	0.0	1.2	0.2	1.9	–	0.5	−1.6	0.8	–	−0.8	–	–	–	–
1980–85	6.1	7.4	5.0	7.7	1.2	1.4	–	0.7	1.1	−1.0	−1.2	−1.4	–	–	–	–

Note: Unemployment figures refer only to open unemployment. For those participating in labor market programs, see Statistical Appendix in this volume.

Official statistics on employment in Private services in Norway are calculated as full time man-years worked (1000). The relevant figures are: 587 (1975), 630 (1978), 649 (1980), 661 (1982), 674 (1984), 703 (1985).

Source: See Appendix.

Thus, labor market performance after the first oil crisis indicates more slack on Nordic labor markets. The short general overview presented in Table 2.1, however, hides quite a complex relation between variables, such as general economic performance, different economic policy strategies and the development of relative wages. A first step in disentangling the different causes behind the above figures would be to separate the cyclical and structural component in unemployment and employment figures. Are the differences in labor market performance due to cyclical forces or have structural imbalances – rooted in wage-rigidity – increased on Nordic labor markets?

2.2 Structural vs. Cyclical Unemployment – A Classification

A common starting point when trying to understand current imbalances on the labor market is to determine whether these imbalances are due to (1) a shortage of demand for employment (Keynesian), (2) structural imbalances (or classical) due to inflexible labor markets and (3) long-term dynamic imbalances, caused by rapid technological development. Following Soete and Freeman (1984) we will separate these different explanations by applying the Okun-analysis in order to classify past and current imbalances.

There is clearly no easy way to separate the different unemployment categories. Soete and Freeman note that while this method can be analytically useful, it raises many empirical questions, particularly in quantifying these categories, since they to a certain extent overlap.

But whatever the difficulties involved in separating the various causes behind past and current unemployment/employment development, the distinction between cyclical and structural causes is important for understanding the scale and nature of present labor market problems. It is especially useful as a guide to the choice of policy strategies, particularly the issue of increased relative wage flexibility.

2.2.1 Okun-Analysis – Cyclical or Structural Imbalances?

The Okun-analysis attempts to separate the various unemployment components by relating capacity utilization to open unemployment.[1]) The idea behind the Okun-analysis is quite simple. At normal (average) level of capacity utilization unemployment is certainly not Keynesian; it is skill-related and/or structural. A movement to the left along the Okun-line (hypothetical) represents an increase in demand deficient unemployment. A shift in average capacity utilization between periods can be interpreted as an increase in skill-mismatch and structural unemployment. If the Okun-line shifts upwards, Soete and Freeman argue, this can be seen as an indicator of a structural break on the labor market. This can be tested by regressing capacity utilization on unemployment. An increased difference between observed and predicted unemployment rates can be used as an indicator of the structural break.

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[1]) We have not included those participating in labor market programs. There is no consensus among economists under which circumstances these should be included in official unemployment figures. Whenever the purpose of the analysis is focused on stabilization, good reasons seem to exist for including people participating in labor market programs. Since the focus in the present analysis is whether structural imbalances – rooted in wage rigidity – exist, only the openly unemployed are included.

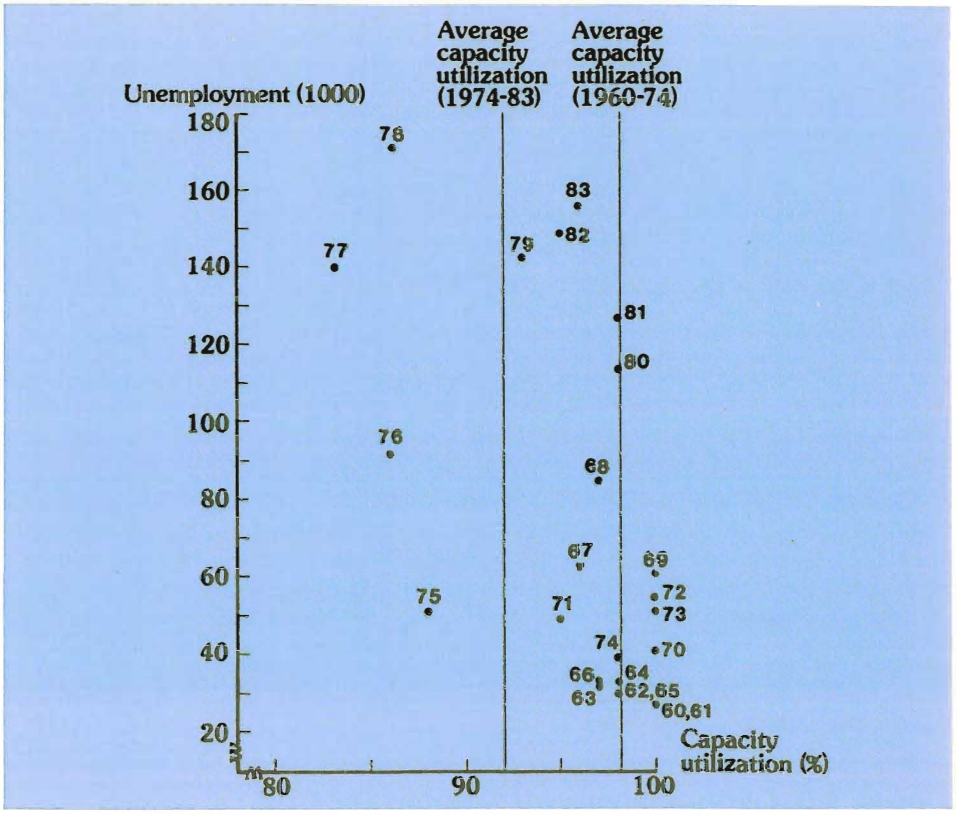
Table 2.2 Linear estimates of the Okun line

Country	Period	Intercept	Capacity utilization	R^2	Residuals in per cent									
					1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Finland	1960–84	587.6 (167.6)	−5.36 (1.74)	0.30	−0.38	−0.02	0.26	0.37	0.45	0.56	0.47	0.53	0.60	–
	1960–74	291.1 (102.5)	−2.52 (1.06)	0.27										
	1974–84	153.9 (157.7)	−0.19 (1.71)	0.01										
Norway	1977–85	88.3 (26.9)	−1.93 (0.99)	0.35	–	−0.65	−0.90	−0.26	−0.03	−0.29	2.58	0.09	0.42	0.41
Denmark	1970–83	881.5 (1 455.49)	−742.7 (1 495.0)	0.03	−0.02	−0.32	−0.07	0.31	0.26	0.08	0.10	0.34	0.44	0.53
Sweden	1964–85	4.13 (0.58)	−0.03 (0.01)	0.20	−0.73	−0.74	−0.12	−0.12	−0.25	−0.01	0.29	0.28	0.24	0.25
	1964–74	5.42 (4.65)	−0.05 (−2.44)	0.37										
	1974–85	3.19 (1.27)	0.005 (0.04)	0.02										

* Standard error between brackets

Source: See Appendix

Figure 2.1 Okun-analysis for Finland 1964–85



Source: See Appendix

In Table 2.2 linear estimates of the "Okun-line" for different time periods are presented for Finland, Norway, Denmark and Sweden together with residuals for the 1976 to 1985 period. All regressions, except for Norway, seem to underestimate the post-oil crisis unemployment rates, suggesting an increased difference between actual and predicted values.

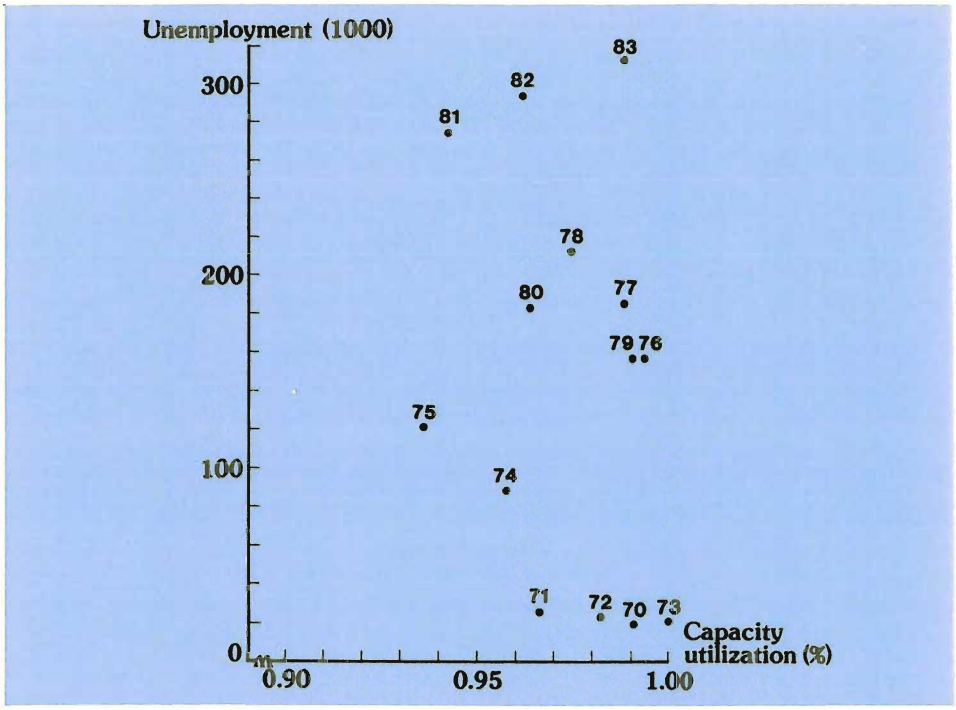
In Figures 2.1, 2.2 and 2.3 capacity utilization (manufacturing) has been plotted against unemployment figures for Finland, Denmark and Sweden).[1]) The vertical lines (for Finland and Sweden) represent average capacity utilization during the pre-oil and post-oil crises.

The numbers for Finland suggest a) an upward shift in the Okun-line and b) increased skill-related mismatch-unemployment. Calculations by Eriksson (1985) of the "mismatch index" confirm increased occupational matching problems.[2]) The

[1]) Capacity utilization in manufacturing has been plotted against total unemployment, due to difficulties of obtaining disaggregated unemployment figures for all Nordic countries. A check with manufacturing unemployment figures for Sweden does not change results.

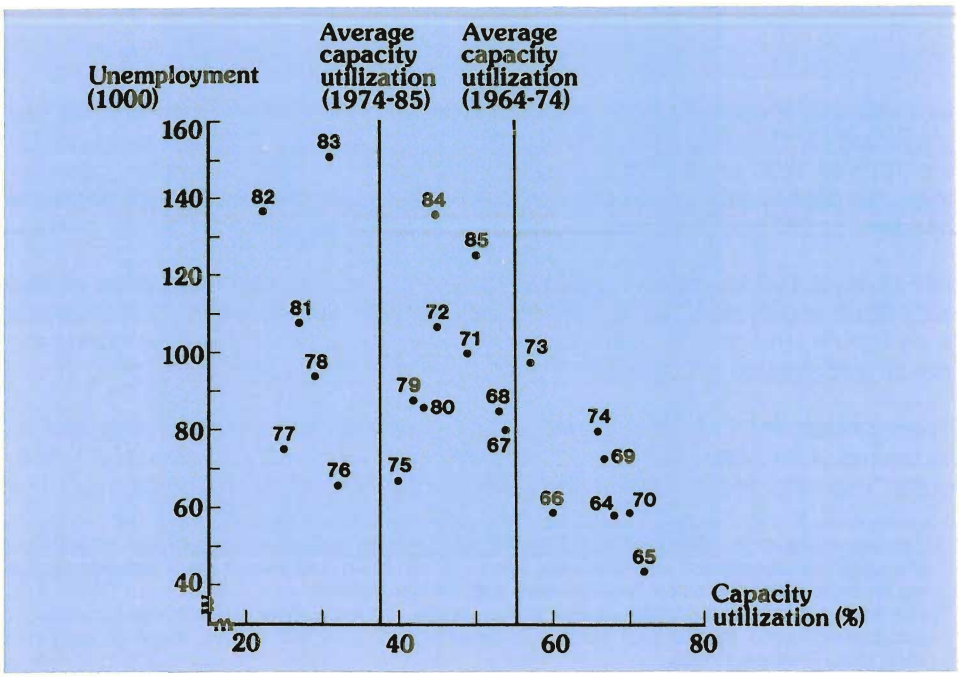
[2]) The mismatch index is calculated as $H = \Sigma \sqrt{u_i v_i}$, where u_i is the number of unemployed in a specific occupation divided by the total number of unemployed. v_i is the relative share of registered vacancies, Eriksson (1985).

Figure 2.2 Okun-analysis for Denmark 1970–85



Source: See Appendix

Figure 2.3 Okun-analysis for Sweden 1964–85



Source: See Appendix

same interpretation goes for Denmark. The Okun-line has shifted since the mid 70s, together with increased mismatch unemployment (see e.g. Ministry of Labor, 1985).

The picture for Sweden is not as easy to interpret. Clearly, skill-mismatch unemployment has increased. However, there does not seem to be any shift in the Okun-curve. The regression coefficient even changes sign from the middle of the 70s and onwards (Table 2.2).

One clue to the unexpected figures for Sweden is the fact that during the years 1975 to 1977, low capacity utilization figures existed together with low open unemployment figures. The discrepancy is explained by extensive economic policy measures to maintain full employment despite a drop in demand. As was shown in IUI (1984) this policy delayed the necessary structural adjustment, since resources were locked in the wrong industries. During the 80s, both unemployment and capacity utilization have adjusted to more normal levels.

So far, the general impression of the development on Nordic labor markets is a structural break in the middle of the 70s. What forces might account for this break? An important factor to investigate is whether micro-economic wage flexibility acts as a restriction to successful relative employment growth. The rest of the paper will tackle these questions more thoroughly.

3. Labor Market Flexibility – A Framework for Comparison

Flexibility on the external labor market has both a macro and a micro dimension. A key issue is the degree to which the labor market responds to demand and supply shocks and whether these adjustments take the form of price or quantity adjustments. Or in the economist's vocabulary – whether wages adjust rapidly and smoothly to clear the labor market.

The macro dimension relates to the flexibility of aggregate nominal and real wages (see Coe-Gagliardi, 1985), while the micro dimension concerns the flexibility of relative wage adjustment across industries. Studies indicate that the Nordic labor markets are quite flexible on the macro level (Bruno and Sachs, 1985). It is often claimed, however, that they are rather inflexible on the micro level due to narrowing wage differences (Jonsson and Siven, 1985).

But the common explanation of low flexibility on the micro level – narrow wage differentials – may not be the most important issue. Lack of training opportunities which are available to individuals might be a more significant part of the story. However, it is the problems of relative wage-adjustment that we will explore further in this study. This is done in the next two sections.

3.1 Relative Wages and Employment – Some Theoretical Considerations

The long-run evolution of the rate of unemployment/employment is caused by changes in the demand and supply of labor. On the supply side, we can identify causes, such as changes in the population of working age, participation rates and changes in hours worked. It is generally agreed that these supply factors cannot explain the recent rapid rise in unemployment rates (Bruno and Sachs, 1985).

On the demand side, technical change is one of several causes explaining the long-run development of unemployment. Although this effect is generally considered as important, the issue of overall labor market flexibility has been most debated in the literature, especially the question whether wages adjust rapidly and smoothly to clear the labor market.

Relative wages are closely bound to the *allocation of labor.* On one hand, changes in occupational wage differentials provide incentives for individuals to develop their human capital in line with changing skill requirements. On the other hand, wage differentials across industries work as signaling devices, informing workers to move from declining to expanding sectors. Finally, wages are an integral part of the determinants of *labor demand* across sectors.

Although the importance of relative wage changes seems quite obvious, these issues are subject to controversies along theoretical, empirical and political lines. The theoretical and empirical controversies center on whether there in fact is a relationship between wages and employment and why there is such a relation. Others, outside the core of neoclassical economist profession (sociologists and internal labor market economists), have also questioned the importance of wages as an allocating mechanism on the labor market.

The first empirical analysis (OECD, 1965) on relative wages and mobility concluded, in fact, that the allocation of labor had been sensitive primarily to job opportunities and not to movements in nominal relative wages. On the other hand, Holmlund (1984) showed that wage differences across sectors and occupations have been important for labor mobility in Sweden during the 70s.

The confusion on the theoretical and empirical level has certainly not helped to clarify discussions on the political level. The old controversies about a free market allocation of labor resources versus a more institutional regulatory view are still widely debated in the Nordic countries.

What about recent research efforts? Since the cited OECD-study, most research has been directed towards the questions of aggregate real-wage macro-flexibility (see Coe-Gagliardi, 1985). However, an important step has been taken in the 80s in disentangling the micro-economic determinants of relative industry wage changes. On the frontier of this development is Bell and Freeman's 1985 paper.

They try to answer two basic questions: First, how do wages respond to industry-specific conditions? And how does this affect the pattern of wage-differentials among industries over time? This also is the definition they use for micro-economic wage flexibility. Second, how does inter-industry wage flexibility influence relative employment?

In the West-European and Nordic debate, the well documented relative wage flexibility of the American economy has been assumed to be positive for

employment. As Bell and Freeman show, however, economists have long recognized that wage flexibility across industries need not always be good for employment.

They sketch two distinct cases (1) in which flexible wages among industries may be employment enhancing (*the competitive flexibility case*) and (2) in which flexible wages among industries can reduce employment in the fast growing industries and possibly in the economy overall (*the industry-productivity wage flexibility case*). The first case relates to circumstances when wages reflect *competitive market forces*, such as upward and downward shifts in demand and supply for workers in particular industries. The second case is employment enhancing only when wages are more flexible downwards than upwards to *industry-specific developments*.

More specifically, the competitive-flexibility model states the following: When industry wages are responsive to shifts in demand and supply for workers in particular industries, employment will be greater than if wages are inflexible. Consider a shift in demand for similar workers in particular industries. If the short-run labor supply is upward sloping, wage increases are necessary to increase employment when demand rises. The extent of wage flexibility needed to produce a given employment change within a sector will then depend on demand and supply elasticities governing behavior for workers and firms and the general state of excess demand. A positive relationship between changes in wages and employment will therefore exist whenever wages react to competitive circumstances.

This will only be true, however, in the short run. If wages react to competitive market forces, wage dispersion between similar workers will exist. This induces workers to move from declining to expanding industries. Mobility thus assures the long-run elimination of wage differentials, remaining differentials resulting only from skill differences and compensating wage differentials. So, in the long run it is through employment that adjustment takes place. The basic conclusion is thus that a *competitive wage structure* ought to be responsive to industry specific factors in the short run but not in the long run.

The industry-productivity model examines the effect of flexibility on employment due to industry-specific conditions, independent of shifts in labor demand. For instance, the model would apply in a wage-setting system where one explicitly announces wage demands on the basis of productivity growth.

If the labor market responds to industry specific changes in e.g. productivity per worker, downward flexibility of wages in response to declines in productivity can save some jobs; upward flexibility can cost jobs because industries experiencing rapid productivity gains may end up hiring too few workers. The effect of this kind of flexibility compared to an inflexible wage structure depends on the mix of positive and negative productivity patterns across industries and the upward and downward responsiveness of the wage structure. Bell and Freeman claim that if there exist positive and negative shocks to demand in equally sized sectors with equal elasticities of labor demand and supply, a wage system that responds to industry-level conditions will not necessarily lead to greater employment. However, if wages decline more in industries doing poorly than they rise in booming sectors, a flexible wage system might produce more employment than an inflexible system. On the other hand, if wages decline less in contracting industries than they rise in booming industries, a system reacting to industry specific

conditions will result (on net) in less employment than would otherwise have been the case.

Thus, wage-flexibility might contribute positively to employment under two conditions. First, when wages adjust to competitive market forces, such as upward and downward shifts of the demand and supply of labor, and second, when industry-specific productivity influences make the wage structure respond more to downward than upward shifts in wages.

3.2 Relative Wages from a Nordic Perspective

The discussion so far has a bias of American labor market institutional setting, where market forces certainly have been the driving force behind the allocation of labor.

Without overgeneralizing (there are differences), the Nordic strategy to the allocation of labor has used institutional forces to narrow wage differentials without sector-productivity influences. One part of this strategy is the so-called "solidaristic-wage policy". This means basically equal pay for equal work, regardless of productivity differences across sectors. The strategy has been adopted in varying degrees in all Nordic countries. Finland and Denmark can to a certain extent be regarded as outliers to the overall Nordic bargaining system, compared to Sweden and Norway, due to a more decentralized level of negotiation and a lower coverage of bargaining.

Table 3.1 shows some data on the Nordic and the U.S. bargaining systems, such as the coverage of bargaining and the level of negotiation, together with the corporatism rank order index.

Coverage of collective bargaining differs quite a lot in the Nordic countries, being highest in Sweden (95 %) and lowest in Finland (43 %). The level of negotiation is highly centralized in Norway, Sweden and Denmark compared to Finland. For this reason, Norway and Sweden receive the highest score on the corporatist index, Denmark is in the middle range, and Finland has the lowest score.

Table 3.1 Indicators of labor market corporatism

	Norway	Sweden	Finland	Denmark	U.S.A
Coverage of collective bargaining (per cent)	64	95	43	53	25
Level of negotiation	Central	Central	Branch	Central	Firm
Corporatism	4.0	4.0	1.5	3.0	0.0

Note: The figures presented above on coverage and level of negotiation refer to wage-setting systems in the early 80s. The corporatist index varies from minimum 0.0 to maximum 4.0 It is constructed as a weighted average of the degree of union centralization, the extent of shop-floor union power, employer coordination and the presence of work councils.

Source: Bruno and Sachs (1985).

Clearly, these stylized facts of the Nordic wage-setting system ought to have some implications regarding the determinants behind relative wage adjustment, productivity changes and employment performance. Still one should not stress differences based on the corporatist index too seriously.[1])

Firstly, Nordic relative wage-structures ought to be more inflexible than those in the U.S. In general, there should be no relationship between wages and sector-productivity, although there may be some sector specific influences due to, e.g., the proportion of female employment and skill intensity across industries. However, we might expect differences among the Nordic countries. Because of the different institutional wage setting practices in Finland and Denmark, wages may be more flexible and also influenced by sector productivity changes. For Sweden and Norway we might expect inflexible wage structures and thus no relationship between wage and sector-productivity changes. The important question, however, is the possible effect this inflexible wage-structure has on employment growth. Have relative wage changes hindered, fostered or been neutral to employment growth? Do the Nordic countries have the wrong or right kind of flexibility?

To derive hypotheses about the relationship between relative wage changes and employment is, however, quite a bit harder. Almost by definition we can rule out the competitive flexibility case. One part in the solidaristic wage policy would fit the industrial wage productivity model, to the extent that it limits wage increases in booming industries. On the other hand, it certainly does not allow the wages to fall in declining sectors, e.g., in the steel industry, as the Swedish evidence clearly shows (Örtengren, 1987). More specifically (1) the solidaristic wage policy limits relative wage flexibility by definition. But (2) the effect of this specific type of flexibility on employment is hard to predict, because (a) it limits increases in expanding industries and (b) reduces the scope for downward adjustments in contracting industries. These are contradictory forces, and the effect on employment will therefore depend on the relative strength of downward versus upward flexibility.

In terms of expected relationships between the major variables the following might exist. If the Nordic wage structure does react to competitive market forces, the rigidity of wages might decrease relative employment adjustment. Thus, if Nordic wage structures are compatible with the competitive model, we would expect a positive relationship between productivity and employment growth. On the other hand, if wages rise more in booming industries than they decline in contracting industries, the Nordic wage structure might possess the wrong kind of flexibility and, at least, not contribute to efficient employment adjustment. A negative relationship between changes in productivity and employment might then be expected.

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[1]) In fact, wage setting behavior in Finland was rather special during the early 80s. The decentralized bargaining that took place was not representative for the time period considered in this paper. Instead centralized bargaining was more common. In the case of Denmark it seems as if future wage setting behavior to a higher degree is directed towards decentralized bargaining (see Chapter III).

4. Relative Wage Flexibility – An Econometric Approach

Do wages in the Nordic countries adjust rapidly and smoothly to clear the labor market or do adjustments occur mainly via firms laying off or hiring workers at fixed wages? The micro-flexibility dimension of this question relates to the development of relative wages and its determinants across industries and occupations. The question thus goes back to the "first task" of the labor market discussed in Section 1.

Certainly relative wages are closely bound to the allocation of heterogeneous labor to heterogeneous jobs. We will therefore address the following questions: What has happened to the wage structure in the Nordic countries? What are the microeconomic determinants of changes in relative industry wages and how are these linked to changes in aggregate employment?

The data base consists of only 13 cross-section observations across manufacturing, on the two or three-digit industry level for the time period 1972–84. Although the data problems are enormous in a Nordic comparison we will give some preliminary tests of these hypotheses.

4.1 The Development of the Wage Structure

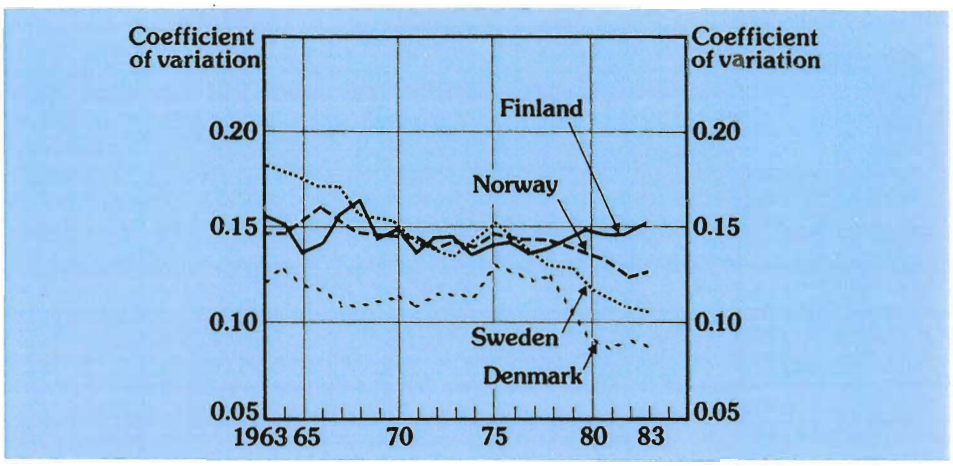
The real meaning of relative wage-flexibility can be measured along several dimensions. One is by examining if wages respond to industry level conditions so that the patterns of wage differences among industries vary over time. This is usually done by examining the development of the coefficient of variation. But as Björklund (1986) points out, it is not only the dispersion per se that is important from an allocational point of view; equally important is whether the wage structure is sensitive to changing market conditions. On the other hand, it is hard to judge the flexibility without some standard of comparison. A given dispersion can be compatible with both a rigid and flexible wage structure. A second measure is therefore to examine the stability of *inter-industry wage rankings* over time. This is done by regressing wage changes to wages in the beginning of the period. A positive relation suggests a widening of the wage structure with stable industry ranking. A negative relation indicates less wage dispersion and changes in industry rankings.

Figure 4.1 graphs the coefficient of variation of the log of nominal wages across industries in the Nordic countries on the two or three-digit industry level for the period 1963–83.

Compared to the long-run development of inter-wage industry structure in the U.S. (see e.g. Bell and Freeman, 1985), the Nordic wage dispersion has (measured as the unweighted variation in the coefficient of variation) decreased continuously over the 1963–83 period. Wage-dispersion among industries has decreased most in Sweden where the coefficient of variation fell from 0.18 in 1963 to 0.10 twenty years later (1983). In Denmark wage-dispersion was stable from 1963 to 1979, but fell very dramatically between 1979 and 1981 (see also Albaek and Madsen, 1983). Wage dispersion has been stable in Norway and Finland.

These results are further confirmed in Table 4.1 where a time-trend is regressed on the development of the coefficient of variation, and the coefficient of change in

Figure 4.1 The coefficient of variation of nominal wages in Nordic countries 1963–83



Source: See Appendix

industry rankings are presented. A negative trend-sign is thus interpreted as if wage dispersion has declined and a non-significant coefficient, as a stable development. A negative value of the coeffient of industry rankings indicates some wage compression with changing industry rankings.

All Nordic countries receive negative signs, although the trend-coefficient for Norway and Finland is insignificant. A more satisfactory measure of wage dispersion is to weight wages by the number employed in every industry. This is done in Zetterberg (1986) for the Nordic countries, except Denmark, and for Germany and the U.S. These calculations show that wage dispersion has decreased most in Sweden and increased in the U.S., Germany and Finland (see Leppänen, 1986). In Norway wage dispersion has been more or less stable. Only small changes in industry rankings have taken place.

Table 4.1 Development of the coefficient of variation and industry rankings in the Nordic countries 1963–83
Estimated trend values

Country	Trend	Industry ranking
Finland	−0.004	−0.58[a]
Norway	−0.005	−1.08[a]
Denmark	−0.01[a]	−0.31[a]
Sweden	−0.03[a]	−1.10[a]

[a] = significant coefficients

Source: See Appendix

Table 4.2 Relative wages for workers in selected industries
ISIC 2+3 (Mining, quarrying and manufacturing) = 100

ISIC	a Denmark	1970	1975	1980	1983
311–312	Food	102	111	111	105
321	Textiles	102	110	112	104
33	Wood	101	102	103	99
341	Paper and pulp	91	111	116	110
35	Chemicals	100	105	104	100
37	Metal	98	100	103	104
38	Engineering	98	99	97	92
3841	Shipyards	101	105	120	119
ISIC	b Finland	1970	1975	1980	1983
2	Mining	77	65	70	62
311–312	Food	103	105	109	109
321	Textiles	109	107	108	114
33	Wood	104	106	110	106
341	Paper and pulp	96	105	108	108
342	Printing	104	102	107	93
35	Chemicals	100	105	102	104
37	Metal	104	106	114	111
38	Engineering	101	105	100	97
ISIC	c Norway	1970	1975	1980	1983
2	Mining	98	136	112	115
311–312	Food	104	103	104	103
321	Textiles	102	96	107	105
33	Wood	92	90	88	79
341	Paper and pulp	101	141	134	133
342	Printing	103	101	111	142
35	Chemicals	99	103	102	103
37	Metal	99	99	98	95
38	Engineering	199	99	132	123
ISIC	d Sweden	1972	1976	1980	1984
2	Mining and	115	119	114	117
32	Textiles	85	85	88	87
341	Paper and pulp	102	109	110	116
35	Chemicals	95	97	98	100
37	Basic metal industries	107	109	108	109
383	Electrical machinery	96	96	95	96
3841	Ship and boat building	117	111	105	105
3843	Motor vehicles and parts and accessoires	103	101	100	n.a.

Source: Yearbook of Nordic Statistics, Björklund (1986) and SAF

This is also shown in Table 4.2a-d, where relative wages have been calculated for selected industries, which have been hit by structural problems during the 70s (mining, basic metal, shipyard and textiles), and for others, which have had very favorable demand conditions (chemicals and engineering). The striking fact is the long-run stability in the relative wage industry structure despite changing economic circumstances. Booming sectors have not shown more wage increases than declining sectors in Sweden. The same goes for Finland and Denmark. Adjustment to competitive forces seems to be somewhat greater in Norway.

So far, two conclusions seem to be justified for the development of the Nordic industry wage structure. First, wage dispersion across industries has declined in Sweden and Denmark, increased in Finland and been stable in Norway. Second, wages appear to be quite inflexible to competitive market forces in almost every Nordic country. Relative wages do not seem to have grown faster in industries with favorable demand conditions compared to crisis industries.

The basic point, however, is how one should interpret the results presented above from the standpoint of relative wage flexibility. This can only be done by looking into the causes of these changes. The next two sections will thus explore these relationships econometrically by testing the relationship between relative wage changes, sector specific variables and relative employment adjustment across sectors.

4.3 Determinants of Nominal Relative Wage Changes

We will next estimate equations linking changes in industry wages (on the two-digit industry level) over the time period 1974–84, to various microeconomic (sector specific) wage determining characteristics. Two opposite views have dominated in the literature on the relationship between sector specific variables and wages. An early contribution by Garbarino (1950) found a weak positive effect of, for instance, productivity on wages in U.S. During the 60s and 70s the dominant view, however, seemed to favor the notion that wages and productivity are uncorrelated across sectors; wages being more influenced by aggregate conditions such as inflation and the impact of the business cycle (Eliasson-Lindberg 1986).[1]) It is only recently that the importance of microeconomic variables were considered again (Bell and Freeman, 1985, and Lawrence and Lawrence, 1985).

To examine industry wages we use a model specification proposed by Bell and Freeman (1985) and OECD (1986). The equation can be specified as:

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[1]) This is done by regressing the standard deviation of the log of wages (1963–83) on a cyclical indicator, log of real GNP (REAL), and a post 1974 (P74) time trend. As Wachter (1970) suggested there ought to be a negative relation between cyclical swings in the industry wage structure and real output; producing greater inequality in wages across industries in recession than in booms. This is also partly confirmed in the following four equations and also more pronounced in the Nordic countries compared to the U.S. (Bell and Freeman, 1985):

(1) Sweden: ln wage = 0.99 − 0.07 REAL + 0.01 P74; $R^2 = 0.65$
(5.37) (−4.78) (2.17)

(2) Norway: ln wage = 6.41 − 0.54 REAL + 0.18 P74; $R^2 = 0.22$
(2.07) (−2.02) (1.35)

(3) Denmark: ln wage = 0.53 − 0.04 REAL + 0.02 P74; $R^2 = 0.24$
(2.32) (0.02) (2.37)

(4) Finland: ln wage = 0.56 − 0.04 REAL + 0.01 P74; $R^2 = 0.24$
(2.87) (2.15) (1.20)

$$\Delta \ln W_i = \rho_1 + \rho_2 \Delta \ln(VA_i/L_i) + \rho_3 \Delta Fem_i + \rho_4 \Delta Skill_i + \rho_5 Wb_i + \varepsilon_i \quad (1)$$

where

W_i = Nominal wages in industry i
VA_i/l_i = Sector productivity per worker
Fem_i = Proportion of female employment
$Skill_i$ = Proportion of white-collar employment
Wb_i = Level of wages in the base year

The rationale for and expected signs of the coefficients can be summarized as follows: The key "sector-specific" variable is the level of productivity per worker.[1]) As OECD (1985) claims, a priori, the effect is indeterminate if the cross-section estimates can be regarded as the outcome of a long-run equilibrium and the labor market operates in a fully competitive behavior; (1) then no relationship would be expected. However, in a world of decentralized collective bargaining (2) a positive relationship might exist, e.g., in Finland. A negative relation (3) might occur in a world of highly centralized collective bargaining such as the other Nordic labor markets. The other variables reflect different supply side factors likely to affect industry wages, namely the proportion of female employment in each sector and the skill-intensity in a sector proxied by the proportion of white-collar employees. That is, industries with more rapid growth in female employment might have slower wage growth. The opposite goes for the skill intensity variable. The base year level wage is included to capture the effect of the industry starting position. A negative sign would suggest some wage compression and changes in industry rankings.

The results of the various regression estimates are presented in Table 4.3. There is only weak support for sector-specific influences in the Nordic countries. The sign of the key industry specific variable (VA/L) was negative and significant in every single case, although the elasticities turned out to be quite low for all countries; and particularly in Sweden (−0.01 and −0.02). In Denmark the elasticity ranged from −0.03 to −0.08. In Norway and Finland the elasticity was −0.09 and −0.05. The negative sign on sector productivity in the case of Denmark, Sweden and Norway is hardly surprising – although the low elasticities are – considering the purpose of the solidaristic wage policy. The negative coefficient of value-productivity in Finland is more surprising, as we hypothesized (based on the corporatist index) Finland to have the most decentralized bargaining system in the Nordic countries. Accordingly, this index is likely to underestimate the degree of corporatism in Finland.

The other supply variables behaved according to our hypothesis. The initial wage contributes negatively to wage changes in all countries. The coefficient for female is negative for Sweden. The skill intensity variable is, as expected, positive.

Thus, when it comes to sector-productivity influences in the Nordic countries it differs, as expected, from both its European counterparts (France and the U.K.), and from circumstances in the U.S., Canada and Japan (OECD, 1985).

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[1]) It is naturally possible to include other sector specific variables such as product market concentration, the extent of import penetration, export performance and variation in the capacity-utilization risk. Attempts to take these variables into account will be done in a forthcoming study.

Table 4.3 Determinants of relative wage-changes across manufacturing, mining and quarrying industries in Nordic countries
Dependent variable is changes in nominal wages

Country	Period	Intercept	VA/L	Fem	Skill	Wage-level	R^2
Norway							
a) Blue-collar workers	1972–84	5.32 (1.99)	−0.05 (0.03)	–	–	−0.58 (0.27)	0.49
Finland							
a) Blue-collar workers	1972–84	8.33 (3.63)	−0.09 (0.06)	–	–	−1.08 (0.55)	0.48
Denmark							
a) Blue-collar workers	1973–83	3.66 (1.26)	−0.03 (0.08)	–	–	−0.31 (0.15)	0.90
b) Wage-earners	1973–83	5.10 (6.53)	−0.08 (0.05)	–	−0.02 (0.02)	−0.36 (0.25)	0.66
Sweden							
a) Blue-collar workers	1972–84	5.76 (0.80)	−0.02 (0.02)	–	–	−1.10 (0.27)	0.66
b) Wage-earners	1972–84	2.92 (0.76)	−0.01 (0.006)	−0.01 (0.004)	0.001 (0.007)	−0.22 (0.09)	0.86

* Standard errors between brackets.

Notes: The regressions have been estimated by OLS. Changes in variables are calculated as year to year changes. Wage-earners refer to both blue- and white-collar workers. The wage variable include all payments in cash or in kind made to employees. VA/L = nominal labor productivity.
Fem = female employment in percent of total employment.
Skill = white-collar employment in percent of total employment.
The wage level variable refer to the wage structure in the beginning of the time period.

Source: See Appendix

The results, viewed from a Nordic perspective, seem to run counter to a recent analysis in OECD (1985) claiming that the relationship between relative-wages and sector-productivity changes holds across countries with very different bargaining arrangements. Our conclusion is, however, that workers in the Nordic countries are not able to obtain a share of the industry-specific gains, although the strength was much lower than expected. The important question to ask is whether this has any effect whatsoever on the employment enhancing capacity in the Nordic countries. This will be explored in the following section.

4.4 Relative Wages and Employment across Industries

Two basic questions are addressed: Is there any relationship between wages, productivity and employment? Does sectoral employment react to changes in relative wages? As discussed in Section 3 the possible relationship is not as straightforward as might be expected, considering the actual behavior of the labor

market. It is therefore important to investigate the relationship in a Nordic perspective, with its centralized institutional wage setting.

As noted earlier (Section 3) we might expect to find a negative relationship between (1) relative wage changes and employment, and (2) between employment and sector productivity. The latter relationship contrasts with the one presented in Salter (1960), who found a positive correlation between the latter two variables. This would fit the competitive-industry model. However, Bell and Freeman (1985) expect the opposite pattern in the 70s and early 80s for the U.S., where industries with rapid productivity growth might have lower rather than higher employment growth if upward wage-flexibility outweighs downward flexibility. Simple correlation analysis seems to give weak support to the latter view in the Nordic countries, although with very low significance. Accordingly, the correlation between productivity and employment is negative in Norway (−0.26), Denmark (−0.13), and Sweden (−0.61). A positive, but non-significant, relationship exists in Finland (0.30).

A simple way of testing if the Nordic wage and employment developments reflect the industry productivity model, in which increases in wages may reduce employment along the demand curve, is by specifying a regression equation as in (2):

$$\Delta \ln E_i = \rho_1 + \rho_2 \Delta \ln W_i/P_i + \rho_3 \Delta \ln SAL_i/P_i + \varepsilon_i \qquad (2)$$

where

$\Delta \ln E_i$ = change in log of employment in industry i

$\Delta \ln W_i/P_i$ = change in log of product wage in industry i

$\Delta \ln SAL_i/P_i$ = change in real output in industry i.

The expected signs should be as follows: (1) Industries with relative increases in the real product wage ought to have relative employment declines, holding output constant. (2) For a given product wage, industries with relative output increases should expand employment. The results of the simple labor demand equations are contained in Table 4.4.

With the exception of blue-collar workers in Sweden the results provide some support for the industry-productivity model, although the strength and significance of the coefficients differ considerably. Accordingly the elasticities receive very low values. Industries with relative product wage increases had relative employment decreases, output held constant; the effect being strongest in Norway (−0.18) and Sweden (−0.38). Industries with relative output increases had relative employment gains for a given product wage; the elasticities being highest in Sweden and Denmark. Thus, relative wage changes have contributed negatively to employment changes but less than in other European countries (OECD, 1985).

However, as argued in Section 3, the relative wage structure might still be employment enhancing if relative wages decline more in contracting industries than rise in booming industries. In the economist vocabulary this is known as asymmetry in industry response patterns. This relationship can be tested using a regression specification as in (3).

Table 4.4 Employment, real wages and real output
Dependent variable is changes in employment

Country	Period	Intercept	W/p	Sal/p	R^2
Norway					
a) Blue-collar workers	1972–84	−0.10	−0.18	0.10	0.67
		(0.12)	(0.14)	(0.03)	
Finland					
a) Blue-collar workers	1972–84	−0.09	−0.05	0.14	0.34
		(0.04)	(0.03)	(0.08)	
Denmark					
a) Blue-collar workers	1973–83	3.66	−0.03	−0.31	0.51
		(1.26)	(0.08)	(0.15)	
b) Wage-earners	1973–83	0.85	−0.02	0.43	0.98
		(−1.13)	(0.83)	(0.12)	
Sweden					
a) Blue-collar workers	1972–84	−0.21	0.26	0.54	0.64
		(0.05)	(0.12)	(0.17)	
b) Wage-earners	1972–84	−0.15	−0.38	0.55	0.62
		(0.06)	(0.18)	(0.18)	

* Standard errors between brackets

Notes: The regression is estimated as in Table 4.3 (see notes). W/p = Nominal wages deflated by producer price indicies for each sector. Sal/p = sales deflated by producer price indicies for each sector.

Source: See Appendix

$$\Delta \ln W_i = \rho_1 + \rho_3 \text{Low}\ \Delta VA_i/L_i + \rho_2 \text{High}\ \Delta VA_i/L_i + \varepsilon_i \quad (3)$$

$\Delta \ln W_i$ = the difference between each industry wage change and the average across industries

Low $\Delta VA_i/L_i$ = the difference between industry value productivity and the average change across all industries for those industries with productivity records below the average

High $\Delta VA_i/L_i$ = the difference between industry value productivity and the average change across all industries for those industries with productivity record above the average

If the asymmetry hypothesis has any explanatory power, the first coefficient (Low VA_i/L_i) should be positive and greater than the second (High VA_i/L_i). The results are presented in Table 4.5. The regression estimates generally support an interpretation of wage response patterns consistent with the asymmetric industry-productivity model. In Norway, for instance, a 10 per cent increase in productivity in those industries with best productivity records, leads to a 1 percentage change in wages, compared to the 3 percentage change in industries with the below-average productivity records. In Finland and Denmark the regression coefficients for those industries with best productivity records turned out negatively. The changes in relative wage structures in these three countries seem to possess the "right" kind of flexibility.

Table 4.5 Asymmetric wage response patterns

Dependent variable is the difference between each industry wage change and the average across industries

Country	Period	Inter-cept	Low VA/L	High VA/L	Fem	Skill	W74	R^2
Norway								
a) Blue-collar workers	1972–84	2.67 (1.67)	0.30 (0.04)	0.10 (0.02)	–	–	0.001 (0.001)	0.96
Finland								
a) Blue-collar workers	1972–84	5.37 (3.27)	0.04 (0.30)	−1.85 (0.89)	–	–	−0.005 (0.003)	0.70
Denmark								
a) Blue-collar workers	1973–83	0.05 (0.72)	0.24 (0.07)	−0.34 (0.11)	–	–	−0.0002 (0.004)	0.88
b) Wage-earners	1973–83	3.04 (10.11)	2.33 (1.23)	−1.22 (1.23)	–	0.10 (0.40)	−0.0004 (0.002)	0.89
Sweden								
a) Blue-collar workers	1972–84	−0.31 (1.47)	−0.10 (0.20)	0.21 (0.18)	–	–	0.006 (0.07)	0.19
b) Wage-earners	1972–84	2.19 (2.08)	0.01 (0.16)	0.09 (0.17)	−0.09 (0.08)	0.11 (0.07)	−0.001 (0.001)	0.54

* Standard errors between brackets

Notes: See Table 4.3 for definition of variables

Source: See Appendix

The only outlier is the regression for wage-earners in Sweden where the asymmetric industry productivity model breaks down. Apart from data problems and sensitivity or the time period chosen, this is an interesting result, since it can (perhaps) be interpreted as consistent with the "end game model" discussed in Lawrence and Lawrence, 1985. Considering the rigid relative wage structure for Sweden presented in Table 3.2 (in Section 3.1), where relative wages, in declining industries in fact changed very little, this might be a plausible interpretation. Thus, high relative wages may be the result of declining competitiveness rather than the cause, whenever unions perceive that the demand for labor becomes less elastic.

4.5 Conclusions

To summarize: The various tests presented give some mixed signals. Table 4.6 lists the major results from these tests, together with the development of unemployment and employment across Nordic countries.

The Nordic relative wage structure has changed considerably during the 1963–83 period (line 1). Wage dispersion (a) decreased in Sweden and Denmark, (b) increased in Finland, and (c) was stable in Norway. Given the dispersion of wages,

Table 4.6 A summary of major results

	Finland	Norway	Sweden	Denmark
(1) Wage dispersion	Increased	Stable	Decreased	Decreased
(2) Industry rankings	(−0.58)[a]	(−1.08)[a]	(−1.10)[a]	(−0.31)[a]
(3) Sectorspecific variables:				
a) Productivity (VA/L)	(−0.09)[a]	(−0.05)[a]	(−0.02)[a]−(−0.01)[b]	(−0.03)[a]−(0.08)[b]
b) Female (Fem)	–	–	−0.01[b]	–
c) Skill (Skill)	–	–	0.001[b]	–
(5) Asymmetric responses	Support	Support	No support	Support
(6) Product wage	(−0.05)[a]	(−0.18)[a]	(−0.26)[a]−(−0.38)[b]	(−0.03)[a]−(0.02)[b]
(7) Mean change in product wage (W/P)	(0.74)[a]	(0.87)[a]	(−0.11)[a]−(0.17)[b]	(1.75)[a]−(1.08)[b]
(8) Employment (Annual growth in percent 1974−84)	0.8	1.8	−0.8	−3.4
(9) Unemployment (percent, 1985)	6.3	2.5	2.8	9.2

[a] Refer to blue-collar workers
[b] Refer to wage-earners

(2) some changes in industry rankings took place (line 2). The relative wage structure was flexible in the Nordic countries. But to give a precise meaning to this flexibility one has to examine the various causes behind relative wage changes. (3) Relative wage-structures respond to sector-specific variables but to a smaller degree than its European counterparts (OECD, 1985). This is not surprising, given the centralized wage-setting system in the Nordic countries. Surprisingly enough, the sector productivity variable received very low elasticities (line 3). A lot of the variation, however, has still to be explained.

Changes in relative wages and changes in their determinants can affect employment. It is, however, difficult to explain which differences in relative wage changes that can account for different employment performance across the Nordic countries. (4) Asymmetric wage responses may have helped employment in Finland, Norway and Denmark. Sweden seems to have the "wrong" kind of relative wage flexibility (line 5). (5) Our examination of the determinants of labor demand shows further that industries which have had relative increases in product wage also had relative employment declines (line 6), although with a low significance. On the other hand, if the average change in product wage differs, the effect on employment will differ. (6) From line 7 we find that Sweden showed a decreased product wage. In the other Nordic countries it increased.

5. Flexibility Again – Inadequate Labor Market Institutions?

The flexibility of the labor market is crucial, in order to utilize the growth potential of the economy. Technology and the demand structure of the economy change continually. Marginal productivity will therefore differ between new and old establishments, sectors and occupations. A central task of the labor market, in order to foster growth, is to enhance the job creating capacity of the private sector, while maintaining acceptable labor and social standards.

The trade-off between efficiency and equity lies at the heart of the system of industrial relations in the Nordic countries, where the allocation of labor relies to a higher degree than in other European countries on the visible hand of government. This is sometimes considered an inefficient way of organizing the labor market.

It is certainly not easy to evaluate the efficiency of Nordic labor markets. The test of structural breaks in unemployment and employment figures clearly gives some mixed signals. But I think one dare to conclude that structural imbalances have increased compared to cyclical imbalances.

Various imbalances are normally the result of insufficient price-adjustments in output and input markets. We focused our attention in this paper on the issues of microeconomic wage flexibility and its relation to aggregate employment.

The major results with respect to microeconomic flexibility are: *First*, Nordic relative wage-structures have changed considerably. Some of the changes are explained by a different composition in the work-force (Sweden), some by institutional forces, such as the Nordic wage-setting system. A lot of the variation is, however, still unexplained.

There is no possibility of quantifying how the changes in relative wages can account for different employment performance across countries. *Second*, asymmetric wage flexibility may have helped employment in Finland, Norway and Denmark. The wage structure in Sweden seems to possess the wrong kind of flexibility. *Third*, sectors which have had increases in product wages seemed to have relative employment decreases. This goes for all countries, although the effect has a very low statistical significance.

Thus, turning to the original question whether the relative wage structure in the Nordic countries has hindered, fostered or been neutral to relative employment changes are still an open issue. The results in this study give some support that wages may matter. More work is needed, however, in modeling the various causes affecting employment.

The two models considered in this study are two extreme alternatives on a wide spectrum of different approaches explaining relative wages. In a Nordic perspective it would seem more appropriate to work with trade union models as those suggested by Pencavel (1985); particularly those dealing with the behavior of unions in a centralistic wage setting system. An important aim for the Nordic trade unions has been to alter the relative wage structure by the solidaristic wage policy.

A second problem with the present analysis is that gross wages are used. Neither employees nor employers respond to this. To employees the relevant wage variable is wages net of tax. To employers it is gross wages plus payroll taxes.

Finally, one ought to look into the effect of wage differentials on relative employment between comparable workers in manufacturing and service industries. Private services have increased rapidly in Finland and Denmark but only slightly in Sweden. It would be interesting to study the issues of wage-flexibility in this perspective too. The research agenda for the economist is, as always, busy.

Data Appendix

	Norway	Finland	Denmark	Sweden
Unemployment	SS	SS	SS	SS
Layoffs	LCN	ICF	–	CSS
Employment	SS	SS	SS	SS
Employment/population	SS	SS	SS	SS
Capacity/utilization	IAO	ETLA	BD	ISS
Hourly earnings				
a) blue collar workers	WCC	WCC	WCC	WCC
b) white collar workers	–	–	WSD	SSS
Value added	MCN	ICF	SSD	ISS
Employment	LCN	ICF	SSD	ISS
a) total	LCN	ICF	SSD	ISS
b) female	–	–	SSD	ISS
c) skill	–	–	SSD	ISS
Prices	BNP	CFP	SSD	SSP

Statistical Supplement = SS. Industrial Activity, OECD = IAO. Budgetredegørelse, Denmark, 1986 = BD. Industristatistiken (Industry statistics), Statistics Sweden = ISS. Statistisk tioårsoversigt, Statistics of Denmark = SSD. Industrial statistics, Central Statistical Office of Finland = ICF. Manufacturing statistics, Central Bureau of Statistics of Norway = LCN. Wages and total labour costs for workers, Swedish Employers' Confederation = WLC. Labor statistics, Statistics Sweden = LSS. Salary statistics, Statistics Sweden = SSS. Statistics Sweden, Serie P = SPP. Wage and salary statistics, Statistics of Denmark = WSD. Bureau of Statistics of Norway, Serie P = BNP.

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STATISTICAL APPENDIX

THE NORDIC ECONOMIES 1950–85

For each of the countries Denmark, Finland, Norway and Sweden we present the following tables covering the whole or parts of the 1950–1985 period:

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At fixed and current prices

2 **GROSS DOMESTIC PRODUCT BY ECONOMIC SECTORS** 338
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Denmark:
Balance of resources,* 1950–85. Million DKK.
1950–1966 at 1975-prices; 1966–1985 at 1980-prices.

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total	Invest-ment, private	Invest-ment, public	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy
50	92 699	14 734	107 433	13 360	16 250	14 306	1 944	5 213	73 971	57 647	16 324	3 851	
51	91 030	14 038	105 068	15 135	14 950	13 016	1 934	4 771	73 939	56 332	17 607	1 044	
52	93 353	13 829	107 182	15 102	16 133	14 119	2 014	4 803	75 406	56 810	18 596	541	
53	98 919	15 704	114 623	16 619	17 795	15 168	2 627	5 687	78 206	58 204	20 002	2 002	
54	102 740	18 673	121 413	18 179	18 775	15 649	3 126	6 256	82 723	61 793	20 930	1 736	
55	101 913	18 529	120 442	19 565	17 317	14 100	3 217	5 308	83 012	61 897	21 115	547	
56	103 828	20 059	123 887	19 818	18 178	14 790	3 388	5 024	84 079	62 934	21 145	1 803	
57	107 630	20 708	128 338	21 555	19 123	15 903	3 220	5 909	85 216	63 445	21 771	2 444	
58	109 927	22 053	131 980	23 792	20 035	16 532	3 503	5 466	88 001	66 130	21 871	94	
59	118 232	26 745	144 977	25 434	23 863	20 318	3 545	7 204	92 936	69 603	23 333	2 744	
60	125 210	29 402	154 612	27 932	25 902	22 046	3 856	7 457	96 705	72 518	24 187	4 074	
61	133 035	30 629	163 664	28 984	29 187	24 737	4 450	8 828	103 348	77 916	25 432	2 144	
62	140 696	34 953	175 649	30 493	31 249	26 241	5 008	9 429	110 652	82 683	27 969	3 254	
63	141 313	34 266	175 579	33 756	30 247	25 500	4 747	9 024	111 153	82 430	28 723	424	
64	155 406	41 366	196 722	37 246	37 044	31 484	5 560	11 628	124 080	89 191	30 911	2 378	
65	162 488	44 167	206 655	40 350	38 868	32 329	6 539	12 481	124 080	92 164	31 916	3 356	
66	167 320	46 600	213 920	41 998	40 156	33 238	6 918	12 677	130 661	96 887	33 774	1106	
66	256 830	79 020	335 850	62 910	61 993	50 306	11 687	19 628	208 862	158 354	50 508	2 085	
67	265 618	82 572	348 190	65 396	65 396	52 026	13 300	21 663	217 298	162 969	54 329	169	
68	276 175	86 583	362 758	71 448	66 537	52 388	14 149	21 412	222 997	166 106	56 891	1 776	
69	293 636	97 957	391 593	75 855	74 379	58 876	15 503	26 275	237 318	176 559	60 759	4 042	
70	299 585	107 088	406 674	80 104	76 007	59 364	16 643	25 505	247 694	182 751	64 943	2 869	
71	307 571	106 318	413 889	84 558	77 481	60 295	17 186	25 113	249 862	181 372	68 490	1 988	
72	323 800	107 892	431 692	89 279	84 654	67 911	16 743	33 124	256 793	184 368	72 425	965	
73	335 560	121 670	457 230	96 256	87 591	72 688	14 903	34 263	268 620	193 305	75 315	4 763	
74	332 432	117 040	449 472	99 626	79 835	65 543	14 292	25 707	265 733	187 772	77 961	4 277	
75	330 235	111 412	441 647	97 852	69 947	56 238	13 709	21 979	274 207	194 675	79 532	−359	
76	351 613	128 776	480 390	101 850	81 925	67 931	13 994	26 352	293 078	209 996	83 082	3 536	
77	357 319	128 808	486 427	106 040	79 921	65 679	14 242	23 839	297 349	212 272	85 077	2 815	
78	362 593	128 962	494 555	107 597	80 808	66 480	14 328	24 042	304 210	213 861	90 349	−759	
79	375 447	135 368	510 814	116 264	80 453	65 499	14 954	23 841	312 449	216 804	95 645	1 647	
80	373 785	126 205	499 991	122 256	70 312	57 527	12 785	19 833	308 548	208 814	99 734	−1 125	
81	370 460	124 085	494 544	132 282	56 798	46 195	10 604	14 728	306 351	203 992	102 359	−887	
82	381 646	128 774	510 420	135 592	60 821	51 206	9 615	13 479	312 455	206 947	105 508	1 552	
83	391 258	131 040	522 297	142 176	61 947	53 754	8 193	15 196	317 757	212 292	105 465	417	
84	404 763	139 040	543 803	148 122	68 112	n.a.	n.a.	18 046	322 570	218 066	104 504	5 000	
85*	420 692	150 427	571 119	153 997	77 018	n.a.	n.a.	19 064	335 603	228 815	106 788	4 500	

* National accounts revised in 1966
[1]) Residential investment 1959–66 estimated

Finland:
Balance of resources,* 1950–1985. Million FIM.

1950–1960 at 1954-prices; 1960–1985 at 1980-prices.

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total	Invest-ment, private	Invest-ment, public	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy[1])
50	7 263	1 155	8 418	1 434	1 689	1 381	301	428	5 453	4 565	887		−158
51	7 940	1 520	9 460	1 673	1 852	1 581	270	475	5 798	4 918	880		137
52	8 214	1 750	9 964	1 568	2 089	1 751	338	532	6 148	5 224	924		157
53	8 224	1 363	9 587	1 605	2 170	1 696	474	563	6 117	5 125	991		−306
54	8 968	1 689	10 658	1 845	2 354	1 895	459	576	6 474	5 482	992		−16
55	9 645	1 989	11 635	1 989	2 507	2 054	452	618	7 030	5 949	1 081		107
56	9 837	2 173	12 011	1 959	2 700	2 178	521	577	7 313	6 202	1 111		38
57	9 987	2 134	12 121	2 187	2 651	2 080	571	627	7 239	6 082	1 157		43
58	9 979	1 915	11 894	2 170	2 753	2 094	659	564	7 118	5 921	1 197		−148
59	10 702	2 317	13 019	2 458	3 005	2 345	659	564	7 631	6 347	1 283		−75
60	11 765	2 848	14 613	2 824	3 505	2 880	625	697	8 200	6 870	1 330		82
60	84 338	20 591	104 929	18 014	26 428	22 549	3 876	5 704	59 120	46 427	12 693	904	463
61	90 752	22 251	113 003	18 940	28 846	25 042	3 804	6 701	63 404	49 969	13 435	1 150	663
62	93 458	23 500	116 958	20 279	29 000	24 994	4 006	7 391	67 474	52 974	14 500	430	−225
63	96 528	22 847	119 375	20 723	28 138	23 771	4 367	7 579	70 827	55 313	15 514	−881	568
64	101 585	27 553	129 138	21 927	29 845	24 578	5 267	7 029	74 198	58 366	15 832	−318	3 486
65	106 972	29 830	136 802	23 158	32 963	27 171	5 792	7 591	78 202	61 627	16 575	2 333	146
66	109 510	30 885	140 395	24 641	34 263	28 657	5 606	8 044	80 529	63 198	17 331	958	4
67	111 885	30 791	142 676	26 107	33 841	28 013	5 828	8 368	82 654	64 529	18 125	−228	302
68	114 462	29 582	144 044	28 713	32 086	26 190	5 896	8 195	83 758	64 572	19 186	1 763	−2 276
69	125 443	36 174	161 617	33 519	36 155	30 431	5 724	9 178	91 337	71 502	19 835	1 648	−1 042
70	134 957	43 515	178 472	36 448	40 659	35 692	4 967	10 681	97 833	76 917	20 916	5 690	−2 301
71	137 742	43 255	180 997	35 991	42 192	37 226	4 966	12 215	100 328	78 206	22 122	3 837	−1 463
72	148 210	45 075	193 285	41 197	44 945	39 106	5 839	13 317	108 599	84 762	23 837	−1 033	−500
73	157 993	50 941	208 934	44 197	48 771	43 313	5 458	14 096	114 975	89 805	25 170	−196	1 263
74	162 850	54 351	217 201	43 917	50 474	45 150	5 324	14 096	117 706	91 403	26 303	8 455	−3 345
75	164 591	54 656	219 247	37 783	53 474	47 671	5 803	13 914	122 397	94 280	28 117	3 994	1 742
76	165 139	53 580	218 719	42 601	48 755	43 197	5 558	12 795	124 862	95 142	29 720	−2 449	4 986
77	165 461	52 730	218 191	49 397	46 247	40 656	5 591	13 420	125 028	94 039	30 989	−2 591	145
78	169 719	50 676	220 395	53 595	42 919	37 290	5 629	13 589	128 896	96 648	32 248	−3 684	−1 311
79	182 303	60 044	242 347	58 428	44 270	38 527	5 743	13 399	135 531	102 096	33 435	4 376	−244
80	192 556	65 016	257 572	63 386	48 638	42 537	6 101	14 054	138 933	104 038	34 895	6 287	328
81	196 028	62 720	258 748	67 462	50 195	43 943	6 252	13 706	141 783	105 494	36 289	1 019	−1 711
82	201 831	64 026	265 857	66 438	51 962	45 172	6 790	14 529	147 410	109 825	37 585	1 504	−1 457
83	207 752	66 346	274 098	68 898	54 428	47 376	7 052	14 501	151 873	112 793	39 080	1 807	−2 188
84*	213 448	67 054	280 502	73 007	53 475	46 588	6 887	14 128	156 034	115 849	40 185	1 040	−2 968
85*	219 754	71 263	291 017	73 964	55 111	47 971	7 140	13 715	161 788	119 708	42 080	509	145

* National accounts revised in 1960

[1]) Incl. inventory changes in 1950–60

Source: National Accounts

Balance of resources, 1950–1985. Million NOK.

1950–1962 at 1955-prices; 1962–1975 at 1970 prices; 1975–1980 at 1975-prices; 1980–1985 at 1980 prices.

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total[1])	Invest-ment, private	Invest-ment, public	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy
50	19 901	8 349	28 250	7 436	6 282	–	–	–	14 532	12 525	2 007		
51	20 940	8 786	29 726	8 249	6 627	–	–	–	14 850	12 566	2 284		
52	21 694	8 550	30 244	8 064	6 586	–	–	–	15 594	13 095	2 499		
53	22 695	9 127	31 822	8 592	6 826	–	–	–	16 404	13 596	2 808		
54	23 822	10 042	33 864	9 410	7 462	–	–	–	16 992	14 060	2 932		
55	24 278	10 772	35 050	10 051	7 636	–	–	–	17 363	14 543	2 820		
56	25 552	11 548	37 100	11 044	8 179	–	–	–	17 877	14 960	2 917		
57	26 291	11 707	37 998	11 518	8 090	–	–	–	18 390	15 335	3 055		
58	26 055	12 090	38 145	11 727	7 843	–	–	–	18 575	15 415	3 160		
59	27 394	12 610	40 004	12 838	7 783	–	–	–	19 383	16 053	3 330		
60	28 965	13 979	42 944	14 029	8 382	–	–	–	20 533	17 152	3 381		
61	30 782	15 398	46 180	15 030	9 398	–	–	–	21 752	18 152	3 600		
62	31 647	16 224	47 871	15 977	9 409	–	–	–	22 485	18 710	3 775		
62	57 910	19 541	77 451	20 812	15 672	–	–	–	40 967	32 627	8 340		
63	60 104	20 717	80 821	22 510	15 690	–	–	–	42 621	33 733	8 888		
64	63 116	22 180	85 296	24 338	16 508	–	–	–	44 450	34 993	9 457		
65	66 451	24 184	90 635	25 691	18 748	–	–	–	46 196	35 854	10 342		
66	68 966	26 072	95 038	27 141	20 095	–	–	–	47 802	37 142	10 660		
67	73 283	29 125	102 408	29 428	22 752	–	–	–	50 228	38 568	11 660		
68	74 937	29 774	104 711	31 684	20 895	–	–	–	52 132	39 983	12 149	712	
69	78 313	30 315	108 628	33 370	19 473	–	–	–	55 785	43 051	12 734	1 022	
70	79 877	34 431	114 308	33 404	24 325	–	–	–	56 579	43 046	13 533	3 130	
71	83 534	36 640	120 174	33 783	27 024	–	–	–	59 367	45 018	14 349	1 855	
72	87 852	36 270	124 122	38 543	24 228	–	–	–	61 351	46 351	15 000	89	
73	91 463	41 506	132 969	41 737	27 723	–	–	–	63 509	47 691	15 818	292	
74	96 214	43 463	139 677	42 021	31 671	–	–	–	65 985	49 531	16 454	2 842	
75	100 223	46 489	146 710	43 319	33 813	–	–	–	69 578	52 068	17 510	1 548	
75	148 701	72 139	220 840	62 189	52 335	43 670	7 121	8 138	106 316	77 615	28 701	1 544	
76	158 830	81 023	239 853	69 190	57 512	48 543	7 389	8 360	113 151	82 332	30 819	1 579	
77	164 516	83 807	248 323	71 704	56 241	50 179	7 790	8 581	120 378	88 039	32 339	−1 727	
78	171 986	72 459	244 445	77 718	46 053	43 028	8 443	9 361	120 674	86 606	34 068	−5 418	
79	180 699	71 954	252 653	79 724	48 263	41 096	7 817	9 594	124 666	89 389	35 277	−649	
80	188 298	74 298	262 596	81 393	52 525	40 232	7 949	9 586	128 679	91 488	37 191	4 344	
80	285 045	117 371	402 416	134 795	78 902	59 344	11 454	13 535	188 719	135 241	53 478	8 104	
81	287 546	119 113	406 659	136 651	76 462	72 717	10 769	13 695	193 547	136 784	56 763	−7 024	
82	288 505	123 467	411 972	136 451	77 337	64 384	9 913	14 533	198 184	139 199	58 985	3 041	
83	301 545	123 448	424 993	146 453	75 510	n.a.	n.a.	n.a.	203 030	141 303	61 727	−3 108	
84*	318 357	133 530	451 887	157 372	86 416	n.a.	n.a.	n.a.	208 099	145 153	62 946	921	
85*	331 859	143 765	475 624	173 078	80 355	n.a.	n.a.	n.a.	222 191	157 077	65 114	13 601	

[1]) Incl. inventory changes

Source: National Accounts

Sweden:
Balance of resources, 1950–1985. Million SEK.
At 1980 prices

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total	Invest-ment, private[1])	Invest-ment, public[1])	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy
50	197 330	33 692	231 022	30 646	35 476	13 815	9 788	11 873	167 281	126 205	41 076	−644	−1 737
51	202 868	38 655	241 523	32 707	36 357	14 931	9 891	11 535	168 084	124 839	43 245	4 587	−212
52	206 200	36 397	242 597	30 161	37 569	13 015	12 381	12 173	175 021	129 448	45 573	2 365	−2 519
53	213 338	36 384	249 722	31 315	42 198	14 270	14 173	13 755	182 264	132 807	49 457	−1 547	−4 508
54	225 539	42 423	267 962	34 659	46 766	17 107	14 185	15 474	190 156	138 251	51 905	539	−4 158
55	232 331	46 494	278 825	36 472	46 356	16 838	14 065	15 453	195 533	142 560	52 973	3 311	−2 847
56	240 076	49 855	289 931	39 902	47 698	17 173	14 403	16 122	202 289	146 707	55 582	2 961	−2 919
57	245 787	53 295	299 082	43 483	48 870	17 216	15 029	16 625	206 178	148 907	57 271	3 023	−2 472
58	251 714	54 700	306 414	43 505	53 669	19 970	15 988	17 711	212 459	152 544	59 915	929	−4 148
59	265 213	56 604	321 817	46 153	59 049	22 134	18 430	18 485	220 870	158 127	62 743	3	−4 258
60	274 904	65 795	340 699	51 832	61 153	24 288	18 125	18 740	223 878	160 652	63 226	5 120	−1 284
61	290 522	65 926	356 448	54 529	66 052	26 510	18 815	20 727	234 585	169 201	65 384	3 314	−2 032
62	302 896	69 970	372 866	58 941	70 240	27 674	20 030	22 536	244 320	174 714	69 606	2 075	−2 710
63	319 034	74 645	393 679	63 245	74 988	28 671	22 279	24 038	258 659	182 427	76 232	375	−3 588
64	340 796	81 879	422 675	70 861	80 659	29 960	24 525	26 174	268 243	189 725	78 518	5 687	−2 775
65	353 819	91 110	444 929	74 809	83 915	31 518	25 067	27 330	280 059	197 739	82 320	8 373	−2 227
66	361 217	94 983	456 200	78 445	87 742	34 851	25 995	26 896	288 454	201 493	86 961	4 058	−2 499
67	373 374	97 320	470 694	82 770	92 431	34 475	28 499	29 457	297 111	206 103	91 008	1 174	−2 792
68	386 959	105 382	492 341	89 070	93 032	32 172	30 921	29 939	311 774	214 512	97 262	848	−2 383
69	406 342	118 972	525 314	99 285	97 029	34 274	32 075	30 680	326 393	223 893	102 500	3 719	−1 112
70	432 647	131 301	563 948	107 872	100 185	35 324	34 994	29 867	342 486	231 661	110 825	13 405	0
71	436 734	126 941	563 675	113 016	99 607	34 929	33 841	30 837	345 108	231 867	113 241	5 944	0
72	446 730	131 985	578 715	119 643	103 757	36 861	35 583	31 313	355 836	239 824	116 012	−521	0
73	464 456	141 126	605 582	136 027	106 517	40 502	33 900	32 115	364 999	246 011	118 988	−1 961	0
74	479 310	155 161	634 471	143 248	103 290	44 787	33 031	25 472	376 966	254 317	122 649	10 967	0
75	491 546	149 778	641 324	129 951	106 483	44 141	33 635	28 707	389 817	261 433	128 384	15 073	0
76	496 747	163 270	660 017	135 563	108 461	43 958	33 723	30 780	405 213	272 298	132 915	10 780	0
77	488 818	157 141	645 959	137 537	105 267	41 388	34 203	29 676	406 344	269 471	136 873	−3 189	0
78	497 380	148 537	645 917	148 266	98 065	33 990	34 096	29 979	408 951	267 564	141 387	−9 365	0
79	516 479	165 801	682 280	157 364	102 444	37 731	34 187	30 526	422 112	274 028	148 084	360	0
80	525 099	166 520	691 619	156 523	105 986	39 310	37 475	29 201	423 205	271 831	151 374	5 905	0
81	523 513	154 651	678 164	158 281	100 324	36 626	35 381	28 317	424 871	270 432	154 439	−5 312	0
82	527 733	161 357	689 090	165 260	99 276	35 920	35 452	27 854	429 785	274 144	155 641	−5 181	0
83	540 532	161 940	702 472	182 904	100 786	37 911	35 105	27 770	426 151	269 269	156 882	−7 369	0
84	561 886	169 302	731 188	195 230	105 921	42 081	34 133	29 707	433 721	273 207	160 514	−3 684	0
85*	574 220	182 318	756 538	199 802	112 624	47 191	35 116	30 317	444 249	280 639	163 610	−137	0

[1]) Excl. residential investments
Source: National Accounts

Denmark:
Balance of resources* at current prices, 1950–85.
Million DKK.

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total	Invest-ment, private	Invest-ment, public	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy
50	23 132	6 759	29 891	6 017	4 950	3 700	1 250	650	17 989	15 786	2 203	935	
51	25 050	8 030	33 080	7 827	5 688	4 293	1 395	715	19 425	16 800	2 625	140	
52	26 690	7 751	34 441	7 976	6 215	4 750	1 465	750	20 268	17 309	2 959	−18	
53	28 550	8 050	36 600	8 226	6 612	5 017	1 595	860	21 291	18 056	3 235	471	
54	29 891	9 248	39 139	8 815	6 997	5 302	1 695	960	22 939	19 398	3 541	388	
55	31 270	9 483	40 753	9 766	6 975	5 230	1 745	840	24 016	20 284	3 732	−4	
56	33 403	10 568	43 971	10 539	7 508	5 628	1 880	830	25 458	21 472	3 986	466	
57	35 542	11 114	46 656	11 483	8 221	6 241	1 980	1 005	26 234	22 009	4 225	718	
58	37 132	10 955	48 087	11 880	8 732	6 567	2 165	925	27 636	23 136	4 500	−161	
59	41 101	12 719	53 820	12 891	10 153	7 823	2 330	1 220	29 917	25 040	4 877	859	
60	44 430	14 240	58 670	13 836	11 293	8 723	2 570	1 315	32 128	26 926	5 202	1 413	
61	49 375	14 890	64 265	14 253	13 134	10 094	3 040	1 650	36 197	29 942	6 255	681	
62	55 686	16 862	72 548	15 323	14 962	11 552	3 410	1 885	41 053	33 651	7 402	1 210	
63	59 185	17 003	76 188	17 327	15 310	11 610	3 700	1 890	43 554	35 544	8 010	−3	
64	67 696	20 595	88 291	19 447	18 834	14 344	4 490	2 570	49 085	39 870	9 215	925	
65	76 065	22 363	98 428	21 439	20 931	15 766	5 165	3 025	54 583	43 747	10 836	1 475	
66	77 183	23 129	100 312	21 934	18 609	15 768	2 841	5 483	59 184	45 975	13 209	585	
67	84 813	24 770	109 583	23 076	20 542	17 036	3 506	6 480	65 959	50 832	15 127	6	
68	94 358	27 277	121 635	25 980	22 086	18 000	4 086	6 906	73 039	55 477	17 562	530	
69	107 319	31 753	139 072	29 429	26 358	21 585	4 773	9 064	81 937	61 684	20 253	1 348	
70	118 627	36 661	155 288	33 104	29 283	23 671	5 612	9 538	91 753	68 078	23 675	1 148	
71	131 120	38 604	169 724	36 184	31 752	25 566	6 186	9 985	101 030	73 165	27 865	759	
72	150 729	39 943	190 672	40 835	37 006	30 420	6 586	13 806	112 512	80 437	32 075	318	
73	172 860	52 605	225 465	49 314	42 808	36 359	6 449	16 608	131 010	94 202	36 808	2 332	
74	193 629	67 157	260 786	61 481	46 461	39 133	7 328	15 273	150 478	105 224	45 254	2 365	
75	216 256	67 080	283 336	65 049	45 588	37 482	8 106	14 462	173 124	119 942	53 182	−424	
76	251 214	84 144	335 358	72 455	57 678	48 635	9 043	18 522	202 656	142 133	60 523	2 569	
77	279 210	90 656	369 966	80 463	61 659	51 308	10 351	18 218	225 667	158 900	66 767	2 177	
78	311 376	93 247	404 623	86 516	67 495	55 850	11 645	19 910	251 137	174 890	76 247	−524	
79	346 892	111 248	458 140	101 444	72 471	58 859	13 612	21 501	282 648	195 814	86 834	1 577	
80	373 785	126 205	499 990	122 256	70 312	57 429	12 883	19 833	308 548	208 814	99 734	−1 125	
81	407 790	146 050	553 840	149 042	63 817	51 667	12 150	16 496	341 781	228 566	113 215	−800	
82	464 467	166 928	631 395	168 923	74 614	62 510	12 104	16 772	386 737	255 639	131 098	1 120	
83	512 541	176 140	688 682	186 311	82 049	70 427	10 804	20 428	420 507	279 963	140 544	−187	
84	560 373	202 674	763 047	208 753	95 400	83 852	11 704	25 848	452 396	306 140	146 254	6 500	
85	613 259	224 906	838 165	226 351	113 587	102 495	12 928	28 685	492 227	336 787	155 440	6 000	

* National accounts revised in 1966.
Source: National Accounts

Finland:
Balance of resources* at current prices, 1950–1985.
Million FIM

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total	Invest-ment, private	Invest-ment, public	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy[1])
50	5 424	1 021	6 446	1 085	1 220	1 000	220	301	4 097	3 469	628		44
51	7 901	1 780	9 682	2 286	1 820	1 556	264	461	5 528	4 721	807		47
52	8 181	2 057	10 237	1 973	2 176	1 830	346	553	6 096	5 191	905		−8
53	8 074	1 429	9 503	1 568	2 202	1 724	478	569	6 137	5 148	989		−404
54	8 969	1 690	10 659	1 846	2 355	1 896	459	576	6 474	5 482	992		−17
55	9 922	1 991	11 913	2 157	2 535	2 072	463	625	7 071	5 930	1 142		151
56	11 031	2 282	13 313	2 173	2 865	2 390	575	618	8 135	6 776	1 359		140
57	12 025	2 582	14 607	2 588	2 920	2 264	656	714	8 883	7 377	1 506		216
58	12 954	2 641	15 595	2 925	3 218	2 428	790	632	9 368	7 709	1 659		84
59	14 079	3 048	17 127	3 154	3 587	2 787	800	673	10 223	8 367	1 856		163
60	15 824	3 835	19 659	3 712	4 326	3 537	788	821	11 192	9 195	1 997		430
60	16 199	3 755	19 954	3 640	4 589	3 913	676	925	11 788	9 857	1 931	168	−231
61	18 362	4 092	22 454	3 911	5 133	4 452	681	1 132	13 061	10 905	2 156	221	128
62	19 661	4 393	24 054	4 169	5 419	4 670	749	1 294	14 493	12 030	2 463	88	−115
63	21 352	4 319	25 671	4 335	5 461	4 615	846	1 407	16 052	13 190	2 862	−169	−8
64	24 083	5 321	29 404	4 863	6 068	4 991	1 077	1 391	18 268	15 019	3 249	−55	260
65	26 634	5 842	32 476	5 390	7 016	5 763	1 253	1 587	20 171	16 534	3 637	522	−623
66	28 554	6 140	34 694	5 683	7 559	6 289	1 270	1 743	21 666	17 579	4 087	212	−426
67	31 321	6 460	37 781	6 176	7 862	6 482	1 380	1 912	23 806	19 148	4 658	−54	−9
68	35 908	7 572	43 480	8 143	8 290	6 763	1 527	2 049	26 417	20 935	5 482	462	168
69	40 986	9 517	50 503	9 905	9 768	8 213	1 555	2 429	29 613	23 679	5 934	461	756
70	45 743	12 310	58 053	11 745	12 010	10 524	1 486	3 107	32 514	25 901	6 613	1 594	190
71	50 257	13 139	63 396	12 226	13 817	12 172	1 645	3 469	35 734	28 116	7 618	1 163	456
72	58 625	14 797	73 422	14 946	16 359	14 237	2 122	4 332	42 001	33 042	8 959	−347	463
73	71 364	18 603	89 967	18 153	20 566	18 243	2 323	5 621	49 963	39 269	10 694	−74	1 359
74	90 055	28 094	118 149	24 799	26 859	23 963	2 896	7 692	61 498	47 812	13 686	4 258	735
75	104 291	30 923	135 214	24 757	32 667	29 032	3 635	8 411	75 035	57 236	17 799	2 327	428
76	117 775	31 823	149 598	29 537	32 910	29 064	3 846	8 461	86 903	65 596	21 307	−1 502	1 750
77	130 001	34 727	164 728	36 974	35 106	30 794	4 312	9 885	96 483	72 477	24 006	−1 832	−2 003
78	143 620	37 390	181 010	42 960	34 413	29 835	4 578	10 576	106 577	80 231	26 346	−2 797	−143
79	166 959	49 948	216 907	52 486	38 689	33 638	5 051	11 562	121 370	91 494	29 876	3 610	752
80	192 556	65 016	257 572	63 386	48 638	42 537	6 101	14 054	138 933	104 038	34 895	6 287	328
81	218 455	70 239	288 694	73 321	54 686	47 745	6 941	15 161	158 853	118 016	40 837	1 144	690
82	245 172	74 367	319 539	76 397	60 987	52 877	8 110	17 315	180 822	134 161	46 661	2 001	−668
83	274 436	82 770	357 206	84 061	68 987	59 751	9 236	19 104	202 912	149 607	53 305	1 670	−424
84*	307 713	87 768	395 481	95 739	72 274	62 669	9 605	20 137	223 972	164 296	59 676	1 520	1 865
85*	335 394	96 097	431 491	99 841	78 648	68 092	10 556	20 910	247 935	180 034	67 901	877	4 895

* National accounts revised in 1960.
[1]) Incl. inventory changes in 1950–60
Source: National Accounts

Norway:
Balance of resources at current prices, 1950–1985.
Million NOK.

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total[1])	Invest-ment, private	Invest-ment, public	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy
50	15 073	6 763	21 836	5 963	4 663				11 210	9 699	1 511	373	
51	18 765	8 690	27 455	9 035	5 670				12 750	10 850	1 900	1 158	
52	20 732	8 928	29 660	8 977	6 278				14 405	12 070	2 335	659	
53	21 013	9 010	30 023	8 157	6 444				15 422	12 758	2 664	−163	
54	22 799	9 857	32 656	8 760	7 312				16 584	13 739	2 845	225	
55	24 278	10 772	35 050	10 051	7 636				17 363	14 543	2 820	84	
56	27 462	11 966	39 428	12 216	8 440				18 772	15 571	3 201	804	
57	29 248	12 878	42 126	13 193	8 909				20 024	16 486	3 538	384	
58	29 207	12 770	41 977	11 883	9 207				20 887	17 149	3 738	−375	
59	30 958	13 031	43 989	12 734	8 893				22 362	18 272	4 090	−286	
60	33 058	14 252	47 310	13 651	9 848				23 811	19 562	4 249	275	
61	36 062	15 457	51 519	14 355	11 230				25 934	21 301	4 633	409	
62	38 843	15 923	54 766	14 941	11 465				28 360	22 929	5 431	133	
63	41 682	17 278	58 960	16 362	12 214				30 384	24 407	5 977	−82	
64	45 837	18 872	64 709	18 805	12 772	10 890	1 889	1 875	33 132	26 498	6 634	−7	
65	50 563	21 023	71 586	20 570	15 111	12 278	1 996	2 106	35 905	28 297	7 608	837	
66	54 568	23 084	77 652	22 256	16 631	13 449	2 185	2 377	38 765	30 327	8 438	997	
67	59 700	26 122	85 822	25 017	18 275	15 106	2 597	2 897	42 531	32 916	9 615	571	
68	63 749	26 208	89 957	27 490	16 723	14 386	2 736	2 990	45 744	35 182	10 562	−399	
69	69 418	27 858	97 276	29 368	17 015	13 612	3 254	3 383	50 892	39 218	11 674	149	
70	79 877	34 431	114 308	33 403	24 325	17 617	3 578	3 983	56 579	43 046	13 533	3 131	
71	89 107	38 742	127 849	35 808	28 159	22 243	4 207	4 666	63 882	47 904	15 978	1 709	
72	98 403	39 290	137 693	40 055	27 217	22 288	5 014	5 334	70 420	52 559	17 861	−84	
73	111 854	49 272	161 126	48 730	33 718	27 462	5 290	5 833	78 677	58 287	20 390	966	
74	129 729	63 775	193 504	60 016	43 623	33 596	6 009	6 792	89 865	66 106	23 759	4 018	
75	148 701	72 139	220 890	62 189	52 335	43 670	7 121	8 138	106 316	77 615	28 701	1 544	
76	170 709	86 413	257 122	70 173	53 377	53 846	8 155	9 144	123 572	89 486	34 086	1 376	
77	191 534	96 768	288 302	76 264	69 498	61 752	9 322	10 321	142 540	103 915	38 625	−1 576	
78	213 079	89 119	302 198	87 221	60 765	56 969	10 737	11 765	154 213	110 670	43 543	−6 941	
79	238 668	99 154	337 822	105 407	65 726	55 843	10 343	12 552	166 689	120 104	46 585	−459	
80	285 045	117 371	402 410	134 795	78 902	59 344	11 454	13 535	188 720	135 242	53 478	8 104	
81	327 674	130 467	458 141	156 288	84 038	80 190	11 602	15 055	217 821	155 205	62 616	−7 761	
82	362 270	144 543	506 813	165 023	96 071	80 737	11 525	17 465	245 719	175 310	70 409	3 809	
83	402 197	152 031	554 228	183 921	99 115	n.a.	n.a.	n.a.	271 192	192 979	78 213	−4 332	
84*	452 726	171 577	624 303	213 196	115 578	n.a.	n.a.	n.a.	295 529	211 371	84 158	−2 053	
85*	497 835	195 576	693 411	234 984	123 916	n.a.	n.a.	n.a.	334 511	241 917	92 594	15 953	

[1]) Incl. inventory changes
Source: National Accounts

Sweden:
Balance of resources at current prices, 1950–1985.
Million SEK

Year	GDP at market price	Import	Total resources	Export	Invest-ment, total	Invest-ment, private[1])	Invest-ment, public[1])	Invest-ment, residental	Consump-tion, total	Consump-tion, private	Consump-tion, public	Inventory changes	Statisti-cal dis-crepancy
50	32 155	6 889	39 044	7 091	5 997	2 566	1 649	1 782	25 980	22 035	3 945	−176	152
51	39 612	10 274	49 886	11 209	7 474	3 304	2 034	2 136	29 510	24 563	4 947	1 605	88
52	43 091	10 001	53 092	10 188	8 707	3 348	2 892	2 467	33 199	27 192	6 007	994	4
53	44 555	9 183	53 738	9 535	9 560	3 583	3 270	2 707	34 966	28 363	6 603	−516	193
54	47 207	10 595	57 802	10 438	10 293	4 057	3 264	2 972	36 904	29 986	6 918	166	1
55	50 755	11 821	62 576	11 391	10 595	4 121	3 388	3 086	39 410	31 896	7 514	1 154	26
56	55 164	13 184	68 348	12 957	11 491	4 484	3 637	3 370	42 775	34 479	8 296	1 104	21
57	58 919	14 501	73 420	14 386	12 223	4 712	3 948	3 563	45 564	36 324	9 240	1 169	78
58	62 242	14 187	76 429	13 840	13 483	5 480	4 232	3 771	48 667	38 842	9 825	343	96
59	66 307	14 372	80 679	14 388	14 859	6 051	4 908	3 900	51 256	40 797	10 459	1	175
60	72 128	16 974	89 102	16 536	16 356	7 065	5 097	4 194	54 241	43 103	11 138	1 897	72
61	78 466	17 093	95 559	17 469	18 252	7 989	5 450	4 813	58 546	46 424	12 122	1 237	55
62	85 097	18 282	103 379	18 573	20 248	8 674	6 070	5 504	63 720	49 845	13 875	811	27
63	92 106	19 905	112 011	20 138	22 349	9 222	7 020	6 107	69 102	53 609	15 493	186	236
64	102 716	22 583	125 299	22 847	25 253	10 011	8 056	7 186	74 926	57 741	17 185	1 992	281
65	113 032	25 591	138 623	24 616	27 924	11 135	8 647	8 142	82 995	63 460	19 535	2 756	332
66	122 952	27 088	150 040	26 240	30 490	12 734	9 378	8 378	91 539	68 912	22 627	1 378	393
67	133 458	28 135	161 593	28 067	33 150	12 933	10 573	9 644	99 668	74 289	25 379	248	460
68	141 621	30 698	172 319	30 430	33 867	12 326	11 709	9 832	107 053	78 679	28 374	440	529
69	153 798	35 585	189 383	35 005	35 720	12 953	12 489	10 278	116 065	84 906	31 159	1 998	595
70	172 226	42 478	214 704	41 515	38 767	14 137	14 498	10 132	129 153	92 237	36 916	5 269	0
71	186 215	43 170	229 385	45 317	40 879	15 046	14 892	10 941	141 205	99 372	41 833	1 984	0
72	203 758	46 210	249 968	49 284	45 232	16 874	16 492	11 866	155 629	109 373	46 256	−177	0
73	226 744	55 876	282 620	62 133	49 611	19 854	16 749	13 008	172 065	120 679	51 386	−1 189	0
74	256 127	84 451	340 578	82 493	55 001	25 581	18 478	10 942	197 018	137 625	59 393	6 066	0
75	300 785	85 263	386 048	84 679	62 918	27 966	20 920	14 032	228 438	156 908	71 530	10 013	0
76	340 197	99 769	439 966	94 073	72 024	30 882	23 260	17 882	266 004	181 464	84 540	7 865	0
77	370 016	107 508	477 524	101 332	78 047	32 202	26 013	19 832	300 544	198 929	101 615	−2 399	0
78	412 450	112 173	524 623	116 399	80 099	29 240	28 213	22 646	335 548	220 480	115 068	−7 423	0
79	462 307	145 196	607 503	140 568	91 561	34 479	30 717	26 365	374 412	243 755	130 657	962	0
80	525 099	166 520	691 619	156 523	105 986	39 310	37 475	29 201	423 205	271 831	151 374	5 905	0
81	573 040	172 228	745 268	172 527	109 890	39 769	38 847	31 274	468 438	301 024	167 414	−5 587	0
82	627 678	205 157	832 835	201 331	118 236	43 210	42 280	32 746	519 361	336 650	182 711	−6 093	0
83	705 364	233 121	938 485	249 528	132 168	50 759	46 087	35 322	566 380	365 820	200 560	−9 591	0
84	789 581	254 267	1043 848	284 664	146 584	58 906	47 428	40 250	620 026	401 987	218 039	−7 426	0
85*	862 522	282 901	1145 423	303 624	164 757	69 721	51 583	43 453	678 396	442 379	236 017	−1 354	0

[1]) Excl. residential investments
Source: National Accounts

Denmark:
GDP by economic sectors, 1950–1985*. Million DKK.

1950–1966 at 1955-prices; 1966–1985 at 1980-prices.

Year	Manufacturing	Agriculture, forestry, fishing	Mining and quarrying	Construction	Water transport	All (other) private services	Public sector production	Correction item	GDP basic values
50	7 195	5 191	n.a.	1 834	n.a.	9 224	2 102	303	25 849
51	7 185	5 087	n.a.	1 850	n.a.	9 290	2 214	323	25 949
52	6 925	5 400	n.a.	1 884	n.a.	9 424	2 281	359	26 273
53	7 234	5 747	n.a.	2 105	n.a.	9 898	2 465	384	27 833
54	7 716	5 327	n.a.	2 147	n.a.	10 360	2 544	436	28 530
55	7 758	5 333	n.a.	2 061	n.a.	10 438	2 616	501	28 707
56	7 801	5 586	n.a.	2 073	n.a.	10 576	2 697	531	29 255
57	8 178	6 073	n.a.	2 122	n.a.	11 184	2 760	504	30 821
58	8 495	5 914	n.a.	2 181	n.a.	11 671	2 795	486	31 542
59	9 439	5 645	n.a.	2 430	n.a.	12 391	2 934	603	33 442
60	10 181	6 027	n.a.	2 605	n.a.	13 121	3 050	630	35 614
61	10 668	6 259	n.a.	2 880	n.a.	13 863	3 277	645	37 592
62	11 551	6 315	n.a.	3 030	n.a.	14 437	3 622	743	39 698
63	11 658	5 966	n.a.	3 000	n.a.	14 713	3 659	854	39 850
64	12 929	6 334	n.a.	3 530	n.a.	15 729	3 921	915	43 358
65	13 725	6 554	n.a.	3 760	n.a.	16 445	4 089	969	45 542
66	14 075	6 295	n.a.	3 835	n.a.	17 006	4 363	1 090	46 664
66	40 509	15 238	182	26 321	4 207	91 984	35 427	−3 258	210 580
67	40 936	15 925	139	27 346	3 670	95 193	38 732	−3 495	218 446
68	44 110	16 234	119	26 782	4 902	99 081	40 945	−3 786	228 387
69	46 505	16 215	218	27 908	5 432	105 828	43 416	−4 830	240 693
70	47 880	13 198	224	29 094	5 399	106 382	46 321	−5 180	243 318
71	48 853	14 964	166	29 913	4 861	108 256	49 575	−5 251	251 338
72	53 042	15 417	344	32 171	4 713	112 466	52 479	−6 160	264 473
73	55 978	14 285	344	29 328	4 982	121 679	55 494	−7 189	274 903
74	56 846	17 388	240	27 365	4 849	120 284	57 637	−7 230	277 378
75	55 471	16 259	264	24 442	4 405	119 220	59 072	−6 802	272 330
76	58 130	14 631	287	25 694	4 561	128 133	62 154	−6 638	286 950
77	58 387	16 633	784	25 091	4 537	129 166	65 470	−6 321	293 748
78	58 223	17 025	761	25 094	3 779	132 186	68 764	−6 323	299 510
79	61 530	17 107	857	23 286	5 028	137 877	73 026	−5 916	312 794
80	64 311	17 818	373	24 383	4 408	133 108	76 897	−5 310	315 989
81	62 267	19 294	948	20 169	5 686	130 258	80 628	−4 655	314 595
82	63 257	21 228	2 271	19 073	5 322	132 474	84 344	−3 373	324 598
83	67 510	19 404	2 475	18 499	4 845	137 276	84 638	−3 457	331 422
84*	70 054	23 709	3 122	18 253	2 880	145 566	84 442	−5 692	342 256
85*	72 150	22 657	4 791	19 374	3 058	153 327	86 395	−7 539	353 920

* See notes in table on GDP by sectors at current prices.

Finland:
GDP by economic sectors,* 1950–1985. Million FIM.

1950–1960 at 1954-prices, 1960–1985 at 1980-prices.

Year	Manufacturing	Agriculture, forestry, fishing, mining	Construction	Private services	Public sector production	GDP at market prices
50	1 666	1 697	840	1 708	577	7 263
51	1 895	1 848	658	1 876	595	7 940
52	1 836	1 921	688	1 979	623	8 214
53	1 902	1 777	761	2 013	644	8 224
54	2 159	1 944	791	2 186	669	8 968
55	2 373	1 925	789	2 449	706	9 645
56	2 429	1 861	824	2 549	729	9 837
57	2 468	1 960	848	2 557	759	9 987
58	2 375	2 029	907	2 549	796	9 979
59	2 609	2 082	959	2 776	836	10 702
60	2 956	2 292	1 004	3 033	861	11 765
60	16 779	14 731	8 419	28 131	9 699	84 338
61	18 202	15 813	8 729	30 137	10 199	90 752
62	18 953	14 799	8 770	31 934	10 672	93 458
63	19 714	14 682	9 055	33 418	11 180	96 528
64	21 073	15 522	9 300	35 031	11 631	101 585
65	22 279	15 294	10 042	37 149	12 125	106 972
66	23 389	14 271	10 168	38 736	12 627	109 510
67	24 045	14 328	10 421	39 716	13 177	111 885
68	25 387	15 036	10 082	40 378	13 849	114 462
69	28 649	15 828	10 781	43 307	14 599	125 443
70	31 784	15 607	11 494	46 413	15 302	134 957
71	32 310	15 351	11 248	48 294	16 015	137 742
72	35 962	15 041	12 234	51 714	16 976	148 210
73	38 282	14 910	13 341	55 170	18 068	157 993
74	39 986	14 315	13 595	57 410	19 269	162 850
75	37 937	13 856	14 156	58 782	20 253	164 591
76	38 768	14 147	12 965	59 268	21 420	165 139
77	38 433	14 401	13 019	58 603	22 402	165 461
78	40 289	14 467	12 787	60 258	23 373	169 719
79	44 791	16 226	12 867	64 150	24 359	182 303
80	48 408	17 434	13 654	67 430	25 273	192 556
81	49 740	16 290	13 491	69 728	26 444	196 028
82	50 150	16 514	14 189	72 159	27 460	201 831
83	51 864	17 129	14 712	74 736	28 302	207 752
84	54 040	17 291	14 274	77 626	28 975	213 448
85*	56 124	16 978	14 373	80 559	29 789	219 754

* National accounts revised in 1960

Source: National Accounts

Norway.

GDP by economic sectors, 1950–1985. Million NOK.

1950–1962 at 1955-prices; 1962–1975 at 1970-prices; 1975–1980 at 1975-prices; 1980–1985 at 1980-prices.

Year	Manufacturing	Agriculture, forestry, fishing, mining	Petroleum production	Construction, electricity supply	Water transport	All (other) private services	Public sector production	Correction item	GDP at market prices
50	4 466	3 000	0	1 998	1 575	n.a.	n.a.	99	19 901
51	4 819	3 065	0	1 982	2 596	n.a.	n.a.	97	20 940
52	4 701	3 377	0	2 072	2 659	n.a.	n.a.	169	21 694
53	4 963	3 242	0	2 179	2 200	n.a.	n.a.	205	22 695
54	5 278	3 266	0	2 331	2 078	n.a.	n.a.	247	23 822
55	5 466	3 073	0	2 338	2 643	n.a.	n.a.	236	24 278
56	5 775	3 525	0	2 224	3 600	n.a.	n.a.	251	25 552
57	5 864	3 378	0	2 413	3 962	n.a.	n.a.	252	26 291
58	5 797	3 186	0	2 442	3 214	n.a.	n.a.	282	26 055
59	6 079	3 197	0	2 435	3 244	n.a.	n.a.	322	27 394
60	6 606	3 132	0	2 512	3 384	n.a.	n.a.	324	28 965
61	6 880	3 231	0	2 568	3 609	n.a.	n.a.	401	30 782
62	6 935	3 116	0	2 720	3 696	n.a.	n.a.	445	31 647
62	11 608	5 295	0	6 257	6 056	21 813	5 979	902	57 910
63	12 304	5 174	0	6 521	6 433	22 309	6 412	951	60 104
64	13 178	5 406	0	6 775	6 629	23 149	6 774	1 205	63 116
65	13 871	5 944	0	6 964	7 305	23 670	7 341	1 356	66 451
66	14 699	5 897	0	7 375	7 413	24 451	7 516	1 615	68 966
67	15 175	6 161	0	8 184	8 067	25 739	8 258	1 699	73 283
68	15 543	6 185	0	8 226	8 135	26 192	8 501	2 155	74 937
69	16 677	5 667	0	8 329	8 042	27 702	8 986	2 910	78 313
70	17 441	5 742	0	8 902	7 793	27 921	9 411	2 667	79 877
71	18 104	6 060	48	9 411	7 637	29 350	9 930	2 994	83 534
72	18 953	6 196	492	9 641	8 335	30 626	10 572	3 037	87 852
73	19 958	6 141	436	9 976	9 002	31 536	11 256	3 158	91 463
74	20 866	6 742	736	10 432	9 479	32 960	11 670	3 329	96 214
75	20 252	6 530	2 677	10 651	9 167	34 526	12 402	4 018	100 223
75	32 301	9 209	4 254	15 901	9 253	52 283	20 705	4 795	148 701
76	32 446	9 531	6 471	16 561	10 853	55 090	22 663	5 215	158 830
77	31 993	9 668	7 478	16 716	11 264	58 272	23 852	5 273	164 516
78	31 430	9 383	12 315	18 182	10 766	59 584	25 120	5 206	171 986
79	32 099	9 678	15 609	18 699	10 313	62 036	26 209	6 056	180 699
80	31 611	9 764	19 271	18 652	10 506	63 191	27 686	7 617	188298
80	44 487	13 747	44 784	27 375	11 988	96 930	38 901	6 834	285 045
81	43 985	14 920	42 940	27 953	12 342	98 194	41 141	6 071	287 546
82	43 844	15 470	43 190	28 419	11 481	98 182	43 393	4 526	288 505
83	43 422	15 478	50 270	30 180	11 581	99 317	44 993	6 304	301 545
84	44 486	16 913	57 529	30 539	12 332	103 351	46 207	7 000	318 357
85	45 557	16 856	60 912	30 676	11 651	109 886	47 577	8 744	331 859

Sweden:
GDP by economic sectors, 1950–1985. Million SEK.

At 1980-prices.

Year	Manufacturing and mining	Agriculture, forestry, fishing	Construction	Private services	Public sector production	GDP at market prices
50	36 722	18 377	16 903	67 201	32 707	197 330
51	39 152	18 617	16 405	69 596	34 136	202 868
52	38 117	19 132	16 798	70 900	35 710	206 200
53	38 960	18 169	18 992	72 164	37 081	213 338
54	40 701	18 584	20 023	76 483	38 456	225 539
55	42 505	17 107	20 135	79 072	39 404	232 331
56	44 731	17 474	20 455	81 791	41 131	240 076
57	47 057	18 369	20 459	83 660	42 230	245 787
58	48 052	18 125	21 680	85 960	44 229	251 714
59	50 764	17 455	23 491	89 534	46 017	265 213
60	54 658	18 221	23 410	93 580	46 592	274 904
61	58 362	18 717	25 093	97 327	48 574	290 522
62	62 789	18 739	26 279	100 412	50 785	302 896
63	67 725	17 615	28 279	106 748	56 786	319 034
64	73 869	18 429	29 781	110 756	58 376	340 796
65	79 127	18 083	30 829	112 539	60 769	353 819
66	81 271	17 346	32 253	113 868	63 269	361 217
67	83 936	18 459	33 935	110 509	67 365	373 374
68	88 389	18 295	33 672	110 315	71 336	386 959
69	95 440	17 260	35 421	107 939	75 514	406 342
70	101 528	17 449	35 638	131 992	81 535	432 647
71	102 423	18 551	35 542	134 932	84 311	436 734
72	102 961	17 853	36 704	139 714	87 616	446 730
73	110 402	18 095	36 481	146 195	90 155	464 456
74	116 194	18 916	33 874	154 749	94 070	479 310
75	115 962	17 181	36 332	156 441	98 090	491 546
76	115 913	17 189	37 916	160 337	101 551	496 747
77	109 034	16 047	37 852	160 701	104 330	488 818
78	105 760	16 327	37 651	160 888	108 629	497 380
79	113 004	16 257	38 393	166 111	113 213	516 479
80	113 467	16 829	38 675	170 034	116 036	525 099
81	109 540	17 067	37 896	168 778	118 849	523 513
82	108 645	18 165	38 578	170 570	120 301	527 733
83	114 174	18 993	38 778	173 903	122 611	540 532
84	121 194	19 707	39 770	178 896	125 221	561 886
85	123 961	18 938	39 982	182 333	126 116	574 220

Source: National Accounts

Denmark:
GDP by economic sectors at current prices, 1950–1985*. Million DKK.

Year	Manufacturing	Agriculture, forestry, fishing, mining	Mining and quarrying[1])	Construction	Water transport	All (other) private services	Public sector production	Correction item	GDP basic values
50	5 984	4 582	n.a.	1 424	n.a.	7 713	1 578	337	21 618
51	6 354	4 769	n.a.	1 605	n.a.	8 507	1 817	351	23 403
52	6 455	5 422	n.a.	1 811	n.a.	8 875	2 031	391	24 985
53	7 026	5 564	n.a.	1 989	n.a.	9 277	2 242	438	26 536
54	7 549	5 185	n.a.	2 103	n.a.	9 854	2 456	471	27 618
55	7 758	5 333	n.a.	2 061	n.a.	10 438	2 616	501	28 707
56	8 110	5 769	n.a.	2 152	n.a.	11 182	2 877	553	30 643
57	8 870	5 646	n.a.	2 313	n.a.	12 172	3 053	612	32 666
58	9 427	5 484	n.a.	2 389	n.a.	12 658	3 347	658	33 963
59	10 778	5 828	n.a.	2 743	n.a.	13 840	3 575	694	37 458
60	12 028	5 879	n.a.	3 033	n.a.	15 039	3 818	726	40 523
61	13 265	6 182	n.a.	3 695	n.a.	16 644	4 824	765	45 375
62	15 222	6 437	n.a.	4 120	n.a.	18 417	5 743	829	50 768
63	15 725	6 693	n.a.	4 255	n.a.	19 743	6 143	917	53 476
64	17 937	7 567	n.a.	5 310	n.a.	22 105	7 120	1 032	61 071
65	19 943	7 601	n.a.	6 160	n.a.	24 833	8 547	1 207	68 291
66	21 750	7 725	n.a.	6 785	n.a.	27 406	9 963	1 374	75 003
66	15 198	6 072	124	7 857	1 328	27 014	10 104	−374	67 323
67	16 346	5 869	111	8 679	1 485	29 927	11 503	−466	73 453
68	18 079	6 132	101	9 148	1 817	32 819	13 333	−607	80 822
69	20 273	7 099	146	10 210	1 946	37 807	15 258	−951	91 788
70	21 967	6 612	152	11 129	2 124	42 507	17 931	−1 090	101 332
71	23 554	7 163	140	12 276	1 890	46 924	21 230	−1 303	111 874
72	26 652	8 563	182	14 432	2 199	54 018	24 565	−1 772	128 840
73	30 913	10 525	141	15 336	2 556	63 887	28 600	−2 854	149 103
74	34 959	11 443	156	16 063	3 183	72 239	34 863	−3 252	169 653
75	39 046	10 927	163	16 669	3 019	81 090	41 315	−3 516	188 713
76	43 966	12 301	163	18 870	3 022	96 038	47 638	−3 877	218 120
77	47 640	14 565	399	19 831	3 371	105 626	53 427	−4 658	240 202
78	51 412	16 780	431	21 031	3 219	116 618	60 099	−4 534	265 057
79	56 983	16 070	599	21 314	4 532	129 864	68 233	−5 279	292 317
80	64 311	17 818	373	24 383	4 408	133 108	76 897	−5 310	315 989
81	67 149	20 962	1 209	22 541	5 684	144 554	88 140	−5 120	345 119
82	76 263	26 269	3 207	24 232	5 088	162 409	103 398	−3 453	397 412
83	86 043	24 940	3 320	24 921	4 533	185 679	112 163	−3 748	437 870
84	94 906	31 161	4 599	26 147	3 261	209 377	116 957	−9 479	476 686
85	103 092	29 721	6 826	29 420	4 506	234 488	124 032	−14 615	518 742

* Sector definitions changed in 1966. For 1950–66 mining and quarrying are included in agriculture. Correction item consists of supply of electricity, gas and water. For 1966–85 correction item consists of imputed financial services and supply of electricity, gas and water.

[1]) In 1980 8 % was extraction of oil, coal and gas; in 1985 this share is estimated to be 80–85 %.

Source: National Accounts

Finland:
GDP by economic sectors at current prices, 1950–1985. Million FIM.[1])

Year	Manufacturing	Agriculture, forestry, fishing, mining	Construction	Private services	Public sector production	GDP
50	1 325	1 261	474	1 295	418	5 424
51	2 056	1 904	626	1 700	545	7 901
52	1 706	2 148	683	1 883	601	8 181
53	1 798	1 799	737	1 964	639	8 074
54	2 159	1 945	791	2 187	670	8 969
55	2 417	2 184	832	2 551	768	9 922
56	2 588	2 205	926	2 992	930	11 031
57	2 724	2 235	992	3 262	1 035	12 025
58	2 807	2 456	1 094	3 518	1 157	12 954
59	3 249	2 539	1 191	3 873	1 280	14 079
60	3 773	2 888	1 314	4 314	1 382	15 824
60	3 638	2 774	1 435	5 113	1 374	16 199
61	4 115	3 244	1 596	5 775	1 550	18 362
62	4 286	3 074	1 741	6 549	1 720	19 661
63	4 623	3 260	1 908	7 307	1 992	21 352
64	5 159	3 746	2 156	8 320	2 351	24 083
65	5 557	4 039	2 452	9 229	2 652	26 634
66	5 925	3 869	2 648	10 089	3 018	28 554
67	6 386	3 939	2 860	11 018	3 479	31 321
68	7 557	4 578	3 008	12 267	4 102	35 908
69	9 422	5 158	3 401	13 702	4 560	40 986
70	10 870	5 425	4 014	15 294	5 040	45 743
71	11 575	5 774	4 402	17 016	5 718	50 257
72	13 827	6 040	5 428	19 904	6 629	58 625
73	17 180	7 184	6 791	24 146	7 936	71 364
74	23 662	8 826	8 659	30 308	10 031	90 055
75	25 196	10 517	10 419	35 797	13 000	104 291
76	28 447	11 115	10 144	41 672	15 790	117 775
77	30 276	11 945	10 648	45 888	17 678	130 001
78	34 555	12 354	10 784	50 758	19 351	143 620
79	41 788	14 526	11 959	58 320	22 087	166 959
80	48 408	17 434	13 654	67 430	25 273	192 556
81	53 069	18 042	15 460	77 633	29 624	218 455
82	57 348	20 109	17 662	87 384	34 146	245 172
83	63 936	21 791	20 571	97 955	39 212	274 436
84	71 737	24 325	21 577	110 020	44 231	307 713
85	75 189	25 476	23 138	121 707	49 874	335 394

[1]) National accounts revised in 1960.
Source: National Accounts

Norway:
GDP by economic sectors at current prices, 1962–1985. Million NOK.

Year	Manufacturing	Agriculture, forestry, fishing, mining	Petroleum production	Construction, electricity supply	Water transport	All (other) private services	Public sector production	Correction item	GDP at market prices
62	8 206	3 373	0	4 205	3 426	15 608	3 766	259	38 843
63	8 829	3 376	0	4 623	3 738	16 703	4 184	229	41 682
64	9 899	3 744	0	4 880	4 215	18 177	4 686	236	45 837
65	10 777	4 369	0	5 395	4 725	19 807	5 320	170	50 563
66	11 572	4 428	0	6 251	4 736	21 517	5 938	126	54 568
67	12 371	4 371	0	6 857	5 823	23 292	6 906	80	59 700
68	13 356	4 559	0	7 021	6 565	24 825	7 575	−152	63 749
69	15 085	4 549	0	7 968	6 257	27 417	8 388	−246	69 418
70	17 441	5 742	0	8 902	7 333	28 381	9 411	2 667	79 877
71	19 201	6 426	12	9 984	7 655	31 892	11 216	2 721	89 107
72	21 561	6 431	208	10 737	7 931	35 873	12 836	2 826	98 403
73	24 279	7 131	261	11 659	9 590	40 841	14 810	3 283	111 854
74	27 728	8 378	1 070	13 974	10 738	46 539	17 020	4 282	129 729
75	32 301	9 202	4 255	15 687	8 481	53 284	20 705	4 786	148 701
76	34 316	10 668	6 956	17 722	8 359	61 729	25 048	5 911	170 709
77	36 214	11 983	8 697	19 757	8 184	70 763	28 519	7 417	191 534
78	38 313	12 411	15 010	23 234	8 742	78 106	32 013	5 250	213 079
79	43 542	12 774	23 681	24 488	9 886	84 016	34 114	6 167	238 668
80	44 487	13 746	44 783	26 958	11 988	97 349	38 900	6 834	285 045
81	48 234	16 167	55 886	30 845	13 024	113 570	45 162	4 786	327 674
82	51 116	16 733	62 339	35 341	11 226	130 067	51 505	3 943	362 270
83	57 270	16 597	73 652	39 287	11 255	143 890	56 841	3 405	402 197
84	63 731	18 496	89 856	43 036	12 343	156 630	61 867	6 767	452 726
85	67 272	19 421	98 455	47 840	11 458	175 075	67 840	10 474	497 835

Source: National Accounts

Sweden:
GDP by economic sectors at current prices, 1950–85. Million SEK.

Year	Manufacturing and mining	Agriculture, forestry, fishing	Construction	Private services	Public sector production	GDP at market prices
50	9 117	3 912	2 588	10 860	2 675	32 155
51	12 485	4 827	3 089	12 368	3 283	39 612
52	12 030	6 482	3 622	13 829	4 049	43 091
53	12 189	5 174	4 136	14 615	4 287	44 555
54	13 015	5 402	4 373	15 481	4 474	47 207
55	14 036	5 291	4 623	16 897	4 950	50 755
56	15 183	5 922	4 920	18 484	5 383	55 164
57	16 381	5 541	5 134	20 132	6 041	58 919
58	16 873	5 562	5 524	20 961	6 514	62 242
59	17 948	5 174	6 005	22 205	6 982	66 307
60	19 814	5 741	6 360	23 805	7 525	72 128
61	21 472	6 198	7 049	25 903	8 359	78 466
62	23 425	6 378	7 753	27 355	9 555	85 097
63	24 682	5 961	9 617	29 518	10 870	92 106
64	27 823	6 909	10 857	32 961	12 177	102 716
65	30 705	7 269	11 990	36 551	13 888	113 032
66	32 011	7 004	13 200	40 027	16 180	122 952
67	33 629	7 166	14 565	44 125	18 674	133 458
68	35 577	6 602	14 730	47 657	20 987	141 621
69	39 217	6 410	15 384	51 047	23 208	153 798
70	44 702	7 088	14 268	55 525	26 716	172 226
71	46 934	8 164	15 296	60 630	30 874	186 215
72	49 494	7 771	16 586	65 727	34 517	203 758
73	56 587	8 227	18 609	73 134	38 364	226 744
74	71 953	11 652	19 390	83 361	44 256	256 127
75	81 626	13 021	22 831	96 638	53 773	300 785
76	85 857	14 802	28 494	109 291	64 194	340 197
77	84 726	14 601	30 273	119 306	78 028	370 016
78	89 306	14 709	31 525	134 157	88 851	412 450
79	102 911	14 703	34 707	150 809	100 154	462 307
80	113 467	16 829	38 675	170 034	116 036	525 099
81	117 947	18 625	42 844	182 455	127 389	573 040
82	128 155	20 550	44 731	201 603	138 713	627 678
83	150 264	22 486	47 311	225 407	153 254	705 364
84	171 883	25 561	50 823	251 051	165 791	789 581
85	184 055	25 247	53 711	276 980	177 211	862 522

Source: National Accounts

Denmark:
Balance of manpower resources, 1950–1985. (1 000 persons)

Year	Population	Thereof age (15–64)	Labour force	Employment in manu-facturing	Employment in private services	Employment in public sector	Total employment	Unemploy-ment	Market programs
50	4 252	2 757	1 935	524	494	167			
51	4 285	2 765	n.a.	n.a.	n.a.	n.a.			
52	4 315	2 774	n.a.	n.a.	n.a.	n.a.			
53	4 349	2 788	n.a.	n.a.	n.a.	n.a.			
54	4 389	2 806	n.a.	n.a.	n.a.	n.a.			
55	4 424	2 821	n.a.	n.a.	n.a.	n.a.			
56	4 454	2 833	n.a.	n.a.	n.a.	n.a.			
57	4 479	2 842	n.a.	n.a.	n.a.	n.a.			
58	4 501	2 860	n.a.	n.a.	n.a.	n.a.			
59	4 532	2 889	n.a.	n.a.	n.a.	n.a.			
60	4 566	2 923	2 048	591	595	235			
61	4 594	2 957	n.a.	n.a.	n.a.	n.a.			
62	4 630	2 994	n.a.	n.a.	n.a.	n.a.			
63	4 666	3 030	n.a.	n.a.	n.a.	n.a.			
64	4 703	3 055	n.a.	n.a.	n.a.	n.a.			
65	4 741	3 076	2 252	636	634	303	2 236	16	
66	4 779	3 096	2 295	579	789	332	2 277	18	
67	4 820	3 113	2 340	552	789	354	2 318	22	
68	4 855	3 130	2 347	557	791	376	2 306	41	
69	4 879	3 144	2 356	569	794	398	2 324	32	
70	4 929	3 176	2 380	569	798	420	2 355	25	
71	4 973	3 197	2 409	547	802	467	2 377	32	
72	4 992	3 210	2 424	559	808	513	2 391	33	
73	5 022	3 226	2 447	567	808	538	2 425	22	
74	5 045	3 235	2 479	549	808	565	2 428	51	
75	5 060	3 239	2 486	504	808	593	2 360	126	
76	5 073	3 245	2 531 [1]	505	824	613	2 398 [2]	133	
77	5 088	3 257	2 537	503	828	639	2 373	164	
78	5 104	3 275	2 578	500	829	668	2 387	191	
79	5 117	3 296	2 631	500	829	706	2 469	162	
80	5 123	3 316	2 685	490	816	737	2 501	184	
81	5 122	3 339	2 674	472	804	765	2 431	243	
82	5 119	3 351	2 689	470	802	792	2 422	263	
83	5 116	3 369	2 732	469	809	800	2 449	283	
84*	5 112	3 381	2 720	492	840	801	2 444	276	
85*	5 111	3 394	2 753	524	873	809	2 501	252	

[1]) Change of definition. The figure comparable to the following years is 2 495
[2]) Change of definition. The figure comparable to the following years is 2 362
Source: Labour Markets Statistics.

Finland:
Balance of manpower resources, 1950–1985. (1 000 persons)

Year	Population	Thereof age (15–74)	Labour force	Employment in manu-facturing	Employment in private services	Employment in public sector	Total employment	Unemploy-ment	Market programmes
50	4 009	2 737	2 093	354	412	125	2 055	38	
51	4 047	2 748	2 118	382	432	125	2 097	21	
52	4 091	2 766	2 111	370	448	131	2 084	27	
53	4 139	2 793	2 108	367	450	135	2 066	42	
54	4 187	2 823	2 145	397	464	138	2 111	34	
55	4 235	2 848	2 180	418	483	143	2 152	28	
56	4 282	2 879	2 204	431	494	146	2 175	29	
57	4 324	2 905	2 181	418	489	150	2 140	41	
58	4 360	2 923	2 175	402	492	153	2 114	61	
59	4 395	2 948	2 167	409	503	154	2 119	48	
60	4 430	2 948	2 214	429	539	164	2 181	33	
61	4 461	3 031	2 221	437	560	172	2 194	27	
62	4 491	3 082	2 243	459	581	178	2 214	29	
63	4 523	3 134	2 243	460	594	179	2 209	34	
64	4 549	3 178	2 269	459	627	195	2 235	34	
65	4 564	3 214	2 278	470	643	195	2 246	32	
66	4 581	3 248	2 286	492	648	197	2 252	34	
67	4 606	3 286	2 273	491	649	206	2 205	68	
68	4 626	3 322	2 249	484	653	216	2 161	88	
69	4 624	3 341	2 248	501	664	232	2 183	65	
70	4 606	3 349	2 263	526	682	246	2 217	46	
71	4 612	3 378	2 270	540	685	257	2 215	55	
72	4 640	3 422	2 277	551	707	275	2 215	62	
73	4 666	3 462	2 322	565	746	295	2 265	57	
74	4 691	3 495	2 370	592	771	308	2 326	44	
75	4 711	3 523	2 374	583	780	324	2 312	62	88
76	4 726	3 542	2 370	568	776	333	2 278	92	89
77	4 739	3 560	2 371	561	761	352	2 231	140	93
78	4 753	3 579	2 372	545	758	363	2 199	172	107
79	4 765	3 597	2 399	566	780	379	2 256	143	121
80	4 780	3 616	2 442	590	809	392	2 328	114	119
81	4 800	3 636	2 481	599	813	408	2 353	127	113
82	4 827	3 659	2 526	581	823	435	2 377	149	120
83	4 856	3 681	2 546	570	834	461	2 390	156	120
84	4 882	3 700	2 572	563	858	475	2 413	158	120
85	4 902	3 710	2 600	560	885	490	2 437	163	115

Source: Labour Force Survey, Ministry of Labour
ETLA

Norway:
Balance of manpower resource, 1972–1985. (1 000 persons)

Year	Population	Thereof age (15–74)	Labour force	Employment in manufacturing [1])	Employment in private services [1])	Employment in public sector [1])	Total employment	Unemployment	Market programs
72	3 933	2 732	1 677				1 649	28	
73	3 961	2 749	1 680				1 654	26	
74	3 985	2 768	1 684				1 659	25	
75	4 007	2 809	1 747	389	587	308	1 707	40	
76	4 026	2 825	1 821	388	605	320	1 789	32	
77	4 043	2 844	1 851	389	625	333	1 824	27	
78	4 059	2 866	1 888	382	630	348	1 854	34	
79	4 073	2 885	1 910	376	630	359	1 972	38	
80	4 086	2 905	1 946	373	649	374	1 913	33	
81	4 100	2 926	1 972	368	658	387	1 932	40	
82	4 115	2 949	1 998	357	661	393	1 946	52	
83	4 129	2 971	2 024	334	664	404	1 957	67	
84	4 146	2 992	2 031	330	674	413	1 970	61	
85*	4 159	3 013	2 064	333	703	422	2 012	51	

[1]) Thousand manyears
Source: Labour Market Statistics, National Accounts

Sweden:
Balance of manpower resource, 1960–1985. (1 000 persons)

Year	Population	Thereof age (15–74)	Labour force	Employment in manu-facturing	Employment in private services	Employment in public sector	Total employment	Unemploy-ment	Market programs
60	7 498	5 392	n.a.	1 040	1 191	462	n.a.	n.a.	16
61	7 542	5 453	3 699	1 066	1 206	478	3 644	55	15
62	7 581	5 507	3 746	1 072	1 210	492	3 688	58	20
63	7 628	5 533	3 720	1 071	1 230	528	3 659	62	29
64	7 695	5 586	3 718	1 086	1 250	556	3 660	58	31
65	7 773	5 645	3 742	1 089	1 259	576	3 698	44	35
66	7 843	5 703	3 792	1 075	1 273	604	3 733	59	38
67	7 893	5 741	3 775	1 040	1 259	642	3 695	80	49
68	7 935	5 767	3 822	1 021	1 292	691	3 737	85	65
69	8 004	5 805	3 855	1 038	1 312	742	3 782	73	66
70	8 081	5 864	3 913	1 055	1 328	806	3 854	59	71
71	8 115	5 897	3 961	1 020	1 341	860	3 860	101	84
72	8 129	5 906	3 970	1 004	1 343	905	3 862	107	103
73	8 144	5 906	3 977	1 019	1 333	937	3 879	98	112
74	8 177	5 914	4 043	1 040	1 344	994	3 962	80	102
75	8 208	5 934	4 129	1 049	1 379	1 045	4 062	67	94
76	8 236	5 955	4 155	1 046	1 376	1 094	4 088	66	109
77	8 267	5 974	4 174	1 009	1 384	1 140	4 099	75	164
78	8 284	5 994	4 209	980	1 380	1 198	4 115	94	171
79	8 303	6 012	4 268	982	1 388	1 251	4 180	88	155
80	8 318	6 040	4 318	981	1 390	1 300	4 232	86	124
81	8 323	6 062	4 332	952	1 394	1 332	4 225	108	118
82	8 327	6 080	4 357	915	1 405	1 345	4 219	137	144
83	8 331	6 096	4 375	893	1 415	1 359	4 224	151	164
84	8 343	6 109	4 391	899	1 423	1 398	4 255	136	203
85	8 358	6 118	4 424	899	1 442	1 413	4 299	125	178

Sources: Labour Market Statistics.
Employment in labour market programs: EFA.
Delegationen för arbetsmarkedspolitisk forskning.

Denmark:
External balance, 1950–1985.
Per cent of GDP

Year	Trade balance	Balance on current account excl. interest payments net	Interest payments net	Net foreign debt
50	−3.5	−1.3	−0.4	13.6
51	−0.9	1.0	−0.3	11.5
52	0.9	1.1	−0.3	9.0
53	0.6	1.3	−0.2	6.9
54	−1.6	−1.6	−0.3	8.3
55	0.8	0.8	−0.3	7.3
56	−0.2	−0.2	−0.2	7.1
57	1.1	1.1	−0.1	5.1
58	2.6	2.6	0.0	1.6
59	0.2	0.2	0.1	0.9
60	−1.1	−1.1	0.1	1.0
61	−1.6	−1.6	−0.1	2.4
62	−3.2	−3.2	0.0	5.2
63	0.4	0.4	0.1	4.3
64	−2.1	−2.1	−0.1	5.7
65	−1.5	−1.6	−0.1	6.4
66	−0.7	−0.9	−0.2	7.4
67	−2.1	−2.2	−0.2	9.2
68	−1.5	−1.5	−0.2	9.3
69	−2.4	−2.6	−0.3	10.8
70	−2.9	−3.2	−0.3	12.6
71	−1.7	−2.0	−0.4	13.0
72	0.6	0.2	−0.6	11.2
73	−1.9	−1.1	−0.6	10.8
74	−1.9	−1.4	−0.8	12.2
75	−8.3	−0.6	−0.9	12.4
76	−4.9	−4.3	−0.9	16.1
77	−4.0	−3.2	−1.2	20.5
78	−2.0	−1.1	−1.6	21.0
79	−3.1	−2.7	−2.0	24.7
80	−1.1	−1.0	−2.6	26.7
81	−1.7	0.3	−3.3	30.5
82	−1.4	−0.2	−4.0	33.0
83	0.4	1.2	−3.7	36.0
84*	−0.4	1.0	−4.3	38.9
85*	−1.3	−0.4	−4.2	40.0

Source: Foreign Trade Statistics.
National Accounts.
Credit Market Statistics

Finland:
External balance, 1950–1985.
Per cent of GDP

Year	Trade balance	Balance on current account excl. interest payments net	Interest payments net	Net foreign debt
50	−1.6	0.7	−0.5	14.1
51	4.5	5.2	−0.3	4.7
52	−3.6	−2.6	−0.4	7.0
53	1.4	2.1	−0.3	5.6
54	0.6	1.9	−0.3	4.0
55	0.5	1.9	−0.2	2.0
56	−2.6	−1.1	−0.3	3.4
57	−1.5	0.1	−0.3	5.0
58	1.3	2.5	−0.3	2.8
59	0.0	0.9	−0.1	2.0
60	−1.5	−0.8	−0.1	2.3
61	−1.7	−1.1	−0.2	3.2
62	−2.0	−1.2	−0.2	4.5
63	−0.9	0.0	−0.3	4.6
64	−2.8	−2.0	−0.4	6.1
65	−2.6	−1.8	−0.5	7.6
66	−2.5	−1.7	−0.5	7.8
67	−1.8	−1.0	−0.7	11.8
68	0.4	1.5	−0.8	9.0
69	−0.4	0.8	−0.8	7.7
70	−3.0	−1.5	−1.0	10.0
71	−3.7	−2.2	−1.1	12.9
72	−1.8	0.2	−1.2	12.5
73	−2.8	−1.2	−1.2	11.9
74	−5.5	−5.7	−1.3	14.2
75	−7.4	−7.0	−1.5	21.0
76	−3.4	−2.6	−1.7	21.6
77	0.2	1.6	−2.1	23.3
78	2.0	4.3	−2.2	19.9
79	−0.5	1.5	−2.0	16.3
80	−2.8	−1.0	−1.7	14.5
81	−0.4	1.2	−2.0	13.7
82	−0.7	0.6	−2.2	16.1
83	−0.7	0.2	−2.1	17.8
84*	1.8	2.2	−2.2	17.3
85*	0.6	0.7	−1.8	15.9

Source: National Accounts
Bank of Finland, Monthly Bulletin

Norway:
External balance, 1950–1985.
Per cent of GDP

Year	Trade balance	Balance on current account excl. interest payments net	Interest payments net	Net foreign debt
50	−5.3	2.5	−0.5	n.a.
51	1.8	3.6	−0.5	n.a.
52	0.2	0.8	−0.4	n.a.
53	−4.1	−3.5	−0.5	n.a.
54	−4.8	−4.4	−0.5	n.a.
55	−3.0	−2.7	−0.7	10.0
56	0.9	1.1	−0.7	8.0
57	1.1	1.2	−0.7	6.6
58	−3.0	−2.8	−0.9	8.3
59	−1.0	−0.7	−0.9	10.0
60	−1.8	−1.3	−1.0	9.5
61	−3.1	−2.7	−1.0	12.0
62	−2.5	−2.2	−1.0	14.2
63	−2.2	−2.0	−1.0	15.5
64	−0.1	0.0	−1.1	13.2
65	−0.9	−0.8	−1.1	15.1
66	−1.5	−1.4	−1.1	15.8
67	−1.9	−1.7	−1.2	15.5
68	2.0	2.1	−1.1	12.6
69	2.2	2.1	−0.8	10.6
70	−1.3	−1.6	−0.5	11.4
71	−3.3	−3.5	−0.7	14.1
72	0.8	0.4	−0.8	13.8
73	−0.5	−0.9	−0.9	12.7
74	−2.9	−3.5	−1.3	15.2
75	−6.7	−7.4	−1.1	23.7
76	−9.5	−10.5	−1.5	31.9
77	−8.5	−12.1	−1.9	44.1
78	−0.9	−2.7	−2.5	46.5
79	2.6	0.7	−2.9	43.4
80	6.1	4.5	−2.6	32.6
81	7.9	6.2	−2.4	26.7
82	7.8	3.4	−2.2	26.9
83	7.9	5.8	−2.2	22.4
84	9.2	7.2	−1.9	17.0
85	7.9	5.9	−0.8	8.1

Sources: National Accounts
Credit Market Statisics

Sweden:
External balance, 1950–1985.
Per cent of GDP

Year	Trade balance	Balance on current account excl. interest payments net	Interest payments net	Net foreign debt
50	−1.3	0.4	0.0	n.a.
51	0.0	2.4	0.1	n.a.
52	−1.9	0.4	0.2	n.a.
53	−1.1	0.8	0.1	n.a.
54	−2.1	−0.4	0.2	n.a.
55	−2.8	−0.8	0.2	n.a.
56	−2.5	−0.4	0.2	n.a.
57	−2.6	−0.3	0.3	n.a.
58	−2.4	−0.6	0.2	n.a.
59	−1.6	−0.1	0.2	n.a.
60	−2.4	−0.8	0.2	n.a.
61	−1.2	0.3	0.2	n.a.
62	−1.2	0.2	0.2	n.a.
63	−1.1	0.1	0.2	n.a.
64	−0.9	0.1	0.3	n.a.
65	−1.9	−1.0	0.2	n.a.
66	−1.3	−0.9	0.2	n.a.
67	−0.7	−0.3	0.2	n.a.
68	−0.8	−0.5	0.1	n.a.
69	−0.7	−0.7	0.0	−4.3
70	−0.6	−0.7	−0.1	−3.7
71	1.1	0.9	0.1	−3.9
72	1.5	1.3	0.0	−5.0
73	2.5	2.5	0.3	−6.7
74	−1.3	−1.1	0.1	−5.3
75	−0.1	−0.6	0.1	−2.9
76	−1.5	−2.1	0.0	−0.9
77	−1.2	−2.3	−0.3	1.2
78	1.3	0.5	−0.5	2.2
79	−1.0	−1.7	−0.4	5.1
80	−2.0	−2.7	−0.9	9.5
81	−0.2	−0.6	−1.9	14.4
82	−0.9	−1.0	−2.6	22.2
83	1.4	1.6	−2.6	23.6
84	3.5	2.9	−2.5	24.6
85	2.1	3.8	−2.6	22.0

Sources: Foreign Trade Statistics.
National Accounts.
Net foreign debt: SCB Finansräkenskaperna

Denmark:
Public Sector, 1950–1985.
Per cent of GDP

Year	Direct taxes	Indirect taxes	Social security contributions	Transfers to private sector	Transfers to households	Total public (consolidated) surplus/ deficit
50	9.2	9.5	1.1	n.a.	n.a.	n.a.
51	10.4	10.2	1.1	n.a.	n.a.	n.a.
52	11.3	10.2	1.1	n.a.	n.a.	n.a.
53	11.4	10.0	1.2	n.a.	n.a.	n.a.
54	11.5	9.8	1.2	n.a.	n.a.	n.a.
55	12.1	10.8	1.1	n.a.	n.a.	n.a.
56	12.2	10.7	1.1	n.a.	n.a.	n.a.
57	12.6	11.0	1.2	n.a.	n.a.	n.a.
58	12.8	11.8	1.2	n.a.	n.a.	n.a.
59	12.6	12.0	1.2	n.a.	n.a.	n.a.
60	12.4	12.5	1.2	7.5	n.a.	n.a.
61	12.3	12.2	1.2	7.6	n.a.	n.a.
62	13.2	13.2	1.2	7.8	n.a.	n.a.
63	14.2	14.1	1.2	8.1	n.a.	n.a.
64	13.7	13.9	1.5	7.7	n.a.	n.a.
65	14.7	14.2	1.6	8.3	n.a.	n.a.
66	15.6	15.2	1.7	8.9	n.a.	n.a.
67	16.0	15.3	1.7	9.8	n.a.	n.a.
68	17.1	17.2	1.7	10.6	n.a.	n.a.
69	16.9	17.3	1.6	9.6	n.a.	n.a.
70	21.4	17.4	1.6	13.7	n.a.	n.a.
71	24.3	17.4	1.6	14.0	10.9	3.9
72	23.6	17.6	1.7	14.1	10.9	3.9
73	24.5	17.1	0.8	14.2	10.7	5.2
74	27.6	16.1	0.5	16.1	11.6	3.1
75	25.1	15.7	0.5	16.3	13.4	−1.4
76	24.6	16.4	0.6	15.9	13.1	−0.3
77	24.0	17.3	0.6	16.8	13.8	−0.6
78	24.4	18.4	0.6	17.8	14.5	−0.4
79	24.7	19.1	0.7	18.1	15.0	−1.7
80	25.7	18.9	0.8	19.2	16.1	−3.3
81	25.6	18.4	1.0	20.2	17.8	−6.9
82	25.4	17.7	1.3	20.6	18.1	−9.1
83	26.8	17.8	1.8	20.5	17.8	−7.3
84*	27.5	18.2	1.9	20.1	17.2	−4.3
85*	28.9	18.3	1.9	19.0	16.4	−1.9

Source: National Accounts

Finland:
Public sector, 1950–1985.
Per cent of GDP

Year	Direct taxes	Indirect taxes	Social security contributions	Transfers to private sector	Transfers to households	Total public (consolidated) surplus/ deficit
50	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
51	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
52	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
54	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
55	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
56	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
57	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
58	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
59	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
60	10.1	13.1	3.6	9.0	6.2	3.9
61	9.8	12.8	3.6	9.0	6.5	3.4
62	10.5	13.0	3.8	9.3	6.9	3.2
63	10.4	12.4	4.0	9.9	6.9	1.0
64	11.5	12.2	4.5	10.5	7.1	1.3
65	11.8	12.6	4.8	10.7	7.6	1.5
66	12.7	12.9	5.0	11.4	8.1	1.5
67	12.8	13.8	5.7	11.6	8.7	2.5
68	12.9	14.2	5.6	11.5	8.6	2.8
69	12.7	13.7	5.4	11.3	8.3	3.4
70	13.1	13.2	5.7	11.1	8.2	4.3
71	14.0	13.5	6.2	11.7	8.9	4.5
72	14.1	13.5	6.1	11.8	9.1	3.9
73	14.8	13.1	6.5	11.0	8.6	5.7
74	15.1	12.4	6.7	12.1	8.9	4.6
75	16.3	12.3	7.5	13.4	9.5	2.7
76	18.9	12.5	7.9	14.1	10.0	4.9
77	17.5	13.3	7.7	14.7	10.8	3.2
78	15.3	13.7	7.1	14.5	10.8	1.3
79	14.2	13.4	6.5	14.0	10.0	0.5
80	14.5	13.4	6.3	13.3	9.6	0.5
81	15.9	13.6	6.2	13.6	9.8	1.3
82	15.6	13.5	6.2	14.3	10.7	−0.4
83	15.7	13.5	6.1	14.9	11.1	−1.6
84*	16.0	14.2	6.6	14.8	11.1	0.4
85*	16.6	14.3	7.2	15.1	11.6	0.4

Source: National Accounts

Norway:
Public sector, 1950–1985.
Per cent of GDP

Year	Direct taxes*	Indirect taxes	Social security contributions	Transfers to private sector	Transfers to households	Total public (consolidated) surplus/ deficit
50	17.4	13.0	n.a.	11.8	4.9	n.a
51	15.5	14.2	n.a.	10.2	4.4	n.a
52	15.9	14.3	n.a.	10.6	4.9	n.a
53	16.7	13.6	n.a.	10.7	5.4	n.a
54	16.1	13.2	n.a.	10.7	5.6	n.a
55	16.1	13.2	n.a.	10.8	5.8	n.a
56	15.8	13.3	n.a.	10.3	5.7	n.a
57	18.1	13.8	n.a.	11.5	6.3	n.a
58	18.8	14.0	n.a.	11.3	6.9	n.a
59	18.8	13.9	n.a.	11.8	7.7	n.a
60	18.0	14.0	n.a.	12.0	7.6	n.a
61	18.4	14.1	n.a.	12.0	7.6	n.a
62	19.7	14.1	n.a.	12.4	8.3	n.a
63	19.6	14.0	n.a.	13.1	8.7	n.a
64	20.1	14.2	n.a.	12.7	8.9	n.a
65	20.3	14.6	n.a.	13.5	9.0	n.a
66	21.4	15.0	n.a.	13.5	9.1	n.a
67	23.5	15.2	n.a.	14.1	9.8	2.1
68	24.3	14.8	n.a.	15.0	10.5	1.6
69	25.0	16.1	n.a.	16.3	11.2	1.3
70	13.2	18.2	9.7	17.4	12.2	0.4
71	14.3	18.6	11.7	18.3	13.0	1.4
72	15.1	18.5	12.7	19.1	13.7	2.0
73	15.5	18.2	13.7	19.3	13.9	3.9
74	15.4	17.5	13.1	19.1	13.3	2.9
75	15.9	17.8	13.4	19.8	13.6	1.6
76	17.3	18.2	12.8	20.7	13.9	0.6
77	16.5	19.0	12.9	21.5	14.1	−1.3
78	17.5	17.8	13.3	22.7	15.0	−2.5
79	18.6	17.2	12.5	22.5	15.5	−1.1
80	21.5	17.2	12.0	20.9	14.4	3.8
81	20.0	17.0	11.8	21.0	14.5	2.9
82	19.5	17.0	12.0	21.4	15.0	3.1
83	19.1	17.3	11.7	21.5	15.5	3.0
84	19.3	17.2	11.2	20.7	15.0	6.8
85	19.7	18.3	11.4	20.2	14.8	7.5

* Social security contributions for the period 1950–69 are included in figures on direct taxes.
Source: National Accounts

Sweden:
Public sector, 1950–1985.
Per cent of GDP

Year	Direct taxes	Indirect taxes	Social security contributions	Transfers to private sector	Transfers to households	Total public (consolidated) surplus/ deficit
50	11.6	7.4	1.3	9.9	6.6	−0.9
51	13.0	6.8	1.2	8.5	5.9	0.8
52	15.5	6.9	1.2	8.5	6.0	1.3
53	14.7	7.1	1.3	9.2	6.5	−1.0
54	15.3	7.3	1.5	9.2	6.8	0.2
55	15.6	8.0	2.1	9.9	7.3	1.2
56	16.1	8.2	2.2	10.1	7.4	1.4
57	16.3	8.2	2.5	10.6	7.6	0.7
58	15.9	8.7	2.5	11.5	8.1	0.1
59	14.9	8.8	3.0	11.1	8.0	−0.3
60	14.9	10.0	3.6	11.4	7.9	1.7
61	16.0	10.3	3.7	11.3	7.9	3.2
62	15.9	11.3	4.4	11.5	8.1	3.8
63	15.8	11.3	5.2	12.1	8.7	2.7
64	16.2	11.1	5.4	12.0	8.7	2.5
65	18.0	11.7	5.5	12.7	9.2	4.1
66	18.5	12.3	5.9	13.6	9.5	3.7
67	18.7	12.3	6.6	14.4	10.3	3.2
68	18.9	13.4	7.7	15.6	10.9	3.5
69	19.6	12.9	7.8	16.1	11.4	4.2
70	20.3	12.6	7.6	15.9	11.3	4.2
71	20.1	14.8	8.2	17.4	12.5	5.0
72	20.0	14.2	8.5	18.3	13.2	4.2
73	18.4	14.5	8.2	17.7	12.8	3.9
74	20.6	13.3	8.3	20.7	15.1	1.7
75	21.3	13.8	8.6	21.5	14.9	2.5
76	22.6	14.5	11.3	23.1	15.8	4.5
77	22.8	15.3	12.9	26.3	17.5	1.4
78	22.9	14.0	13.7	27.5	18.3	−0.8
79	22.6	13.4	13.5	28.8	18.4	−3.4
80	21.7	13.6	14.2	29.3	18.6	−4.2
81	21.3	14.6	15.0	31.9	19.4	−5.3
82	21.7	14.6	13.8	34.3	19.4	−6.7
83	21.9	15.3	13.6	34.4	19.4	−5.0
84	21.5	16.2	13.2	32.9	18.7	−2.3
85	21.7	16.3	12.6	34.3	19.2	−2.7

Sources: IUI.
Konjunkturläget, 1985.

Denmark:
Key figures on manufacturing, 1950–1985.

Year	Labour productivity (annual percentage change)**	Investment in percent of value added[1])	Investments (annual percentage change)[1])
50	n.a.	12.1	n.a.
51	1.3	11.8	−10.2
52	1.3	10.6	−7.3
53	1.3	8.1	−1.6
54	1.3	9.1	21.6
55	1.3	8.8	−2.8
56	5.7	7.1	−18.7
57	5.7	9.1	37.8
58	5.7	11.1	4.5
59	5.7	10.1	26.0
60	5.7	13.4	38.4
61	2.0	14.5	18.9
62	5.5	16.0	10.8
63	1.4	12.6	−8.5
64	8.1	12.7	16.3
65	5.1	14.9	16.9
66	3.4	12.3	−0.5
67	7.6	11.4	−1.3
68	6.6	9.3	−10.3
69	3.1	10.5	35.8
70	3.3	11.4	16.8
71	5.7	10.5	−2.1
72	6.3	10.3	8.4
73	4.4	11.3	25.9
74	4.9	12.4	26.0
75	6.5	10.1	−14.9
76	4.6	10.7	23.3
77	0.9	9.9	3.6
78	0.3	9.6	4.6
79	5.7	9.6	11.8
80	6.6	9.9	15.1
81	0.4	8.8	−5.2
82	1.6	8.0	3.5
83	5.3	7.8	7.8
84*	0.9	9.5	36.0
85*	−1.2	11.4	31.0

** Output volume (value added)/ manyears
[1]) Manufacturing enterprises with more than 20 employees
Source: National Accounts

Finland:
Key figures on manufacturing, 1950–1985.

Year	Labour productivity (annual percentage change)**	Investment in percent of value added	Investments (annual percentage change)
50	3.8	13.9	1.0
51	5.8	19.0	53.4
52	0.0	22.2	−6.8
53	6.9	18.2	−10.3
54	5.6	17.7	17.2
55	5.3	16.8	4.6
56	0.4	18.8	17.0
57	5.0	16.6	−10.4
58	0.0	15.4	−10.2
59	6.7	16.2	23.4
60	4.8	21.2	43.8
61	5.1	25.6	31.7
62	3.4	24.3	−6.7
63	6.1	19.9	−13.6
64	5.3	21.1	12.4
65	5.0	22.3	6.4
66	5.2	22.4	5.3
67	5.7	18.5	−14.7
68	6.1	17.9	−0.4
69	7.8	18.1	21.4
70	5.0	22.9	32.2
71	1.8	26.0	7.2
72	7.6	23.2	−5.4
73	4.4	19.7	−8.8
74	3.7	23.3	32.5
75	−3.0	25.7	1.9
76	3.9	22.1	−11.9
77	4.5	19.4	−18.5
78	6.9	14.0	−17.7
79	6.9	13.8	11.5
80	4.0	17.6	24.0
81	3.8	18.8	13.4
82	3.7	18.9	0.8
83	5.8	16.5	−3.3
84*	5.8	15.9	2.6
85*	5.0	17.4	9.4

** Output volume (value added)/hours worked
Source: National Accounts.

Norway:
Key figures on manufacturing, 1950–1985.

Year	Labour productivity (annual percentage change)**	Investment in percent of value added	Investments (annual percentage change)
50	7.8	20.1	−5.0
51	6.3	16.0	−10.0
52	−1.8	21.6	29.1
53	5.9	22.3	5.3
54	4.4	22.9	11.6
55	1.1	18.5	−19.1
56	6.6	18.3	2.2
57	1.2	20.3	8.4
58	1.9	19.5	−5.9
59	4.5	17.0	−10.0
60	7.7	19.7	28.1
61	2.0	22.9	19.3
62	−0.4	23.6	5.2
63	3.0	21.7	−2.6
64	5.9	21.2	6.9
65	3.2	20.4	0.3
66	4.3	23.2	18.2
67	3.5	23.8	7.8
68	2.4	17.9	−20.0
69	6.7	15.6	−6.3
70	2.1	18.5	24.4
71	3.0	19.6	10.2
72	4.1	16.1	−12.2
73	5.3	15.5	6.1
74	2.2	20.5	31.2
75	−1.7	20.6	5.7
76	0.7	20.0	−5.8
77	−1.7	24.2	18.1
78	0.0	21.8	−10.3
79	3.8	16.8	−11.7
80	−0.9	20.3	12.2
81	0.3	22.5	14.4
82	2.6	17.8	−22.6
83	6.3	14.4	−11.4
84	3.7	14.6	10.3
85	1.6	18.0	23.2

** Output volume (value added)/manyears
Source: National Accounts.

Sweden:
Key figures on manufacturing, 1950–1985.

Year	Labour productivity (annual percentage change)**	Investment in percent of value added	Investments (annual percentage change)
50	n.a.	15.6	n.a.
51	4.9	14.7	4.3
52	0.3	14.8	−13.4
53	3.6	12.6	−11.3
54	3.4	14.7	28.9
55	2.6	14.0	−1.6
56	5.8	14.3	4.7
57	5.1	13.1	−4.8
58	3.7	15.1	19.4
59	5.3	15.4	7.6
60	4.5	16.3	7.8
61	5.4	18.4	18.6
62	7.7	18.4	3.3
63	6.3	18.2	1.9
64	8.9	15.6	−8.0
65	7.6	15.9	6.7
66	4.1	17.4	9.7
67	8.6	17.4	1.8
68	9.4	16.3	−2.6
69	8.1	15.6	7.3
70	4.9	15.3	3.7
71	4.5	15.5	0
72	4.9	16.3	4.5
73	7.5	16.9	9.7
74	4.2	17.1	11.1
75	1.0	17.2	1.1
76	1.4	18.2	0.5
77	−1.7	16.8	−17.6
78	2.6	13.9	−21.5
79	8.1	13.4	3.3
80	1.7	16.0	19.9
81	0.3	15.4	−8.5
82	2.5	13.2	−17.3
83	7.4	12.8	1.8
84	4.8	13.5	16.6
85	3.1	15.7	19.2

** Output volume (value added)/hours worked
Source: National Accounts

Key figures on households, 1950–1985.
Denmark

Year	Disposable income real annual change, %	Saving ratio
50	n.a.	n.a.
51	n.a.	n.a.
52	n.a.	n.a.
53	n.a.	n.a.
54	n.a.	n.a.
55	n.a.	n.a.
56	n.a.	n.a.
57	n.a.	n.a.
58	n.a.	n.a.
59	n.a.	n.a.
60	n.a.	10.9
61	10.8	13.1
62	2.4	11.2
63	−3.8	8.3
64	12.6	11.4
65	5.7	12.5
66	2.3	10.3
67	2.7	9.5
68	0.1	9.2
69	9.9	11.5
70	−0.6	7.1
71	2.7	8.0
72	7.0	10.9
73	3.8	7.8
74	−3.3	8.1
75	10.2	12.5
76	5.1	9.0
77	1.1	9.0
78	0.7	9.9
79	1.1	8.9
80	−6.2	8.4
81	−0.6	9.7
82	7.0	13.7
83	2.6	13.6
84	−0.3	10.7
85	1.2	7.0

Source: National Accounts

Finland

Year	Disposable income real annual change, %	Saving ratio
50	10.2	n.a.
51	9.9	n.a.
52	5.3	n.a.
53	−3.7	n.a.
54	10.1	n.a.
55	12.1	n.a.
56	0.8	n.a.
57	−4.1	n.a.
58	1.7	n.a.
59	5.5	n.a.
60	7.8	3.2
61	10.8	6.0
62	4.0	4.2
63	3.4	3.2
64	4.9	2.6
65	4.5	1.6
66	4.9	3.9
67	0.6	2.4
68	1.0	3.3
69	9.4	2.2
70	8.5	3.0
71	3.4	4.6
72	8.0	4.3
73	4.0	2.4
74	4.6	5.1
75	4.2	6.1
76	−0.7	4.5
77	−1.9	3.9
78	4.0	5.0
79	5.3	4.7
80	2.6	5.3
81	0.3	4.3
82	5.0	5.1
83	2.8	5.6
84	2.8	5.1
85	2.8	4.3

Source: National Accounts

Key figures on households, 1950–1985.
Norway

Year	Disposable income real annual change, %*	Saving ratio
50	2.8	n.a.
51	10.7	n.a.
52	2.7	n.a.
53	−1.4	n.a.
54	6.9	n.a.
55	3.5	n.a.
56	8.6	n.a.
57	−0.5	n.a.
58	−6.7	n.a.
59	4.5	n.a.
60	8.2	n.a.
61	5.7	n.a.
62	2.3	n.a.
63	3.9	n.a.
64	4.4	n.a.
65	5.8	n.a.
66	0.9	n.a.
67	0.7	n.a.
68	5.3	n.a.
69	3.7	n.a.
70	6.3	n.a.
71	0.9	n.a.
72	1.3	n.a.
73	3.4	n.a.
74	5.9	n.a.
75	3.0	4.2
76	2.5	6.1
77	0.3	4.7
78	3.8	8.4
79	8.7	4.6
80	0.9	3.4
81	3.0	4.5
82	−3.3	3.8
83	4.3	4.3
84	5.7	4.8
85	2.4	0.5

* Changes in disposable income relate to the whole private sector.
Source: National Accounts
St.meld. nr. 1 (1986–87)

Sweden

Year	Disposable income real annual change, %	Saving ratio
50	n.a.	4.1
51	−1.2	6.1
52	4.5	7.7
53	3.1	8.0
54	3.4	6.7
55	5.1	8.4
56	2.1	7.2
57	0.6	6.8
58	1.5	6.3
59	2.6	4.8
60	4.6	7.5
61	4.7	7.2
62	3.0	7.2
63	4.1	6.5
64	5.7	7.7
65	2.8	6.0
66	1.5	5.4
67	1.0	3.9
68	3.3	3.2
69	4.6	3.1
70	1.8	3.9
71	0.1	4.1
72	1.4	2.3
73	4.0	3.7
74	4.8	5.0
75	2.7	4.7
76	1.6	2.4
77	0.7	4.1
78	−0.2	4.5
79	0.6	2.9
80	1.3	5.0
81	−1.9	3.8
82	−2.0	0.5
83	−1.1	1.2
84	1.1	0.9
85	1.6	−0.3

Source: National Accounts

Denmark:
Key figures on prices, 1950–1985.

Year	Consumer price (annual change)	Producer price (annual change)	Export price (annual change)	Import price (annual change)	Profit margin in industry[1])	Rate of return in industry[2])	Key interest rate[3])
50	6.0	n.a.	0.0	7.5	n.a.	n.a.	4.59
51	10.2	16.9	15.2	−19.8	n.a.	n.a.	5.37
52	3.8	1.5	−4.0	−1.5	n.a.	n.a.	5.62
53	1.0	−1.9	−6.9	−8.9	n.a.	n.a.	5.50
54	0.0	−1.4	−0.8	−3.3	n.a.	n.a.	5.75
55	5.6	3.3	2.8	2.2	n.a.	n.a.	6.25
56	5.9	5.2	5.7	4.3	n.a.	n.a.	6.42
57	2.6	1.8	−1.0	2.4	n.a.	n.a.	6.50
58	0.9	1.7	−5.0	−7.1	n.a.	n.a.	5.60
59	1.7	0.7	2.3	−3.4	n.a.	n.a.	5.76
60	1.1	0.5	−0.9	2.0	n.a.	n.a.	6.04
61	3.6	2.1	2.0	0.0	n.a.	n.a.	6.60
62	7.4	2.5	1.0	−1.0	n.a.	n.a.	6.58
63	6.0	4.5	3.1	2.1	n.a.	n.a.	6.45
64	3.3	3.1	3.0	1.0	n.a.	n.a.	7.07
65	5.2	1.9	1.0	1.0	n.a.	n.a.	8.62
66	7.1	3.9	3.8	1.0	26.4	5.1	8.74
67	6.9	0.0	−1.8	1.0	27.6	5.8	9.06
68	8.6	0.0	3.7	5.9	28.9	7.3	8.69
69	4.2	6.4	3.6	1.9	27.8	7.1	9.66
70	5.8	8.3	4.3	5.5	26.0	6.0	12.17
71	5.8	2.2	3.1	6.4	24.2	4.6	11.87
72	6.6	2.9	5.0	0.0	25.5	5.5	11.95
73	9.3	13.2	12.4	11.0	25.2	5.8	14.64
74	15.3	22.3	17.8	35.1	21.4	2.7	15.73
75	9.6	9.2	9.4	4.7	25.5	4.3	12.39
76	9.0	3.5	7.2	7.0	25.4	4.6	16.52
77	11.1	17.4	6.8	9.2	25.0	4.0	17.65
78	10.0	3.5	3.8	0.0	24.7	3.8	18.37
79	9.6	7.6	8.6	14.1	23.5	3.7	19.00
80	12.3	11.5	13.6	23.5	25.9	4.5	19.66
81	11.7	15.2	14.0	17.0	25.6	3.6	17.82
82	10.1	10.1	11.4	10.3	27.8	4.5	16.63
83	6.9	3.4	3.9	3.1	32.2	7.5	12.65
84	6.3	2.3	7.6	8.3	32.7	9.7	14.18
85	4.7	2.8	3.5	2.1	n.a.	11.3	9.65

[1]) Gross operating surplus, % of gross value added in manufacturing
[2]) Net rate of return on capital employed in manufacturing
[3]) Interest rate on long term bonds
Sources: Central Statistical Office of Denmark, OECD

Finland:
Key figures on prices, 1950–1985.

Year	Consumer price [1]	Producer price [1]	Export price [1]	Import price [1]	Profit margin in industry [2]	Rate of return in industry [3]	Key interest rate [4]
50	114	117	112	126	n.a.	n.a.	9.68
51	133	168	204	168	n.a.	n.a.	9.70
52	138	163	194	165	n.a.	n.a.	9.97
53	141	153	146	145	n.a.	n.a.	7.96
54	141	153	149	136	n.a.	n.a.	7.97
55	137	155	158	136	n.a.	n.a.	8.00
56	152	162	158	143	n.a.	n.a.	7.96
57	170	172	173	167	n.a.	n.a.	7.98
58	181	188	206	191	n.a.	n.a.	7.32
59	183	191	194	182	n.a.	n.a.	6.91
60	188	199	196	177	42.4	11.8	6.94
61	192	202	198	179	42.6	12.0	7.01
62	200	203	194	179	37.8	9.6	7.04
63	210	209	200	182	38.9	10.0	7.15
64	232	227	212	187	37.2	9.6	7.26
65	243	237	222	182	34.8	8.3	7.48
66	252	240	225	185	33.4	7.4	7.54
67	266	244	238	192	33.1	7.4	7.57
68	289	270	272	232	37.2	9.7	7.71
69	296	284	281	237	42.5	13.7	7.72
70	304	298	302	255	39.6	12.9	7.77
71	323	312	316	273	34.2	9.2	8.75
72	346	338	339	292	33.7	9.8	8.18
73	387	415	380	324	34.8	10.2	9.75
74	454	521	526	458	39.9	12.0	9.92
75	534	609	497	525	31.9	6.8	10.08
76	612	645	629	531	30.0	5.5	10.18
77	689	698	723	618	30.4	4.9	9.29
78	741	720	765	685	35.5	8.2	8.24
79	794	787	862	792	38.4	10.8	9.42
80	887	900	957	924	36.6	10.4	10.18
81	993	1 007	1 034	1 042	35.4	9.4	10.19
82	1 086	1 084	1 094	1 081	35.4	9.1	9.58
83	1 179	1 154	1 150	1 149	38.1	10.7	9.88
84	1 262	1 234	1 238	1 205	40.2	11.2	10.58
85	1 337	1 282	1 263	1 234	38.4	10.5	10.34

[1]) 1949=100
[2]) Gross operating surplus, % of gross value added in manufacturing
[3]) Net rate of return on capital employed in manufacturing
[4]) Average bank loan rate
Sources: National Accounts
Interest Rate Statistics
ETLA

Norway:
Key figures on prices, 1950–1985.

Year	Consumer price [1]	Producer price [1]	Export price [1]	Import price [1]	Profit margin in industry [2]	Rate of return in industry [3]	Key interest rate [4]
50	100	100	100	100	28.6	–	2.66
51	116	124	136	120	28.1	–	3.02
52	127	132	133	121	23.6	–	3.02
53	129	130	118	113	22.4	–	3.01
54	135	133	119	107	25.9	–	3.02
55	136	136	125	109	23.0	–	4.03
56	141	142	132	115	22.3	–	4.53
57	145	147	135	122	21.0	–	4.56
58	152	144	126	113	17.5	–	4.66
59	155	144	124	108	15.9	–	4.58
60	156	146	124	109	18.8	–	4.48
61	160	147	122	108	17.6	–	4.66
62	168	150	122	107	14.9	1.5	4.66
63	173	152	121	108	14.2	1.8	4.55
64	182	158	124	109	18.2	2.9	4.58
65	190	162	129	109	18.5	2.7	4.75
66	196	165	131	109	16.3	1.9	4.78
67	205	168	129	109	13.0	0.8	4.76
68	212	169	125	107	14.6	1.4	4.74
69	218	175	128	109	18.3	2.6	5.09
70	242	187	139	116	21.0	3.4	5.98
71	257	196	144	122	16.6	2.0	6.10
72	275	202	143	123	18.9	2.9	6.09
73	296	218	157	131	21.5	4.1	6.13
74	324	261	206	165	25.0	4.8	6.95
75	362	284	224	176	21.6	3.7	7.19
76	395	308	227	187	18.4	2.3	7.27
77	430	327	238	203	14.3	0.7	7.50
78	466	341	251	216	12.3	−0.1	8.57
79	488	370	296	242	23.4	3.5	8.43
80	541	427	370	277	19.8	1.9	10.23
81	615	474	424	304	15.1	0.7	12.31
82	684	502	448	325	13.7	0.1	13.20
83	741	535	466	342	18.0	1.5	12.86
84	787	568	506	358	21.7	2.9	12.16
85	832	597	507	381	18.6	1.8	n.a.

[1] 1950=100
[2] Net operating surplus, % of net value added in manufacturing
[3] Net rate of return on gross capital employed in manufacturing
[4] Interest rate on long term government bonds
Sources: National Accounts
Monthly Statistics, CBS
IMF, International Statistics
IØI

Sweden:
Key figures on prices, 1950–1985.

Year	Consumer price [1]	Producer price [2]	Export price [2]	Import price [2]	Profit margin in industry [3]	Rate of return in industry [4]	Key interest rate [5]
50	101	59	70	88	n.a.	n.a.	3.1
51	117	79	125	114	n.a.	n.a.	3.4
52	126	84	112	106	n.a.	n.a.	3.6
53	128	76	96	96	11.3	n.a.	3.7
54	129	76	95	95	11.0	n.a.	3.7
55	133	79	98	99	11.0	n.a.	4.6
56	139	82	102	105	10.6	n.a.	4.7
57	145	84	103	106	10.6	n.a.	5.1
58	152	82	99	96	11.0	n.a.	5.1
59	153	81	95	94	10.0	n.a.	5.2
60	159	84	97	94	10.4	n.a.	5.8
61	163	85	98	93	11.0	n.a.	5.9
62	170	87	95	91	9.8	n.a.	5.7
63	175	89	96	94	9.5	n.a.	5.7
64	181	93	99	99	10.6	n.a.	6.2
65	190	96	103	101	10.8	n.a.	6.7
66	202	99	102	102	9.0	n.a.	7.4
67	211	99	100	100	8.4	n.a.	6.7
68	215	100	100	100	9.2	n.a.	7.0
69	221	104	104	104	9.8	n.a.	8.0
70	236	111	113	109	8.4	5.8	7.6
71	254	114	114	113	7.7	4.7	7.3
72	269	119	118	116	7.9	5.1	7.3
73	287	133	134	134	10.1	7.8	7.3
74	316	164	176	186	11.8	10.2	7.7
75	347	178	190	192	8.6	6.6	8.8
76	382	193	201	207	6.9	5.0	9.4
77	426	209	212	233	5.2	3.9	9.8
78	469	222	224	252	4.8	3.8	10.0
79	502	246	251	297	7.5	6.3	9.7
80	571	279	282	344	7.3	6.9	11.5
81	640	307	307	383	6.7	6.3	13.5
82	695	344	343	438	7.9	8.2	13.0
83	757	382	384	494	10.0	10.5	12.8
84	818	415	414	521	9.7	10.5	12.8
85	878	438	431	537	8.3	9.2	13.6

[1] 1949=100
[2] 1968=100
[3] Operating surplus before depreciation, % of operational income in manufacturing and mining
[4] Net rate of return on capital employed
[5] Interest rate on long term industrial bonds
Sources: National Accounts
Allmän månadsstatistik
Ekonomifaktas databas

ETLA THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY

is an independent, non-profit research institution, founded in 1946 at the initiative of Finland's central organizations of industry and employers to conduct economic and social research of interest to economic decision-makers. Today the major banks and the central association of insurance companies also support the Institute's work. In addition to monographs, which deal with various economic and social problems, the Research Institute regularly publishes short-term and medium-term forecasts. The results of the work done at the institute are published in several series, and a list of its publications is available from ETLA.

Address: ETLA, Lönnrotinkatu 4 B, 00120 Helsinki, Finland. Tel: 358-0-601 322.

Forecasting
SHORT-TERM FORECASTS AND ASSESSMENTS OF MEDIUM-TERM ECONOMIC PROSPECTS

Since 1971 the Institute has twice a year published a short-term forecast entitled "Suhdanne Economic Prospects in Finland", of which the 30th was issued in Spring, 1986. In "Suhdanne", prospective developments in the various sectors of the economy during the current and the next calendar year are considered. The forecast for the productive sector is based on assessments concerning over 20 branches of production. The Institute's consumption, investment and foreign trade forecasts are also quite detailed. This publication is meant to stimulate the discussion of economic policy matters, to aid firms and the sponsoring organizations in their decision-making and to facilitate the monitoring of short-term economic developments.

Since Autumn 1977, assessments have been made at the Institute of prospective developments in the various sectors of the economy during the next five years. The results of these assessments have been presented in a publication entitled "Kansantalouden Kehitysnäkymät, Medium-term Economic Prospects", which has also included a comprehensive and detailed review of growth prospects in various branches of production. This branch-by-branch review has most recently been developed further in the case of the service sectors. In addition to the basic forecasts, alternative calculations, indicating the significance of certain uncertainty factors have been dealt with; these alternative five-year scenarios for the economy have been based on various inflation, export demand and other similar assumptions.

Recent publications in English

ON THE IDENTIFICATION AND ESTIMATION OF MULTIPLE INPUT TRANSFER FUNCTION MODELS WITH AUTOCORRELATED ERRORS, Series A 8

by Markku Rahiala

In linear transfer function models, it is difficult to identify the form of the disturbance part of the model, because the behavior of the residuals essentially depends on the specification of the structural part. On the other hand, to identify the transfer function form straight away is also problematic, because the regularity pattern of the disturbance term greatly affects the distributions of test statistics used in model specification. Commonly used iterative procedures, which start by tentatively specifying the transfer function, suffer from the fact that the first choice of transfer function is crucial for the whole procedure. Rahiala proposes a technique in which the disturbance part is first identified and estimated using spectral methods. The transfer function can then be specified and estimated using properly filtered series. The author also describes computer programs for this Maximum Entropy Generalized Least Squares Technique.

The new method is illustrated with a model describing the movement of the volume of Finland's exports to western markets. The study suggests that changes in price competitiveness affect the volume of exports more or less immediately, whereas changes in economic activity affect exports both immediately and with a lag of one year.

THE ECONOMICS OF INVENTION, A Study of the Determinants of Inventive Activity, Series A 10

by Geoffrey Wyatt

This new book presents a wide-ranging economic analysis of the determinants of invention and inventive activity.

Geoffrey Wyatt examines the argument that the volume and type of inventive activity can be induced by economic rewards. The factors influencing the supply and derived demand for inventions are analysed in some detail, including factor prices, market size and structure, and patent protection.

The empirical analysis includes an econometric re-examination of U.S. patent count data and two new approaches to estimating and interpreting the elasticity of supply of inventive output and input.

The book makes an important contribution to our

understanding of the economics of invention and technical change, which are crucial to the success both of companies and national economies.

INTRA-INDUSTRIAL TECHNICAL PROGRESS AND STRUCTURAL CHANGE, An Application of the Frontier and Short-Run Industry Production Functions Based on Micro Data, Series A 11

by Timo Summa

The study considers new measurement and description methods of technical progress, efficiency and structural change within industry, the utilization of which will provide the firm's management with an improved basis for both economic-policy and industrial-policy decision-making. Efficiency is measured separately at the firm and the branch level, but in the method employed a clear-cut mathematical connection is defined between these two. Particular attention is devoted to the efficiency distributions of productive units and an effort is made to explain how these are related to technological progress in the field concerned.

AN INTERCOUNTRY COMPARISON OF PRODUCTIVITY AND TECHNICAL CHANGE IN THE NORDIC CEMENT INDUSTRY, Series B 44

by Finn R. Førsund, Lennart Hjalmarsson, Jussi Karko, Øyvind Eitrheim and Timo Summa

Technical change, productivity and efficiency in the Nordic cement industries is studied and compared in terms of short-run industry-level production and cost functions generated by micro data of all the cement kilns in the Nordic countries.

The study indicates that the methods applied are a new powerfull tool in analysing structural change and related topics, e.g., the economies of technology patterns.

It was found that during the period 1960–1980

- the Nordic cement industries adapted fairly well to the change of relative prices and to the decrease in demand for cement
- the rate of technical change was highest in the Swedish, then in the Norwegian, Finnish and Danish cement industries. However, the rate and bias fluctuated considerably during the sub-periods
- the efficiency differences between the Nordic cement industries are growing narrower and
- energy saving technologies are becoming more profitable.

MULTIFACTOR PRODUCTIVITY CHANGE IN FINNISH AND SWEDISH INDUSTRIES, 1960 TO 1980, Series B 38

by Geoffrey Wyatt

This study compares movements in sectoral total factor productivity in Finnish and Swedish industries in the 1960s and 1970s. It also investigates the extent to which these movements can be explained by expenditure on research and development.

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2) *Sectoral forecasts (in particular for the construction sector).*
3) *Future related studies for both the business sector and public authorities.*
4) *Future oriented management and employee seminars on economic and social development trends.*

The greater part of the institute's work is performed on closed contracts which accounts for the limited publication activity.

Address: Løngangstræde 25, 1468 Copenhagen K, Denmark.

VIRKSOMHEDSKULTUR

by R. Jensen and S. Thomsen

The book provides an introduction and overview to recent literature on corporate culture, corporate image and management.

The book contains 50 pages and costs DKK 45 (incl. VAT).

DE KOMMENDE BEHOV FOR EFTERRUDDANNELSE

by S. Iversen and J.P. Paludan

The report provides a broad outline of the trends in future demand for supplementary education and training (professional training, vocational training, adult education etc). Attention is concentrated on the needs in the private sector (main emphasis on manufacturing industry) and the trends are viewed in the light of technology, demographics, organizational structures and management trends etc. The analysis is partly based on a scenario technique and interviews with labour market actors.

The book is a joint publication with the Ministry of Education, and it contains 174 pages. The book is forthcoming, and the price is still unknown (not likely to exceed DKK 100 incl. VAT).

FREMTIDSORIENTERING

Fremtidsorientering is the periodical of the IFF (formerly named "Orientering om Fremtidsforskning") with 8 annual issues.

Each issue concentrates on a selected theme from a broad range of topics which reflect the activities of the institute. In 1986 the topics were:

- International economics
- New technology
- Opinions and attitudes in Denmark
- The financial markets
- Trends in management
- Enterprise structure
- The future of trade unions
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Each issue of the periodical contains approximately 60 pages. Annual subscription costs DKK 450 (excl. 22 % VAT).

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IUI – THE INDUSTRIAL INSTITUTE FOR ECONOMIC AND SOCIAL RESEARCH

is an independent, non-profit research institution, founded in 1939 by the Swedish Employers' Confederation and the Federation of Swedish Industries.

IUI carries out research into economic and social conditions of importance for industrial development in Sweden. The greater part of the Institute's work is devoted to long-term problems, especially to long-term changes in the structure of the Swedish economy particularly within manufacturing industry.

Address: Industriens Utredningsinstitut, Grevgatan 34, 5 tr, 114 53 Stockholm, Sweden. Tel: 46-8-783 80 00.

THE FIRM AND FINANCIAL MARKETS IN THE SWEDISH MICRO-TO-MACRO MODEL – Theory, Model and Verification

by Gunnar Eliasson

The book presents the main ideas behind dynamic micro-macro theory. A detailed account of the model and theoretical analysis is presented, with emphasis on the firm as a financial decision unit. A summary of calibration methods, database work and empirical applications is also included.

The micro-macro model features individual firms as price and quantity setters in dynamic product, labor and capital markets. The joint behavior of all firms determines market prices and economic growth, making aggregation endogenous under an exogenous technological constraint. This Schumpeterian inspired micro-macro model has been empirically implemented to investigate the macroeconomic consequences of technological change, different dynamic resource allocation mechanisms, market regimes, different tax systems etc.

The book contains 419 pages and costs SEK 316.

TWO MODELS OF AN OPEN ECONOMY

by L. Bergman, L. Jansson, T. Nordström and B.-C. Ysander (ed.)

Large scale, economy-wide econometric models are essential tools for addressing and analyzing many problems of economic policy. This book documents two such models. The first – ISAC – is a disequilibrium model, developed at IUI. The second – ELIAS – is an equilibrium model, developed at the Stockholm School of Economics. These two models represent different schools of thought in model-building. Both are designed, however, to capture the mechanisms through which disturbances in world markets induce structural adjustment in the Swedish economy.

The book contains 161 pages and costs SEK 200.

THE DYNAMICS OF MARKET ECONOMIES
Proceedings from a Conference Organized by IUI and JEBO in 1983
IUI Conference Reports 1986:1

edited by R.H. Day, G. Eliasson

The firm, the entrepreneur and the dynamic market process are the basic elements of an industrialized market economy. This conference commemorated the 100th anniversary of Joseph Schumpeter, who pioneered research in these fields. The themes of the conference were

- Theory and models of dynamic economic systems
- The role of firms in the economic transformation process
- Technology and innovative activity
- Institutions and dynamic market processes
- The micro-macro relations of the market economy.

Among the contributing authors can be mentioned: Herbert Simon, Sidney Winter, Christian von Weizsäcker, Erik Dahmén, Richard Day, Gunnar Eliasson, and Bo Carlsson.

IUI and North-Holland Publishing Company. Published 1986.

The book contains 512 pages and costs SEK 610.

POLICY MAKING IN A DISORDERLY WORLD ECONOMY
IUI Conference Reports 1983:1

edited by G. Eliasson, M. Sharefkin, B.-C. Ysander

The apparently successful stabilization policies of the 50s and the 60s gave us a rigid economic structure that could not cope with the external shocks of the 70s. Is there a trade-off between successful stabilization and long-run growth?

Sharply increased uncertainty is a fundamental ailment in the world economy. Instead of reducing uncertainty, policy makers have aggravated the

problem through inconsistent ad hoc policy making.

How does an economy adjust to crisis situations and price instabilities? Similar questions are addressed to three different types of econometric models. Quite different answers are given.

The book contains 417 pages and costs SEK 180.

LABOR MOBILITY
Studies of Labor Turnover and Migration in the Swedish Labor Market

by Bertil Holmlund

The 60s and the 70s showed a decline in various indicators of labor mobility in Sweden. This book brings together a number of econometric studies on this topic. By using primarily micro data a detailed quantitative picture of mobility behavior is provided. The issues addressed are related to

- the determinants of job search and quit behavior
- the determinants of family migration decisions
- the relationship between mobility and subsequent earnings
- the dynamics of labor turnover in the context of overall labor market behavior.

The book contains 279 pages and costs SEK 200.

CONTROL OF LOCAL GOVERNMENT
IUI Conference Reports 1985:1

edited by E.M. Gramlich, B.-C. Ysander

This book explores the postwar experience of local government expenditures in the U.S., Great Britain and Sweden. Fiscal limitations and privatization experiments in the U.S. are discussed as well as cash limit controls in Great Britain and regulation and grant policy in Sweden. The papers demonstrate the large differences in institutional structure and political emphasis among the countries.

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IØI – THE INSTITUTE OF INDUSTRIAL ECONOMICS

is an independent non-profit research institution founded in 1974 by the Norwegian Storting (Parliament) for the purpose of carrying out research on economic and social conditions of importance for industrial development in Norway. The institute is located in Bergen, next to the Norwegian School of Economics and Business Administration (NHH). The greater part of the research is focused on long-term problems related to the manufacturing and petroleum industries. Most projects are currently conducted within the following research areas:
(1) Analysis of structural change and perspectives (including branch studies),
(2) Industrial impacts of offshore petroleum activities,
(3) Innovation and industrial development.

The work of the institute is partly funded by the Norwegian government through an annual grant, partly by research councils, oil companies, and other individual clients, both private and public. Currently, the institute has a staff of 30 and an annual budget of NOK 14 million. Most of the work is published in Norwegian, but some major studies and a number of papers and articles are available in English.

Most of the research which is carried out at IØI is applied, in the sense that it deals with policy issues and issues of importance for the management of production. The professional staff includes economists, specialists in business administration, and social scientists. Several national and Nordic databases are available at the main computer which the institute owns jointly with the Norwegian School of Economics and Business Administration.

In recent years IØI has completed several Nordic studies. Some projects have been commissioned by the Secretariat of the Nordic Ministerial Council, and a major study was commissioned in 1984 by the Nordic Working Group for Extended Economic Cooperation (Gyllenhammargruppen). The latter project was carried out jointly with our Nordic institute partners.

Address: The Institute of Industrial Economics, Breiviken 2, 5035 Bergen-Sandviken, Norway. Telephone +47 5 255 660 (from June/July 1987 +47 5 950 660), telefax +47 5 255 667 (from June/July 1987 +47 5 950 667)

BOOKS IN ENGLISH:

ORGANIZATION THEORY AND PROJECT MANAGEMENT.

Administering Uncertainty in Norwegian Offshore oil. (Copublised with the Norwegian University Press). By Arthur L. Stinchcombe and Carol A. Heimer. ISBN 82-00-07600-8. Report No. 58, 1986. 361 pages. Price: NOK 280,–.

The subject of this book is how administrations made up of many organizations deal with risk and uncertainty. The essays in this study develop both empirical and theoretical analyses of the organizational problems of running large capital projects.

ENERGY RESOURCE COMMUNITIES.

(Copublished with MJM Publishing Company). Edited by Gene F. Summers and Arne Selvik. ISBN 82-7296-007-9. Report No. 27, 1982. 228 pages. Price: NOK 190,–.

This is a conference report from one of a series of international conferences of scholars studying energy resource communities in Europe and America.

NORTH SEA OIL – AN ENVIRONMENT INTERFACE.

(Copublished with the Norwegian University Press). Edited by David W. Fisher. ISBN 82-00-05832-8. Report No. 28, 1981. 330 pages. Price: NOK 190,–.

This book provides an overview of the organization of the planning instruments used to mitigate the environmental impacts from North Sea Oil.

REPORTS/WORK REPORTS

"Producing Responsible Behavior in order to Produce Oil." By Carol A. Heimer. IØI Report No. 76, 1986. 43 pages. Price: NOK 140,–.

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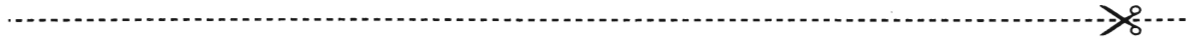
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"Contracts as Hierarchical Documents." By Arthur L. Stinchcombe. IØI Work Report No. 65, 1984. 52 pages. Price: NOK 140,–.



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The survey evaluates the growth prospects of the Nordic market. Adjustment problems are discussed and forecasts up to 1990 are presented.

Included are special studies of: the development of the financial markets in the four Nordic countries; the labor markets; and the fast growing Nordic corporations. A comprehensive statistical appendix of the Nordic economies 1950–85 concludes the book.

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