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# ETLA

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### Keskusteluaiheita - Discussion papers

No. 605

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#### CONSTRUCTION IN THE NORDIC COUNTRIES\*

\* Based on the author's presentation at the conference  
"Construction in Europe" (organized by Handelsblatt)  
in Berlin May 28<sup>th</sup>, 1997.



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**ABSTRACT:** The paper provides a survey of construction in four Nordic countries: Denmark, Finland, Norway and Sweden. The main emphasis is on the prospects for the years 1997 and 1998, but the paper includes also a brief historical overview. Construction is divided into three main sub-groups: residential construction, non-residential construction and ordinary renovation and maintenance. Inside non-residential construction private and public non-residential building construction as well as civil engineering are studied separately. According to the forecast construction is growing the most rapidly in Finland during the next couple of years. In Sweden the construction activity will decline slightly in 1997, but increase again in 1998. In Denmark and in Norway construction will grow by about 3 per cent in 1997. Next year the prospects are worse. In Denmark the construction activity will fall and in Norway it will increase only slightly.

**KEY WORDS:** construction, economic forecasts, Denmark, Finland, Norway, Sweden.

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**TIIVISTELMÄ:** Raportissa tarkastellaan neljän Pohjoismaan, Tanskan, Suomen, Norjan ja Ruotsin rakentamisen kehitystä. Pääpaino on vuosien 1997 ja 1998 näkymissä, mutta raportti sisältää myös lyhyen historiallisen katsauksen. Rakentaminen on jaettu kolmeen alaryhmään: asuinrakentaminen, muu kuin asuinrakentaminen sekä tavallinen kunnostus ja ylläpito. Muuta kuin asuinrakentamista tarkastellaan vielä kolmessa alaryhmässä: yritysten talonrakentaminen, julkisen sektorin talonrakentaminen sekä maa- ja vesirakentaminen. Ennusteen mukaan rakentaminen kasvaa vuosina 1997-1998 nopeimmin Suomessa. Ruotsissa rakentamisen kokonaistuotos supistuu hieman vuonna 1997, mutta kasvaa uudestaan vuonna 1998. Tanskassa ja Norjassa rakentamisen kokonaistuotos kasvaa 3 prosenttia vuonna 1997. Ensi vuonna näkymät ovat huonommat. Tanskassa tuotos supistuu ja Norjassa se kasvaa vain hieman.

**AVAINSANAT:** rakentaminen, taloudelliset ennusteet, Tanska, Suomi, Norja, Ruotsi.



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# 1 INTRODUCTION

The aggregate output of the construction sector in Denmark, Finland, Norway and Sweden was about USD 80 billion in 1996. This was almost a tenth of the output of the European OECD countries. Of this amount Sweden accounted for 36 %, Denmark for 24 %, Norway for 22 % and Finland for 18 %. The shares have changed clearly since 1990, when that of Sweden was 40 %, of Finland 28 %, of Denmark 17 % and of Norway 15 %. In Sweden and in Finland residential construction collapsed during the early 1990's. The peak in housing investments was in 1989 in Finland and in 1990 in Sweden.

Sweden has the greatest share in all types of construction, but the ranking of the rest of the countries differs according to the type of construction and according to the time period. In Sweden the population is about 8.8 million, in Denmark about 5.2 million, in Finland 5.1 million, and in Norway 4.3 million. The total population of these countries is 23,4 million.

The share of new housing construction of all construction is clearly higher in Finland and in Norway than in Denmark and in Sweden, where renovation and modernization are more important. The share of renovation has been increasing also in Finland and in Norway. The share of civil engineering in total construction is the highest in Norway, whereas in the rest of the countries the differences are small.

Construction declined clearly in all Nordic countries in the early 1990s. In Denmark the decline started already in 1986 at the time of the so-called potato cure. In Finland, Norway and Sweden the collapse started with the recession of the early 1990s. Now construction is picking up from the low level in all Scandinavian countries. In the following the prospects for construction in Denmark, Finland, Norway and Sweden are presented. In each case housing is handled first and then the non-residential construction (including civil engineering). In the end of the paper a summary of prospects is presented.

## 2 DENMARK

### 2.1 Housing

#### History

Investments in housing declined between 1986 and 1993 by 45 per cent. Since then they have been increasing substantially. In 1996 the growth rate was 8 per cent according to preliminary data. Last year the volume of subsidized residential construction increased. Especially building of non-profit rental apartments and of houses of pensioners grew. New buildings totalled 13.9 bill. DKK and extraordinary rehabilitation and maintenance 12.4 bill. DKK.

Last year the number of started dwellings was 15 800. This was 29 per cent more than in 1993. The number of subsidized building starts was 8900, the rest consisting of privately financed dwellings.



Privately financed housing investments have been rising since 1993. This is due to declining interest rates, increasing real disposable incomes and rising property prices, which has increased the profitability of building.

### **Forecast for 1997**

The volume of investment in residential buildings is forecast to grow by 8.5 per cent in 1997. The Danish Confederation of Construction Industry (Entreprenorforeningen) and the OECD forecast the same increase. The number of subsidized residential building starts is forecast to decline from 8900 last year to 8400 this year. This is due to the recommendation of the Ministry of Finance to municipalities to restrain from excessive financing to avoid bottlenecks in building. Also the state is postponing its construction projects for the same reason.

Privately financed residential construction continues to increase. Especially building of one-family houses is growing rapidly, from 5500 starts in 1996 to 6500 starts in 1997. This kind of building declined drastically during 1988-1993. Higher prices of old houses, better employment, increasing wages, tax reductions for the high-income groups, and low interest rates contribute positively to one-family house building. The number of privately financed multi-family houses is rising only slightly.

The total starts of dwellings will increase by 4 per cent in 1997. The rise in starts is lower than that of building volumes, because many buildings were started during the second part of last year. Building of these dwellings has continued this year.

The volume of extraordinary maintenance increased clearly between 1993-1995 because of rising public subsidies. In 1995 and 1996 the subsidies were cut. These led to a stagnation in 1996 and lead to a decline of extraordinary maintenance by 3 per cent in 1997.

### **Forecast for 1998**

The volume of residential building investments is forecast to grow by a couple of per cent in 1998. Building of one-family houses will continue to increase. Interest rates will remain low and the positive income development of the households will continue also next year. Starts of other kinds of privately financed dwellings and of subsidized dwellings will remain at the same level as in 1997. Restraint in public financing of dwellings will have a dampening effect also in 1998. The cut in public subsidies for repair and maintenance realized in 1995 and 1996 will have lagged effects on this activity next year, too.

## **2.2 Non-residential construction**

### **History**

Non-residential construction declined clearly between 1986-1993, as did housing investments. In 1995 it started to increase. In 1996 the growth in volume was 5 per cent according to preliminary data.

Construction starts of factories and workshops declined by about 70 per cent from 1986 to 1993. Between 1993 and 1995 they rose by 80 per cent. In 1996, however, they declined by

about 15 per cent. The main reason was the slowdown of international demand during the second half of 1995 and the first half of 1996.

Construction of private and public administrative buildings declined by 69 per cent from 1987 to 1994. Since then it has increased clearly because of climbing demand for offices.

Construction of institutional, educational and cultural buildings started to increase already in 1992. Agricultural construction has been increasing since 1993 because of increasing incomes of especially swine producers. In 1995 the growth rate was 17 and last year 36 per cent. Civil engineering declined clearly between 1988-1993. In 1995 and 1996 it increased due to a temporary boost in public investments and initiatives to modernise infrastructure.

### **Forecast for 1997**

Non-residential construction (including civil engineering) is forecast to grow by about 2 per cent in 1997. Non-residential building construction will grow by 3.5 per cent. The private part of non-residential building construction will grow by 6 per cent whereas corresponding public construction will remain stagnant. Construction of factories and workshops will increase more than 10 per cent. Increasing exports and better future prospects give an incentive to expand the production capacity.

Construction of buildings for private and public administration will increase by 5 per cent in 1997. The growth is due to the continuing increase in the demand for office buildings with a central location. The demand is intense especially in the Copenhagen area. Construction of buildings for institutional, educational and cultural use is expected to decrease by 10 per cent in 1997. This is due to the high level of 1996 and due to the restrictive actions of the public authorities in order to avoid bottlenecks in the construction sector. In spite of a decline, construction of institutional buildings is maintained at a high level. Construction in the agricultural sector is anticipated to decline somewhat in 1997.

Civil engineering is forecast to decline appreciably during the coming years from the relatively high level. The decline will continue until 1999. This year the forecasts range from +1 to -6 per cent. Investments in energy as well as in transport will decline. In the energy sector investments in natural gas and district heating will fall, investments in the electricity network increase this year from the abnormally low level of last year. In transport the large-scale investments in the Oresund and Big Belt projects will decline clearly this year. They will be finished in 1999. Also environmental investments are forecast to decline.

### **Forecast for 1998**

In 1998 non-residential investments (including civil engineering) are forecast to decrease by 2 per cent. The decline is due to a fall in civil engineering. Non-residential building will grow still by one per cent. Private non-residential building investment will grow by 4 per cent whereas the public corresponding investment will fall by 6 per cent.

Construction of factories and workshops as well as of buildings for private and public administration are forecast to increase clearly because of an increase in exports and in private domestic demand. The restraint in the public construction, however, diminishes construction of institutional, educational and cultural buildings. Agricultural construction will also

continue to decline. In civil engineering the fall in the construction of the big Oresund and Big Belt projects as well as restraint in other infrastructure construction diminishes the volume in this area.

### **2.3 Ordinary renovation and maintenance**

Ordinary renovation and maintenance of residential and non-residential buildings last year totalled 31.6 billion DKK, which was more than the money used in residential investments. This activity was rather stable in the early 90s. It increased clearly in 1994 and has remained at this higher level. The higher level since 1994 is due to increasing income and lower interest rates as well as due to public grants. In 1997 and 1998 the activity is expected to be about the same magnitude as in 1996.

### **2.4 Summary**

Total construction in Denmark will increase in 1997 by a couple of per cent and decline next year slightly. Housing investments will increase clearly in both years due to an increase in privately financed house building. Construction of firms will grow also significantly as a result of improving foreign and domestic demand. Public investments are expected to be stagnant in 1997 and will fall clearly next year as a result of restraint in public building and the decline in civil engineering investments, when large projects in Oresund and in the Big Belt are finished.

## **3 FINLAND**

### **3.1 Housing**

#### **History**

In Finland housing investments more than halved between 1989 and 1996. The peak was reached in 1989 while 1996 marked the bottom. Housing investments declined every year during this period. The main reason for the drop was the severe recession of the whole economy and the indebtedness of households, which was run up during the boom of the late 1980's. In 1996 housing investments still fell by 2.5 per cent. They finally started to grow during the second half of last year. The number of housing starts grew already from 18 300 in 1995 to 24 000 in 1996. The increase was mainly due to an increase in state-subsidized projects, with corresponding housing starts totalling 17 000. Starts of wholly privately financed dwellings were only 7000, one thousand more than in the previous year. Prices of dwellings increased by about 15 per cent in December when compared to December of the previous year.

#### **Forecast for 1997**

The volume of housing investments is forecast to increase by 15 per cent in 1997. The increase is mainly due to an increase in the production of state-subsidized rental apartments. The number of starts of subsidized production increases to somewhat above 20 000. Starts in

the privately financed building will increase by a couple of thousand. Increasing real disposable incomes of households, low interest rates, increasing prices of old dwellings, declining debt burden, improving employment, stronger consumer confidence and migration to growth centres support the demand for dwellings. The bad experiences of the overheating of the late 80s and of the followed recession, however, limit the willingness to borrow.

The total number of housing starts will increase to 30 000, which corresponds to a normal yearly demand for dwellings. This demand is due to the increasing number of households, to internal migration, and due to aging of dwellings. The low production during the recession years has, however, created pent-up demand for future years. The number of starts of one-family houses will grow from 7500 last year to 8500 in 1997. The number of starts of multi-family dwellings is about 21000.

### **Forecast for 1998**

In 1998 residential construction is forecast to grow by 10 per cent. The number of housing starts is about the same as in 1997. The composition of growth is, however, expected to change in favour of privately financed production. The state-subsidized production will decline by about a thousand starts because of cut-backs in subsidies. This fall is forecast to be compensated for by a greater increase in starts of privately financed dwellings. The same factors as in 1996 will support this production. Next year, however, starts will increase more because of lags in decision making and planning. The fall in subsidized production is reflected as a slight fall in starts of multi-family houses. The number of starts of one-family houses will increase.

## **3.2 Non-residential construction**

### **History**

Non-residential construction declined clearly during the worst recession years 1991-1993 and still in 1994, when the GDP was already growing. The decline occurred in building activity as well as in civil engineering. In other Scandinavian countries civil engineering did not experience such a fall; in Sweden it even increased.

In 1995 non-residential construction, i.e. non-residential buildings as well as civil engineering, started to grow together with investments of industry. Growth in building construction of the wholesale and retail trade and of the whole service sector has been modest because of overcapacity created at the end of the 1980s. In 1996 the aggregate volume growth in non-residential construction was 8.5 per cent. Building construction grew by 10 per cent and civil engineering by 4 per cent.

### **Forecast for 1997**

Total non-residential construction is forecast to grow by 5 per cent. Construction of non-residential buildings will grow by 4 per cent and civil engineering by 8 per cent. The growth rate in non-residential building will come down from that of 1996 due to the slowdown in industrial investments, especially due to the completion of large-scale investments of the paper and basic metal industries. They will continue still during the first part of the year, but

diminish at the end of the year. Recent building permit figures indicate that business and office building construction will remain at about the same low level as last year. Construction in agriculture is forecast to increase clearly when farmers who have decided to stay in business in the harder conditions of EU membership increase their productivity through investments. Construction of the public service sector (health care, education etc.) will increase clearly due to the rising investments in theatres, libraries, sport centres etc. In addition to new buildings extraordinary maintenance contributes to the growth of construction in the public sector. A part of this construction is motivated by employment programs.

In civil engineering investments in highways and in other transport connections will contribute essentially to growth. Investments in postal and telecommunications facilities remain to be high.

### **Forecast for 1998**

Non-residential construction is forecast to grow by 8 per cent in 1998. In non-residential building construction the growth rate is 8 and in civil engineering 7 per cent. Industrial building remains at about the same level as in 1997. The private service sector needs already new buildings especially in growth centres, where consumption is growing. Also the public sector will increase its building somewhat. In civil engineering transport connections are still the most important source of growth.

### **3.3 Ordinary renovation and maintenance**

Renovation and maintenance has been growing clearly for several years. In 1995 and in 1996 the growth rate was 8 per cent. During the recession this has been an important activity from the standpoint of employment. The growth in this area is explained by lower wage and material costs due to recession, low interest rates, state subsidies for renovation and maintenance, and by the increased need, because of the aging of buildings. Growth in the renovation and maintenance activity will slowdown somewhat because of a pick-up in new building construction, but it will remain still around 5-6 per cent in 1997 as well as in 1998.

### **3.4 Summary**

Housing investments are finally growing clearly after a long slump in this activity. The growth is currently mainly in the state-subsidized building, but also privately financed building starts will soon increase. Conditions for growth in housing investments have improved essentially, but the dramatic experiences of the past years still curb the recovery.

An essential question in a medium-term perspective is whether there is any danger of an overheating in the construction sector. In a couple of years this seems not be the case.

The unemployment rate in the construction sector is about 25 per cent. The corresponding figure for the whole economy is somewhat below 15 per cent. When looking at the aggregate unemployment rate of the construction sector there should not be any danger of overheating for many years. In the Helsinki area and in some jobs there are, however, already problems in finding qualified labour force at times when demand is high. A large share of unemployed

persons live in rural areas or in small towns where construction prospects are poor because of migration. Other problems are the education and the age of many of the workers. Low-skilled and aged workers find it difficult to find a job even in good times. Labour mobility inside the country and further vocational training would help this problem essentially.

## **4 NORWAY**

### **4.1 Housing**

#### **History**

House building more than halved from the peak of the late 1980s also in Norway. The development was similar to that in Finland. In both countries financial market liberalization led to an overheating in house building and later to a drastic fall in it. In Norway as also in Denmark housing investments, however, started to increase already in 1994. The growth continued to be brisk in 1995.

According to preliminary estimates about the development last year, investments in housing declined about 3 per cent in 1996. The number of dwellings started dropped from 20 011 in 1995 to 18 500 in 1996, but the increase in the average size of dwellings diminished the decrease in the volume of investments. The main reason for the decline was, according to the Norwegian Association of General Contractors, a lack of proper building sites. In 1994 and 1995 the firms could build on the sites they had acquired in the 1980s. During the recession the firms had no incentives to buy sites. In 1995 and 1996 available sites had become expensive or they were located in areas, where prices of old dwellings were relatively low. Also other reasons such as delays in the handling of new projects in municipal departments contributed to the decrease in housebuilding.

#### **Forecast for 1997**

Investments in residential buildings are forecast to increase by 6-7 per cent in 1996. Problems related to building sites and bureaucracy still affect negatively but to a smaller extent than previously. Increasing incomes of households, low interest rates and increasing prices of second-hand dwellings, however, more than compensate for this effect. The municipalities obviously will also increase their efforts in providing appropriate building sites.

Building will increase especially in Oslo and in Akershus, but also in other big cities construction is forecast to expand. The number of housing starts will rise to 20 000.

#### **Forecast for 1998**

In 1998 the same factors are forecast to affect construction as in 1997. Interest rates will evidently increase somewhat, but they are still historically low. Housing investments are forecast to grow as much as in 1996. The number of housing starts will increase to 22 500.

## 4.2 Non-residential construction

### History

Non-residential construction maintained its level during the recession of the early 1990s. This was due to a brisk demand for private non-residential buildings. Non-residential construction (including civil engineering) increased in 1995 by 10 per cent and in 1996 by 3.6 per cent. Last year non-residential building construction increased by 8 per cent. The private demand increased, whereas the public demand remained stagnant. Civil engineering declined by 3 per cent.

The building starts of non-residential buildings reached their peak in 1996. This was due to economic growth as well as due to large investments at the new airport near Oslo. In addition to building construction, the airport project also spawned civil engineering construction projects at the airport and in roads and the railway to it.

### Forecast for 1997

In 1997 non-residential construction (including civil engineering) is forecast to increase only slightly. Non-residential building is forecast to grow by 2.5 per cent. Civil engineering will decline by the same percentage.

The private demand for non-residential buildings continues to increase by 5 per cent, but the public demand declines about 7 per cent. The private demand is supported by strong economic growth, low interest rates and increasing rents. The public demand in turn is affected by reduced volumes in the large projects, especially at the airport. Starts of new non-residential buildings according to building area will decline from the peak of 1996. The volume of building will grow because a part of the projects will continue in 1997.

Civil engineering will decline due to diminishing volumes of road and railway investments to the new airport. This decline is partly compensated for by growth in investments in other civil engineering segments, like power plants and municipal engineering.

### Forecast for 1998

In 1998 non-residential construction is forecast to decrease slightly. Building construction will fall by a couple of per cent, but civil engineering will grow by 2 per cent.

The private as well as the public non-residential building will fall by 2 per cent. The decline in building starts in 1997 and 1998 will be reflected in volumes mainly in 1998. In the private sector the decline is due to the slightly falling growth rate in the GDP of the mainland-Norway and due to the evidently increasing interest rates.

In the public sector the reason for the falling volume is the completion of the large-scale airport project. The new airport will be taken into use in 1999. After a small decline in 1998 the area of started non-residential buildings is forecast to increase in 1999. In that year construction of commercial buildings in the neighbourhood of the new and the old airports is forecast to grow (at the new airport erection of buildings related to airport services and at the

old one construction of buildings geared toward the new use of the area). Also other large private and public projects are planned for the year 1999.

In civil engineering construction of power plants and municipal engineering will grow.

### **4.3 Ordinary renovation and maintenance**

Ordinary renovation and maintenance of dwellings is forecast to grow by 2-3 per cent in both years, i.e. by the same amount as private consumption. The same figure for non-residential buildings is about 3 per cent in both years. A shortage of qualified labour force limits the growth.

Maintenance in civil engineering work is forecast to remain steady in 1997 and to grow by 1 per cent in 1998. In the budget for 1997 expenditure on maintenance of state-owned roads has been reduced by 2 per cent. Next year it is forecast to grow by one per cent. Maintenance of roads owned by counties will remain steady in 1997 and 1998. Maintenance of roads is about 55 per cent of the whole maintenance in civil engineering. Maintenance in other civil engineering is assumed to grow by about 2 per cent a year.

### **4.4 Summary**

The output of the whole construction sector has been increasing since 1994. The sector will continue to expand in 1997 and 1998. In 1997 the growth will be about 2.5 per cent, but in 1998 it will be reduced by one percentage point mainly because of a decline in non-residential building. Housing investments will increase clearly in both years due to low interest rates, increasing incomes and increased prices of old dwellings. Civil engineering will fall slightly in 1997, but increase again in 1998.

## **5 SWEDEN**

### **5.1 Housing**

#### **History**

Housing investments fell for several years until 1996, when a stabilization occurred. House building fell during this period to a very low level. This decline was related to the fall in the GDP during 1991-1993, to increasing interest rates, to falling real disposable incomes of households and to cuts in tax deductions of interest payments and of state subsidies. The recovery in 1996 was due to support measures of the public sector. Public support was very extensive in rebuilding investments. In 1996 house building grew according to preliminary estimates by somewhat less than 15 per cent. New production as well as extraordinary renovation and maintenance increased.

The number of started new dwellings was 12 300, which was about the same amount as a year before. In 1990 the corresponding figure was 69 000. Starts of one- or two-family dwellings last year totalled 3 300 and starts of multi-dwelling buildings were 9 000. The number of



started rebuilding projects fell dramatically, because public support diminishes in 1997. In the case of multi-family houses the fall was from 43 000 in 1995 to 10 000 in 1996.

### **Forecast for 1997**

The Swedish Confederation for Construction Industry forecasts housing investments to decline by 2 per cent in 1997. The Swedish economic research institute *Konjunkturinstitutet* is more pessimistic: it forecasts a decline of about 15 per cent. The decline is due to the diminishing public support for rebuilding, the exact effect of which is difficult to estimate. The Confederation for Construction Industry forecasts rebuilding to decline by 10 per cent. Building of new dwellings will increase by 8 per cent.

The number of housing starts will increase to 13 000-14 000 dwellings. The growth is forecast to originate mainly in starts of one-family houses. This kind of building is supported by low interest rates and better economic and employment prospects for the whole economy. Building of multi-family dwellings will subside. This is due to declining public subsidies.

### **Forecast for 1998**

Next year housing investments are forecast to grow briskly by the Confederation for Construction Industry as well as by *Konjunkturinstitutet*. The former's growth forecasts is 16 per cent and the latter's 11.5 per cent. Investment in new buildings as well as in rebuilding will grow more than 10 per cent. New building is supported by an increase in demand in big cities, by the better economic situation and by the new subsidy for building of student houses. Changes in the financing system of housing and in interest rates are crucial uncertainties for the forecast.

## **5.2 Non-residential construction**

### **History**

Non-residential construction declined during the early 90's until 1994. The growth was brisk in 1994 and 1995, and more modest in 1996. The driving force behind growth was the increased demand of industry for new buildings. This in turn was due to the growth of exports. Last year building investments increased according to preliminary estimates whereas civil engineering decreased. Construction of industrial buildings increased still by about 10 per cent.

### **Forecast for 1997**

Non-residential construction investments (including civil engineering) are forecast to decline slightly in 1997. Construction of industrial buildings will decline by more than 5 per cent, other non-residential building and civil engineering will subside or increase only slightly.

Construction of industrial buildings seems to have reached its peaks in 1996 and now it is starting to decline somewhat. According to the investment surveys of the Central Statistical Bureau, industrial firms plan to reduce their construction investments by 20 per cent in 1997. Because of the inherent downside forecasting error in the surveys for the next year, the

outcome will evidently be a less dramatic fall. The development depends essentially on how the industrial production and the future prospects of industry change.

Other non-residential building (except that of industry) is forecast to grow by one per cent. A rise in private consumption by about 2 per cent obviously creates some need for construction of commercial buildings. In the public sector the need for improving the financial balances will evidently lead to a fall in building by a couple of per cent.

Civil engineering investments are forecast to be stagnant or increase only slightly in 1997. The outcome depends on the timing of the realization of some large-scale projects.

### **Forecast for 1998**

Non-residential construction is forecast to be stagnant in 1998. Views concerning the trends in construction of industrial buildings differ a lot. The Confederation of Construction Industry forecasts a decline of 5 per cent, whereas Konjunkturinstitutet expects a rise of 5 per cent. The greatest difference between the forecasts is in timing between the years 1997 and 1998. The confederation forecasts a steady fall by 5 per cent in both years. Konjunkturinstitutet in turn forecasts a big fall in 1997 and an increase in 1998.

Other non-residential building construction is forecast to increase by a couple of per cent due to increased demand for commercial space. Public construction is forecast to decline still somewhat. There are some pressures in Sweden, however, that the restraint could be relaxed somewhat already next year. If this were to happen, there could be some increase in public building construction. The same reasoning applies to civil engineering, too. In the baseline scenario these kinds of investments fall somewhat, but in the case of fiscal easing there could be a slight increase.

### **5.3 Ordinary renovation and maintenance**

Ordinary renovation and maintenance were increasing until 1994, but in 1995 this activity remained stagnant. A drastic fall in reparations of public buildings in 1995 led to a fall of the aggregate volume. Reparations increased only slightly in 1996. Ordinary maintenance is forecast to increase by a few per cent in 1997 as well as in 1998. Tax reductions for reparations obviously have a positive effect on maintenance works of house owners, even if their finances are tight. There is need for maintenance works also in the area of infrastructure.

### **5.4 Summary**

The output of the construction sector is forecast to fall slightly in 1997 and to increase again in 1998. The fall in 1997 is mainly due to a decline in rebuilding of dwellings and in construction of industrial buildings. Investment in new dwellings will increase.

In 1998 housing investments will increase briskly, while rebuilding will also start to grow. Developments in non-residential building are more uncertain. The outcome depends on the timing of realization of large-scale projects, on the state budget for year 1998 and on the timing of industrial building projects.

## 6 SUMMARY OF CONSTRUCTION IN THE NORDIC COUNTRIES

Construction is growing the most rapidly in Finland during the next couple of years. In Sweden the output of construction will decline slightly in 1997, but increase again in 1998. In Denmark and in Norway construction will grow by about 3 per cent in 1997. Next year the prospects are worse. In Denmark the output will fall and in Norway it will increase only slightly.

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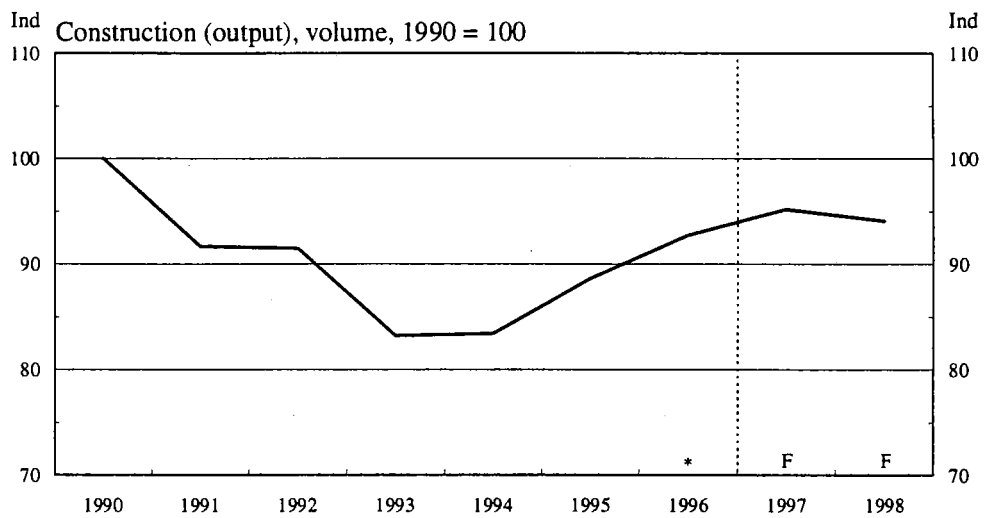
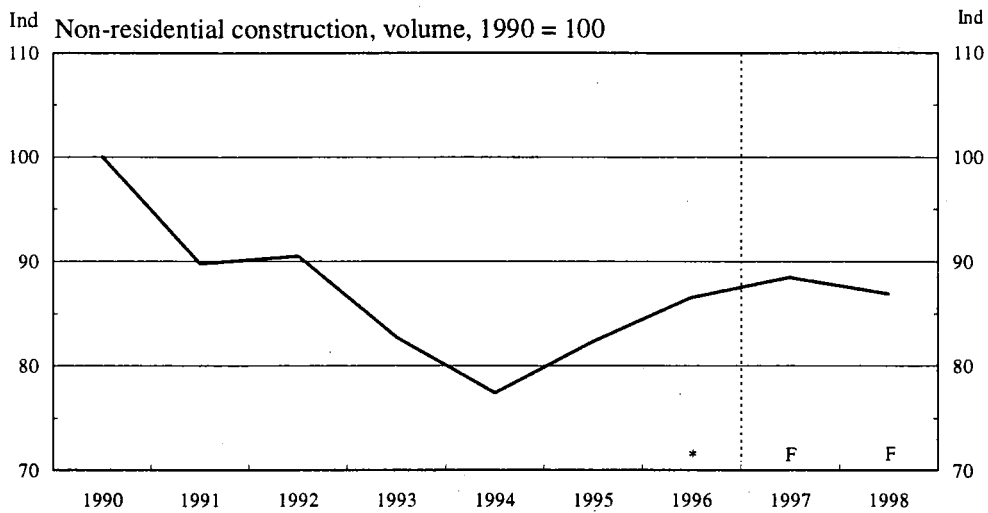
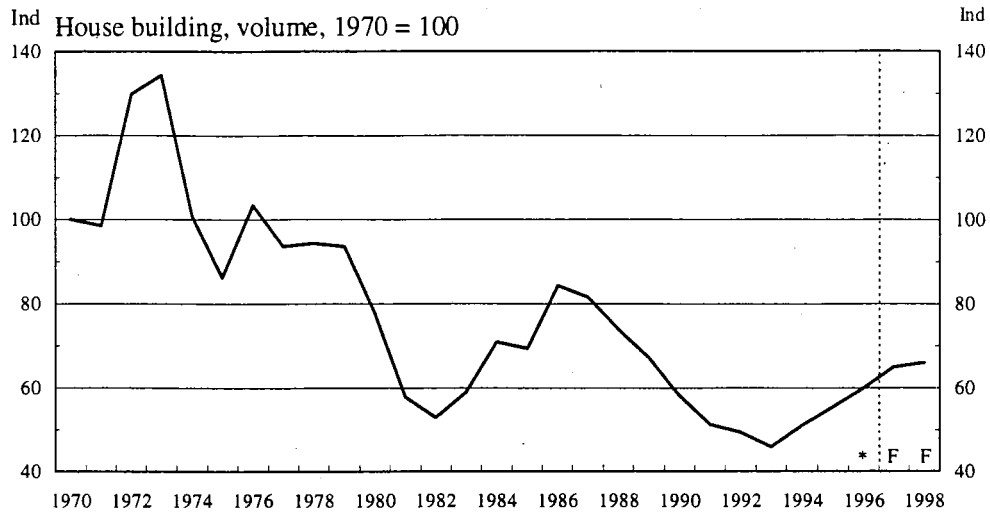
	1990	1991	1992	1993	1994	1995	1996*	1997 <sup>F</sup>	1998 <sup>F</sup>
1. House building									
- index 1990=100	100.0	88.3	85.1	78.6	87.7	95.5	103.1	111.9	113.5
- %-change	-13.7	-11.7	-3.7	-7.4	11.3	8.8	8	8.5	1.5
2. Non-residential construction <sup>1</sup>									
- index 1990=100	100.0	89.8	90.5	82.7	77.4	82.3	86.5	88.5	86.9
- %-change	1.6	-10.2	0.8	-8.6	-6.4	6.3	5.1	2.3	-1.8
2.1 Private non-residential buildings									
- index 1990=100	100.0	89.1	80.6	64.6	65.4	75.7	82.4	87.3	90.9
- %-change	-0.2	-10.8	-9.6	-19.8	1.3	15.6	8.8	6.0	4.2
2.2 Public non-residential buildings									
- index 1990=100	100.0	97.8	106.5	107.1	113.4	98.6	108.1	107.5	101.4
- %-change	-7.1	-2.2	9.0	0.6	5.8	-13.1	9.7	-0.6	-5.7
2.3 Civil engineering									
- index 1990=100	100.0	88.8	92.5	86.9	76.3	82.5	84.4	85.3	81.9
- %-change	4.6	-11.3	4.4	-6.2	-12.3	8.4	2.2	1.0	-4.0
Construction									
- index 1990=100	100.0	91.7	91.5	83.2	83.4	88.6	92.7	95.2	94.1
- %-change	-3.8	-8.3	-0.2	-5.5	0.2	6.2	4.6	2.8	-1.2

\* Preliminary estimate

<sup>F</sup> Forecast

<sup>1</sup> Includes civil engineering

Denmark



\* = Preliminary estimate, F = Forecast

	1990	1991	1992	1993	1994	1995	1996*	1997 <sup>F</sup>	1998 <sup>F</sup>
1. House building									
- index 1990=100	100.0	79.3	66.5	57.5	55.0	53.1	51.8	59.6	65.5
- %-change	-5.7	-20.7	-16.1	-13.6	-4.4	-3.4	-2.4	15	10
2. Non-residential construction <sup>1</sup>									
- index 1990=100	100.0	90.4	74.0	57.4	55.4	59.9	65.0	68.2	73.7
- %-change	2.4	-9.6	-18.1	-22.5	-3.4	8.0	8.5	5	8
2.1 Private non-residential buildings									
- index 1990=100	100.0	83.0	57.6	37.1	35.6	44.6	50.0	51.0	55.5
- %-change	0.2	-17.0	-30.6	-35.6	-4.0	25.3	12	2	9
2.2 Public non-residential buildings									
- index 1990=100	100.0	103.3	102.4	85.0	83.2	74.9	82.4	90.6	97.0
- %-change	9.5	3.3	-0.9	-17.0	-2.1	-10.0	10	10	7
2.3 Civil engineering									
- index 1990=100	100.0	94.8	87.0	77.5	76.5	80.2	83.5	90.2	96.5
- %-change	2.9	-5.2	-8.3	-10.9	-1.3	4.8	4.1	8	7
Construction									
- index 1990=100	100.0	88.4	75.2	64.4	63.1	65.5	68.4	74.5	81.2
- %-change	-2.3	-11.6	-14.9	-14.4	-2.0	3.8	4.4	9	9

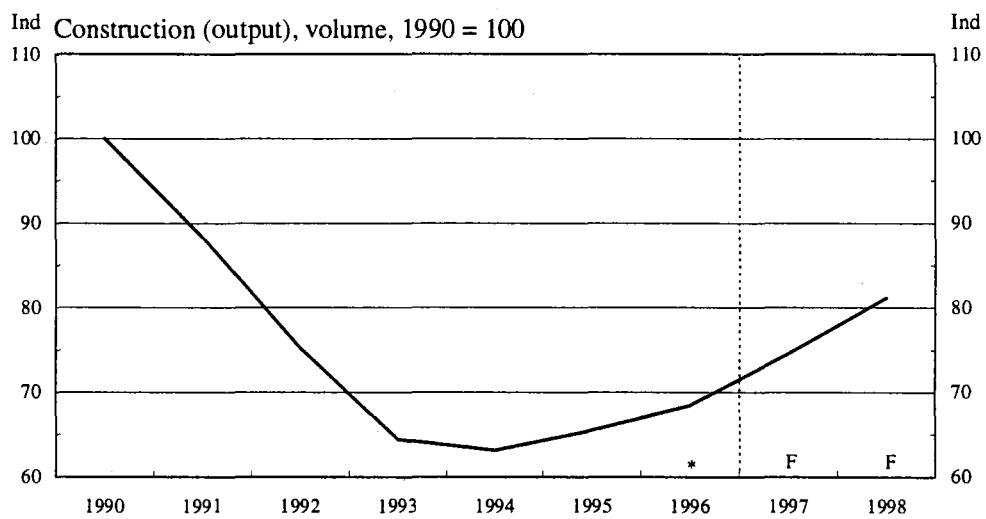
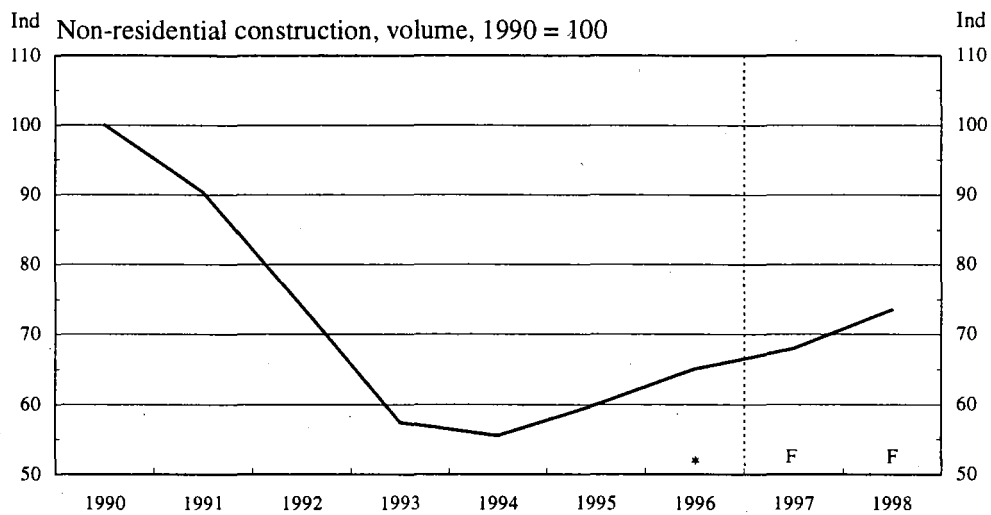
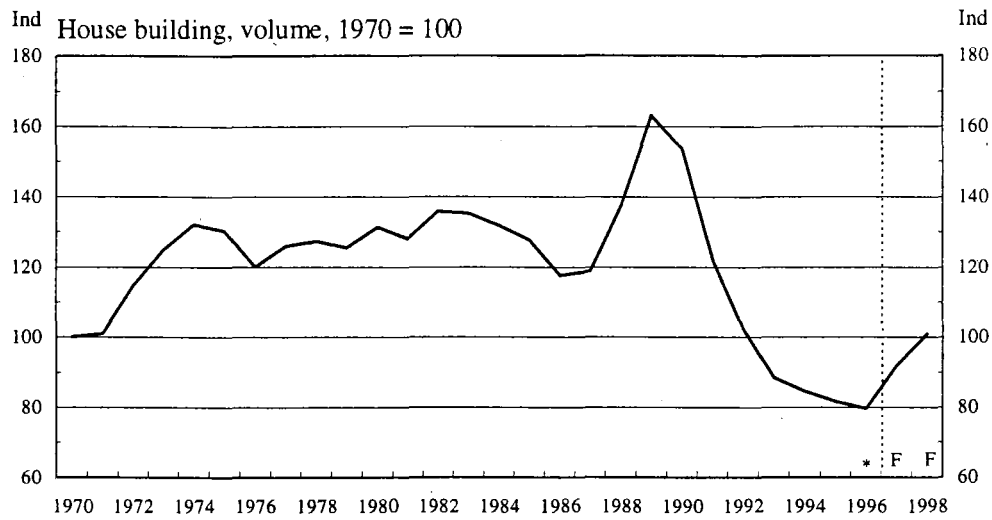
\* Preliminary estimate

<sup>F</sup> Forecast

<sup>1</sup> Includes civil engineering



Finland



\* = Preliminary estimate, F = Forecast

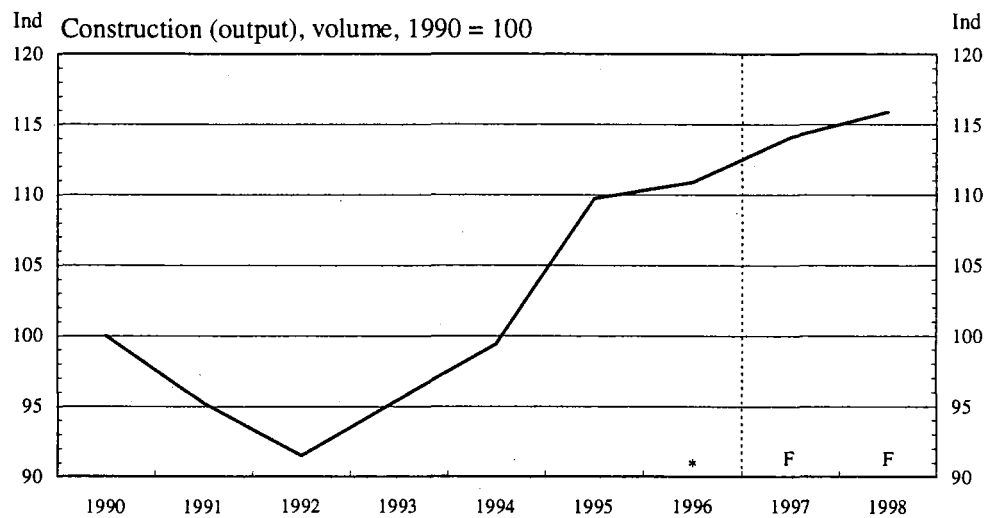
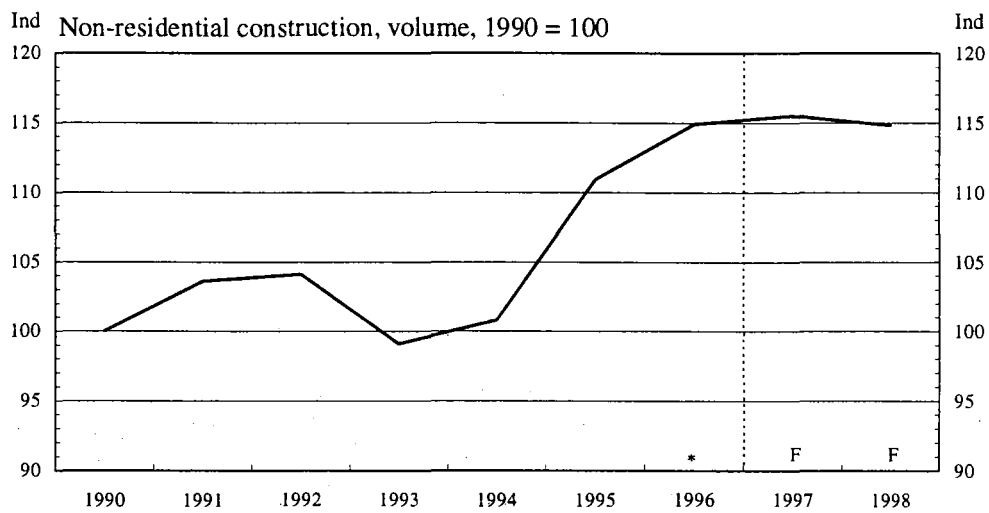
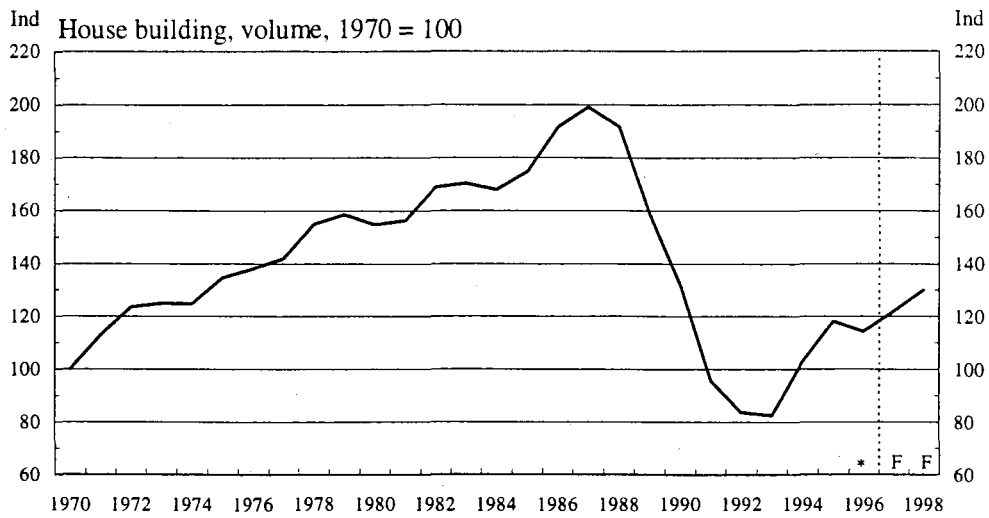
	1990	1991	1992	1993	1994	1995	1996*	1997 <sup>F</sup>	1998 <sup>F</sup>
1. House building									
- index 1990=100	100.0	72.7	63.5	62.7	78.0	89.8	86.7	92.5	98.8
- %-change	-17.1	-27.3	-12.6	-1.4	24.5	15.0	-3.5	6.8	6.8
2. Non-residential construction <sup>1</sup>									
- index 1990=100	100.0	103.6	104.1	99.1	100.8	110.9	114.9	115.5	114.8
- %-change		3.6	0.5	-4.8	1.7	10.0	3.6	0.5	-0.6
2.1 Private non-residential buildings									
- index 1990=100	100.0	92.8	107.9	117.1	134.8	153.0	170.0	179.1	175.7
- %-change		7.2	16.3	8.5	15.1	13.5	11.1	5.4	-1.9
2.2 Public non-residential buildings									
- index 1990=100	100.0	124.8	77.8	67.8	60.3	68.5	68.0	63.4	62.1
- %-change		24.8	-37.7	-12.9	-11.1	13.6	-0.7	-6.8	-2.1
2.3 Civil engineering									
- index 1990=100	100.0	100.8	114.3	101.7	96.7	102.0	98.8	96.3	98.0
- %-change		0.8	13.4	-11.0	-4.9	5.5	-3.1	-2.5	1.8
Construction									
- index 1990=100	100.0	95.2	91.5	95.5	99.4	109.7	110.9	114.1	115.9
- %-change		-4.8	-3.9	4.4	4.1	10.4	1.1	2.9	1.6

\* Preliminary estimate

<sup>F</sup> Forecast

<sup>1</sup> Includes civil engineering

Norway



\* = Preliminary estimate, F = Forecast

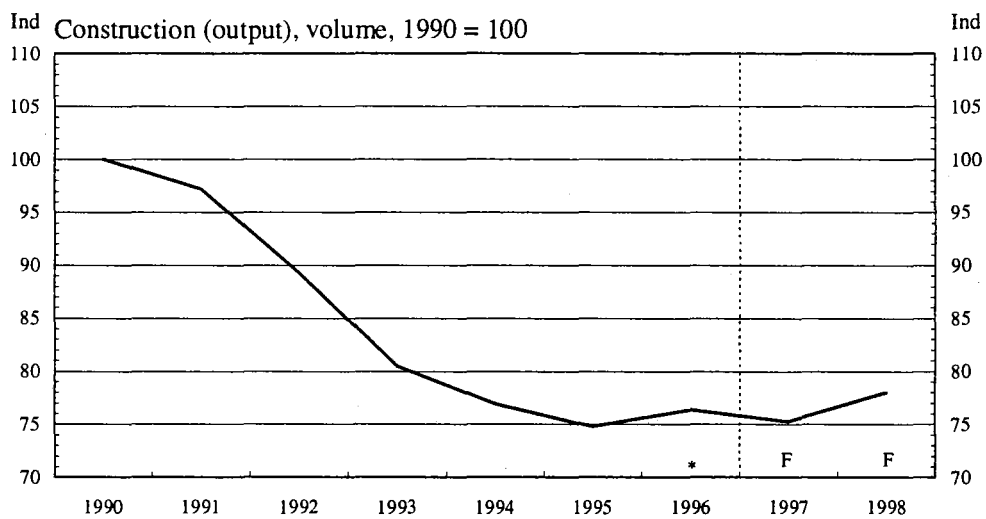
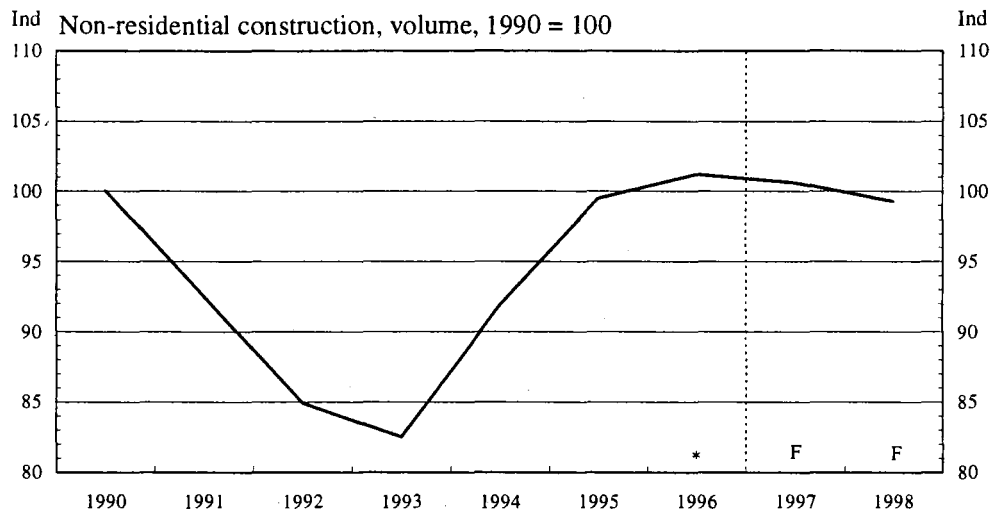
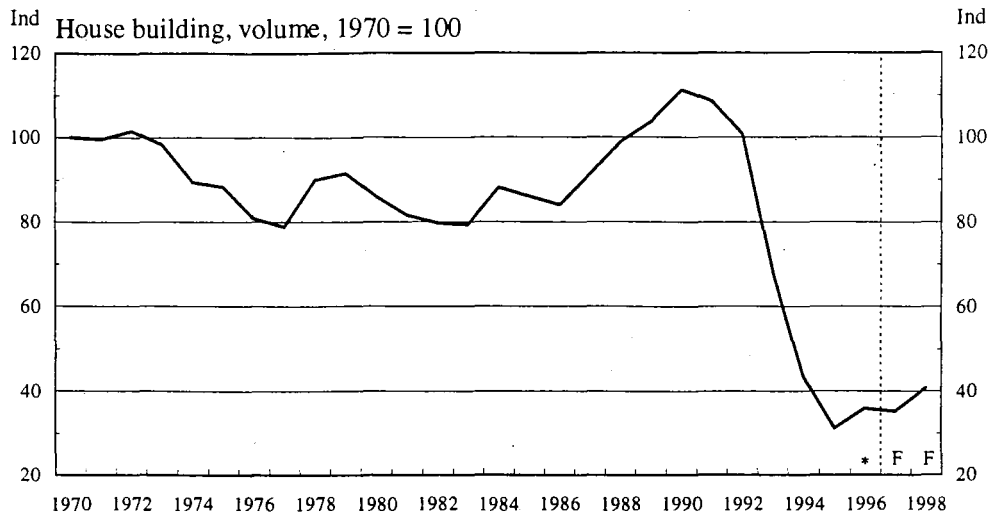
	1990	1991	1992	1993	1994	1995	1996*	1997 <sup>F</sup>	1998 <sup>F</sup>
1. House building									
- index 1990=100	100.0	97.6	90.5	60.8	39.0	28.1	32.3	31.7	36.7
- %-change	7.2	-2.4	-7.3	-32.8	-35.9	-28.0	15.0	-2	16
2. Non-residential construction <sup>1</sup>									
- index 1990=100	100.0	92.5	84.9	82.5	91.9	99.5	101.2	100.6	99.3
- %-change	-1.9	-7.5	-8.2	-2.8	11.4	8.2	1.7	-0.6	-1.3
2.1 Private non-residential construction <sup>1</sup>									
- index 1990=100	100.0	89.9	79.3	70.6	78.9				
- %-change	-1.8	-10.1	-11.8	-11.0	11.8				
2.2 Public non-residential construction <sup>1</sup>									
- index 1990=100	100.0	99.4	100.1	115.3	127.9				
- %-change	-2.2	-0.6	0.7	15.2	10.8				
2.3 Civil engineering									
- index 1990=100	100.0	95.5	99.8	104.9	114.4	124.5	111.2	110.1	103.5
- %-change		-4.5	4.5	5.1	9.1	8.8	-10.7	-1	-4
Construction									
- index 1990=100	100.0	97.2	89.3	80.5	76.9	74.8	76.4	75.3	78.0
- %-change	1.0	-2.8	-8.1	-9.8	-4.5	-2.7	2.1	-1.4	3.6

\* Preliminary estimate

<sup>F</sup> Forecast

<sup>1</sup> Includes civil engineering

Sweden



\* = Preliminary estimate, F = Forecast

**CONSTRUCTION IN EUROPE: MAIN TENDENCIES IN 1997-1998**

**Positive**

- low interest rates
- improving income expectations, especially in high-income groups
- increasing prices of old dwellings
- growing investments in machinery and equipment increase also construction

**Negative**

- high unemployment
- balancing of public finances
  - cuts in subsidies
  - weakness of the public sector's own construction
- in many countries firms still have a low rate of capacity utilization of buildings
  - investments are directed mainly toward machinery and equipment
- in Germany the level of construction is already high
- in Denmark and in Norway large public investment projects will soon be finished
- in Finland and in Sweden investment activity of industry is weakening

## APPENDIX 10

### AGGREGATE OUTPUT OF CONSTRUCTION IN 1996-1998, %-change in volumes

	1996	1997	1998
Germany	-2.6	-0.8	-0.2
West Germany	-3	-0.2	0.9
East Germany	-1.7	-2.2	-3.1
France	-2.8	-1	0.4
United Kingdom	0.3	2.7	3.5
Italy	1.1	1.2	1.9
Spain	-2.8	2	2.3
Denmark	4.6	2.8	-1.2
Finland	4.4	9	9
Norway	1.1	2.9	1.6
Sweden	2.1	-1.4	3.6
Belgium	0	2.1	2
Netherlands	1.8	4	2.6
Austria	-1.5	-1.5	-0.5
Switzerland	-5	-3.7	-1.2

Sources: papers presented at the conference "Construction in Europe" (organized by Handelsblatt) in Berlin May 27th-28th, 1997.

## APPENDIX 11

### RESIDENTIAL INVESTMENT IN EUROPE, %-change in volumes

	1996	1997	1998
Germany	-0.3	-1.2	-1.1
West Germany	-1.6	-1	-0.5
East Germany	4.4	-2	-3
France	-2.9	-0.3	1.5
United Kingdom	-7		
Italy	-2.4	0.6	0.9
Spain	5.8	4.6	7.5
Denmark	8	8.5	1.5
Finland	-2.4	15	10
Norway	-3.5	6.8	6.8
Sweden	15	-2	16
Belgium	0	2	1.2
Netherlands	0.5	4.6	2
Austria	2	-2	-1
Switzerland	-8.1	-6.2	-2.2

Sources: papers presented at the conference "Construction in Europe" (organized by Handelsblatt) in Berlin May 27th-28th, 1997.



## APPENDIX 12

### NON-RESIDENTIAL CONSTRUCTION OF FIRMS, %-changes in volumes

	1996	1997	1998
Germany	-4.5	0.3	1.3
West Germany	-3.4	2	4
East Germany	-6.6	-3	-4
France	-1.9	-2	1
United Kingdom			
Italy	8.4	1.7	2.7
Spain			
Denmark	8.8	6	4.2
Finland	12	2	9
Norway	11.1	5.4	-1.9
Sweden			
Belgium	1.1	3.4	4.1
Netherlands	3.8	5.4	4.5
Austria			
Switzerland	-3.4	-2.1	-0.6

Sources: papers presented at the conference "Construction in Europe" (organized by Handelsblatt) in Berlin May 27th-28th, 1997.

**NON-RESIDENTIAL BUILDING CONSTRUCTION INVESTMENT OF  
THE PUBLIC SECTOR, %-changes in volumes**

	1996	1997	1998
Germany	-6.8	-1.3	-0.5
West Germany	-7.8	-1.5	0
East Germany	-4.8	-1	-1.5
France	-3.5	-3	-3
United Kingdom		-2	2
Italy	1.5	1.9	3.7
Spain			
Denmark	9.7	-0.6	-5.7
Finland	10	10	7
Norway	-0.7	-6.8	-2.1
Sweden			
Belgium	-1.8	0	0
Netherlands	1.1	0.9	1
Austria			
Switzerland	-1.8	-1.5	0

Sources: papers presented at the conference "Construction in Europe" (organized by Handelsblatt) in Berlin May 27th-28th, 1997.



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