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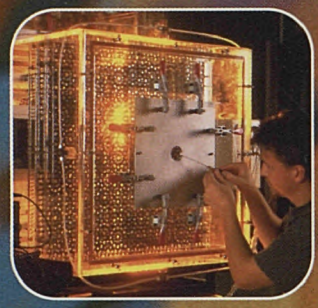
Monthly Panorama of European Industry



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ISSUE 5/98 ■ MAY 1998

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Monthly Panorama of European Industry

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Theme 4
Energy and industry
Series B
Short-term statistics

Sent to press in May 1998

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (http://europa.eu.int)

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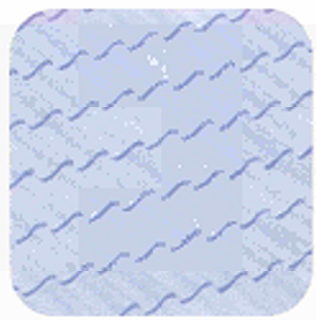
Editorial

Latest outlook - the most recent short-term indicators for European industry in tabular and graphic format, page 7

Last month we changed the base year of all short-term indicators to 1995 = 100. This month there is another fundamental change to the publication which readers should be aware of: the introduction of series for the aggregate of the countries participating in Monetary Union. These series are labelled EUR11 and may be found for a range of tables and graphics within the publication. With the decision on participating countries now taken, the introduction of these series aims towards the full integration of the Euro in this publication.

Data in this month's issue goes to February 1998. The EU-15 production index rose by 0.9% during the latest three month period for which data was available. The data for the participating countries in Monetary Union was seen to rise by 0.9% over the same period. Looking at industrial producer prices there was a continuation of the trend seen in the figures for recent months - price inflation for February 1998 was equal to 0.7% for EU-15. The corresponding figure for the eleven countries making up the Euro zone was also 0.7%.



In depth - a close look into the non-metallic mineral products, page 51

The second half of this month's issue is devoted to the topic of non-metallic minerals (NACE Rev.1 26). There is in addition a special focus on the salt industry.

Pedro Díaz Muñoz,
Luxembourg

Special focus - a feature on the salt industry in the European Union, page 77

Contents

The Monthly Panorama of European Industry has the objective of furnishing readers with an instrument which will allow them to follow the evolution of industrial short-term trends and also show the structure and activity of an industry. The publication appears eleven times during the course of the year. When the occasion warrants topical articles may well be treated in the form of a special edition, up to six of which are planned for 1998.

This publication is a joint project of Eurostat and Directorate General III (Industry policy).
The opinions expressed in this publication are those of the individual authors alone and do not necessarily reflect the position of the European Commission.

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Precision instruments

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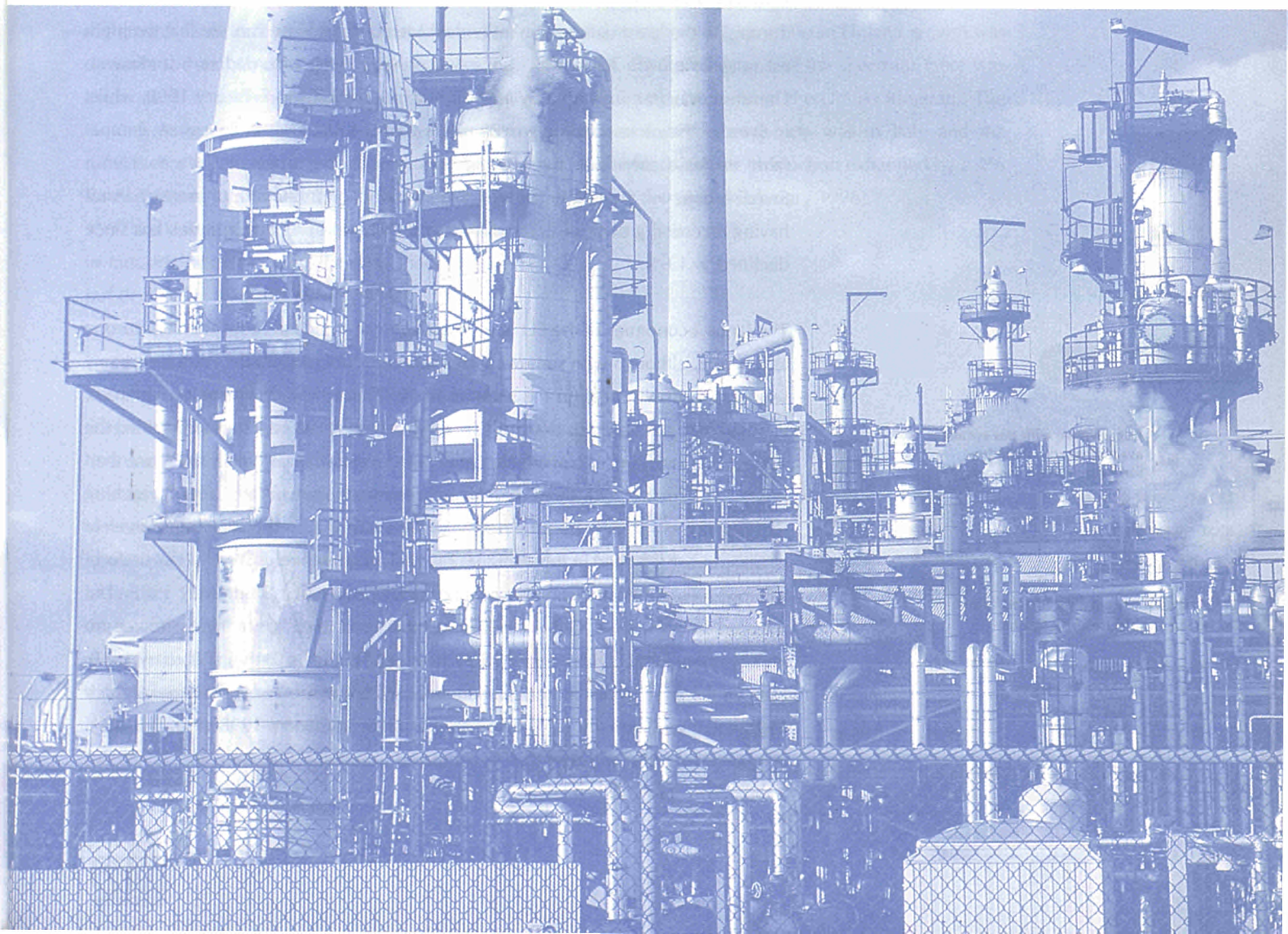
Data extracted on 12-05-98

1. Total industry



1. Total industry

Three month on three month production growth

The development of the production index in Europe was seen to quicken through to a maximum growth rate of 1.4%, reached in the summer of 1997 (during the period May 1997 to July 1997). EU-15 production rose by 0.9% in the three months to February 1998. The EU-15 aggregate has seen three consecutive reductions in its growth rates (each equal to 0.1 percentage points). Hence, European production has seen output decline from 1.1% in November 1997 down to 0.9% by February 1998. Compared to a year before, growth rates are identical, in February 1997 production was also up by 0.9%.

When looking at the eleven countries that will make up the first wave of Monetary Union, the corresponding growth rate was equal to 0.9%. The EUR11 aggregate has now posted growth of 0.9% for the last four successive months (November 1997 to February 1998).

Country analysis

Turning to the latest data for the individual Member States we can see that the highest rates of growth for production are at present being recorded in Scandinavia. Danish production increased by 1.6% in the three months to February 1998, whilst in Sweden the corresponding growth rate was also 1.6%. Danish figures are comparable to those seen over the last eight months (in the range of 1.6% to 1.9%). Swedish data was starting to show signs of a reduction in the rate of increase. After having recorded growth of 2.3% in February 1997, the production index has since declined to 1.6%.

The larger economies of the EU have posted similar trends to those seen for Europe as a whole, although with somewhat different orders of magnitude. France and Italy saw output growth peak in the summer of 1997 and slow down somewhat since. German output reached its maximum in the summer of 1997 and has maintained the same growth rate since. Nevertheless, the pace of growth was higher in France than it was in Germany, with three month on three month growth rates almost reaching the two per cent mark by June 1997, whilst in Germany the maximum level of expansion was reached in July 1997 (1.2%). Italian growth rates were not as uniform as those seen in either Germany or France, they peaked at 1.9% in May 1997 - but returned to 0.4% by the end of 1997. Latest data for the start of 1998 showed no improvement in the Italian growth rate - it was still rising by 0.4% in February 1998. Data for the three largest industrial economies of Europe showed growth for February 1998 equal to: Germany 1.2% (compared to 1.2% in January 1998); France (1.5%, compared to 1.6%) and Italy (0.4%, compared to 0.4%).

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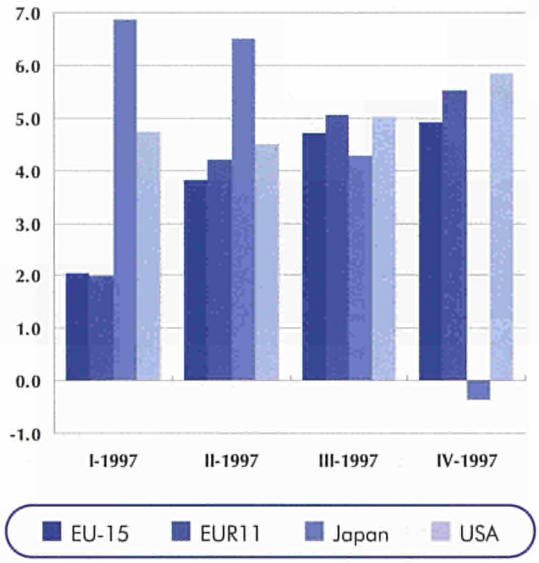
EU-15 producer price growth

was 0.7% year-on-year for

February 1998

Figure 1.1



Industrial production: growth rate, year on year (%)

Source: eurostat

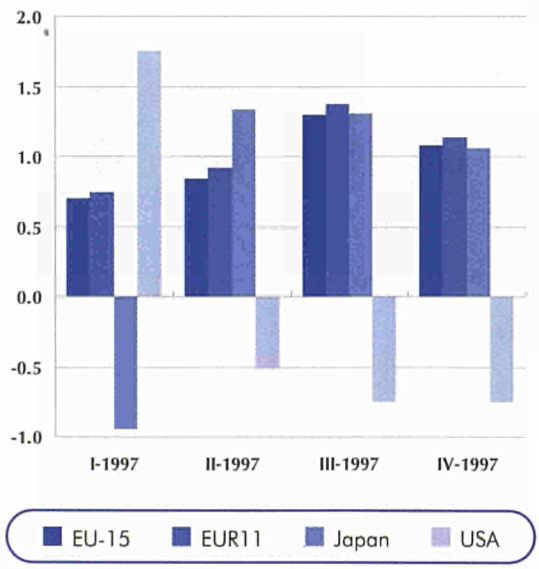
In the United Kingdom the picture was somewhat different as the British economy is not following the same economic cycle as most of Europe. Hence, industrial production peaked back in January 1997, at the comparatively moderate rate of 0.9%. In the thirteen months for which data is available since, the growth rates for output have been following a downward trend. By May 1997 there was the first evidence of a decline in industrial activity in the United Kingdom economy (-0.1%). The five months that followed saw growth at very moderate levels (between 0.0% and 0.3%). Since November 1997 the United Kingdom has recorded a reduction in industrial activity. Latest data saw industrial output decline by 0.2% in February 1998.

At the level of the individual countries there was year-on-year growth of 5.3% during the year to February 1998 in Germany. Comparable rates were: 6.9% in France, 2.2% in Italy and -0.8% in the United Kingdom. The highest rate of growth amongst the Member States (using this measure) was in Spain (11.7%), whilst in Finland growth was 8.7%. At the other end of the spectrum there was only a negative trend in the United Kingdom. The second lowest growth rate was in Italy and the Netherlands, where production expanded by 2.2% (during the year to February 1998).

Year on year growth of production

Turning to the year on year growth rate of production, EU-15 output was seen to rise by 4.7% in February 1998 (when compared to data for February 1997). The equivalent growth rate for the eleven countries of the first wave of Monetary Union was 5.7%. Compared to data for the month of January 1998 the figures showed an increase in the rate of growth. For EU-15, the growth rate was 4.5% in the first month of 1998 - whilst for EUR11 there was similar growth of 5.7%. Both sets of data have shown rates of growth between four and six per cent for the last eight months.

Figure 1.2

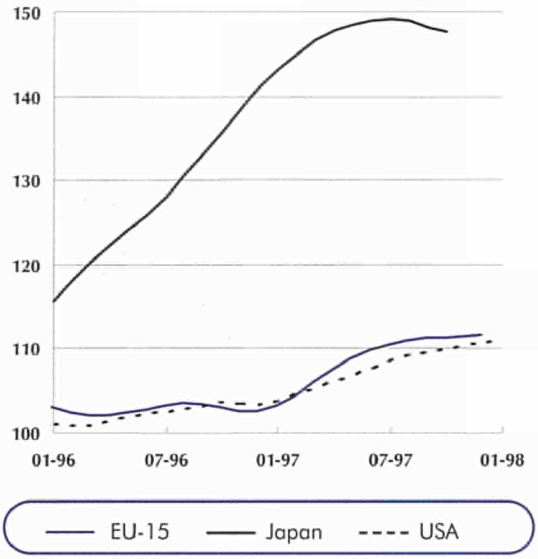


Producer prices: growth rate, year on year (%)

Source: eurostat

Figure 1.3

New orders
index
(1995 = 100)



Source: eurostat

Output trends in Japan and the United States

Three month on three month growth rates for the trend of industrial production for Japan and the United States showed that there were marked differences in fortunes. In Japan, the latest figure for February 1998 was a reduction in activity of 1.6% - whilst the United States industrial economy expanded by 1.2% during the same period.

Turning to a comparison of one month to the same month of a year before - again there was a deterioration in the index for Japan, down by 1.7% (February 1998 compared to February 1997), compared to -2.5% the month before. In the United States (again February 1998), there was an increase of 4.9% in industrial production compared to data for a year before. This was the eighth consecutive month that the United States posted growth in excess of the four per cent level (using this measure).

Producer price indices

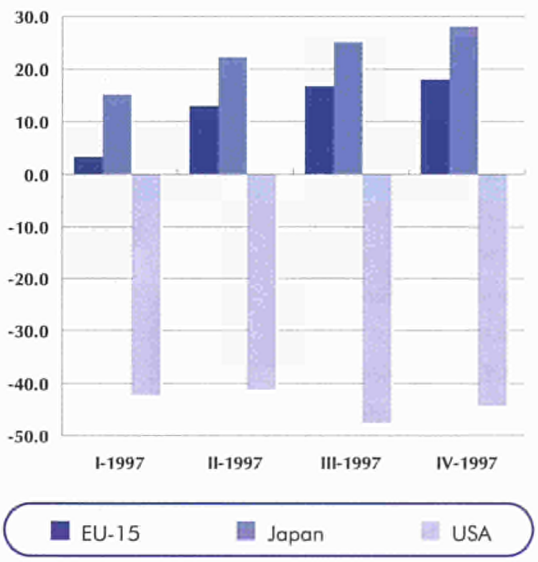
Producer price growth in Europe seemed to be expanding during the summer of 1997, reaching 1.4% by August 1997. However, there have now been two consecutive months with a growth rate under the one per cent level. The first two months of 1998 saw producer price growth equal to 0.7%.

Turning to the same indicator for the eleven countries that will form the first wave of Monetary Union, we can see that price growth was at a similar level. Growth of producer prices for EUR11 was also equal to 0.7% in February 1998.

In the individual Member States there was not a great deal of fluctuation between the data being reported by each country. For example, the highest growth rate was in Luxembourg, equal to 3.2%, whilst the most subdued rate was seen in France where there was a change of -0.2% (data again for February 1998). The rates of increase recorded by the other main European economies were: Germany (0.7%), Italy (1.3%), the United Kingdom (0.9%) and Spain (0.5%).

Figure 1.4

Quarterly
trade balance -
manufactured goods
(billion ECU)



Source: eurostat

Industrial production (working day adjusted) & trade balance

In Japan the recent period of fairly high growth in producer prices continued to decelerate. From a peak of 1.4% growth in September 1997, Japanese producer prices have increased at a slower pace in successive months, reaching 0.4% by February 1998.

The United States continued to experience deflation for total industrial activity. Latest data recorded a decrease of 2.6% in producer prices compared to 3.2% in January 1998. This was the eleventh consecutive month of decreasing producer prices.

New orders decreasing in Germany

There is a lack of data available for a number of Member States for this particular variable. Nevertheless, German new orders were seen to rise by 0.7% in the three months to February 1998 (compared to the previous three months). This marked a distinct change from the rates of growth that were being recorded in June 1997 (4.7%).

For the other Member States the following rates of growth were recorded (again three months compared to the previous three months): the United Kingdom (1.1%, October 1997); Italy (0.5%, January 1998), the Netherlands (3.1%, November 1997) and Sweden (-0.1%, January 1998).

This text was written by: Andrew Redpath

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Table 1.1

Industrial production: growth rate, year on year (%)

	EU–15	EUR11	Japan	USA
03-97	1.8	2.1	7.2	4.7
04-97	5.3	5.7	4.8	5.5
05-97	2.2	2.7	7.7	4.3
06-97	3.8	4.2	7.0	3.7
07-97	5.7	6.1	4.9	5.2
08-97	4.3	4.8	4.8	5.1
09-97	4.1	4.2	3.3	4.8
10-97	5.6	6.0	1.6	5.8
11-97	4.4	5.1	-0.7	5.7
12-97	4.8	5.4	-2.0	6.0
01-98	4.5	5.7	-2.5	5.3
02-98	4.7	5.7	-3.2	4.9

Source: eurostat

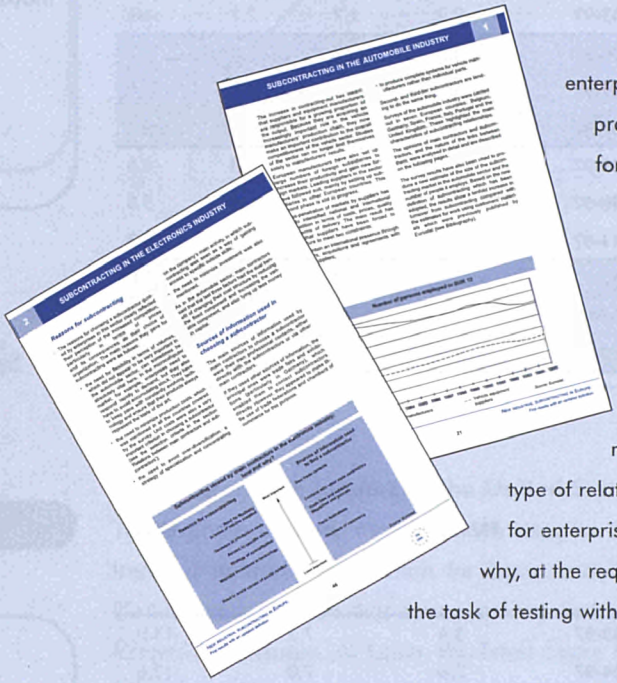
Table 1.2

Monthly trade balance - manufactured goods (billion ECU)

	EU–15	Japan	USA
03-97	3.4	7.3	-13.0
04-97	2.8	7.0	-13.6
05-97	4.4	6.8	-14.3
06-97	5.6	8.4	-13.4
07-97	9.9	8.3	-15.3
08-97	3.3	7.1	-15.5
09-97	3.4	9.6	-16.9
10-97	6.7	9.4	-14.7
11-97	4.4	8.7	-13.8
12-97	6.7	9.8	-15.9
01-98	:	3.8	-16.8
02-98	:	10.8	-17.1

Source: eurostat

Other Eurostat products



New industrial sub-contracting in Europe

Within a context of increased international competition, European enterprises have been forced to restructure and to outsource a number of production functions. Recourse to subcontracting constitutes one of the forms of this outsourcing. However, subcontracting itself is evolving: in most cases, it is not restricted to the simple processing of materials supplied by a main contractor. Subcontractors are increasingly responsible for key operations in the production process (purchase of raw materials, design of products, investment, etc).

The nature of the interdependence between subcontractors and main contractors is therefore changing, and is bringing about a new type of relationship which must be taken into account in the policies carried out for enterprises. Information about enterprises must adapt to this change. This is why, at the request of the European Commission's DG XXIII, Eurostat has taken on the task of testing within volunteer Member States a new concept of subcontracting and of evaluating its importance and characteristics.

New industrial subcontracting in Europe presents the results of Eurostat's pilot statistical exercise in which four sectors were the subject of surveys or studies:

★ the automobile sector;

★ electronics;

★ textiles/clothing;

★ aeronautics.

For each sector, a study was made of the importance of subcontracting within the purchases of main contractors, the importance of subcontracting sales within the subcontractors' turnover figures, the geographical extent of subcontracting transactions, and finally the main characteristics of the links established between main contractors and subcontractors (existence of contracts, supply of materials, cooperation in research and development, etc).

The measurements that were carried out within this pilot exercise, using harmonised methodology and concepts, contribute today to a better understanding of the organisation of industrial relationships which underpin four essential sectors of the European economy.

The publication is available in French and English.
Catalogue number in French, CA-01-96-139-FR-C; in English, CA-01-96-139-EN-C.
Price: 19 ECU.
Please see the list of sales offices at the end of the publication.

2. Latest outlook

Table 2.1

Business cycle at a glance: growth rate, three months compared to the previous three months (%)

	Latest 3 months available	Estimated output index (1)	Production	Producer prices	Capacity utilisation (2)	New orders
EU–15	12-97 ⇨ 02-98	↗	↗	→	→	:
B	12-97 ⇨ 02-98	↗	↗	↘	↘	:
DK	12-97 ⇨ 02-98	:	↗	↘	↗	↗
D	12-97 ⇨ 02-98	→	↗	→	→	↗
EL	11-97 ⇨ 01-98	:	→	→	↗	:
E	12-97 ⇨ 02-98	↗	↗	→	↘	:
F	12-97 ⇨ 02-98	↗	↗	→	↘	:
IRL	08-97 ⇨ 10-97	↗↗	↗↗	→	↗	→
I	12-97 ⇨ 02-98	↗	→	→	↗	:
L	12-97 ⇨ 02-98	↗	↗	→	↗↗	↗↗
NL	12-97 ⇨ 02-98	↗	→	→	→	:
A	11-97 ⇨ 01-98	↗	↗↗	:	↘	→
P	11-97 ⇨ 01-98	↗	→	:	↘	:
FIN	12-97 ⇨ 02-98	↗	↗↗	:	→	:
S	12-97 ⇨ 02-98	↗↗	↗	→	↗	→
UK	12-97 ⇨ 02-98	↗	→	↗	→	:
Japan	12-97 ⇨ 02-98	:	↘	→	:	:
USA	12-97 ⇨ 02-98	:	↗	↘	:	:

Growth rates:

↗↗			>2.5%
↗	0.5%	→	2.5%
→	-0.5%	→	0.5%
↘	-2.5%	→	-0.5%
↘↘			<-2.5%

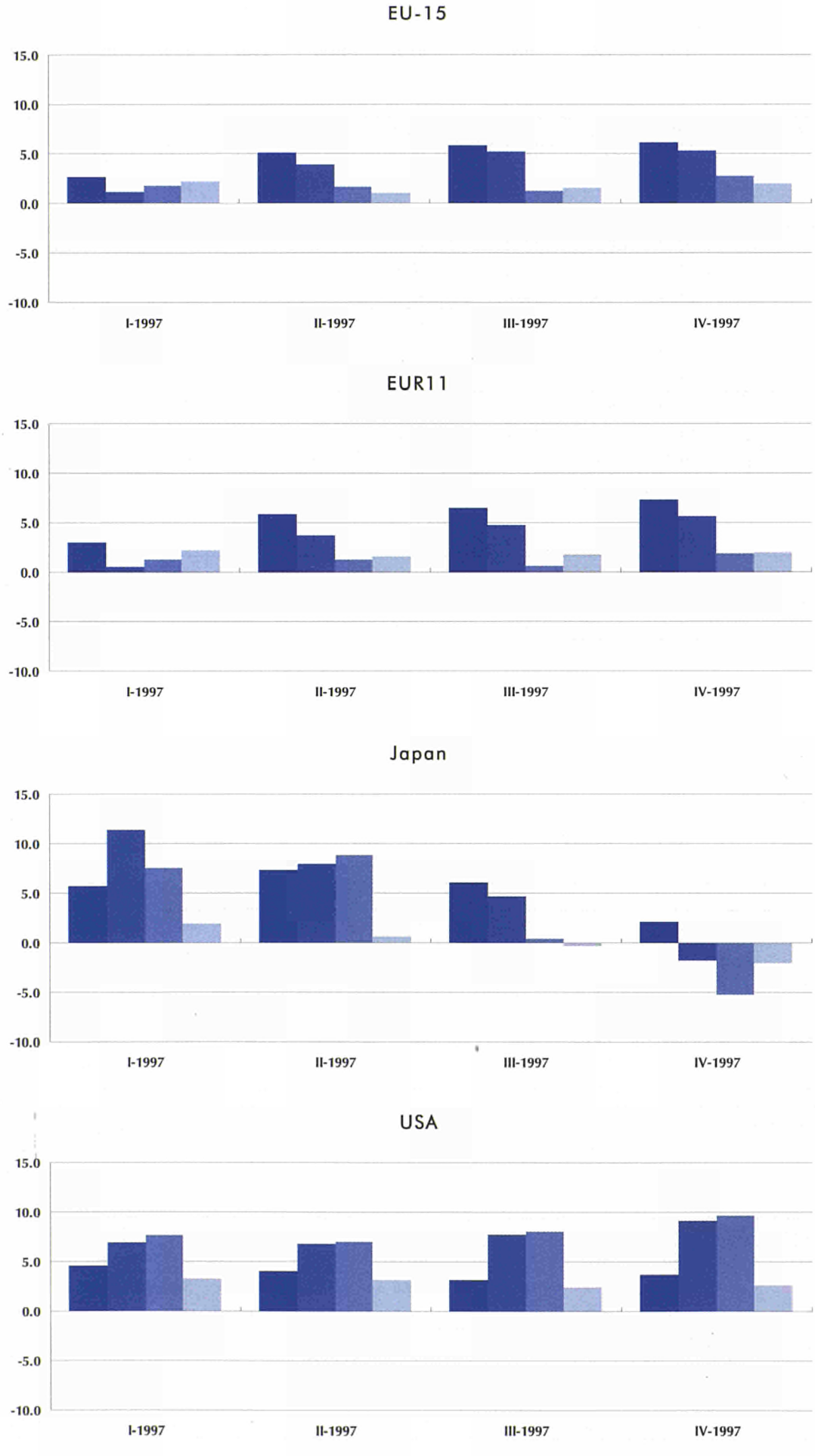
1) EOI runs two months ahead of the period given
2) capacity utilisation is fixed on the first month of the quarter of the period given

Source: eurostat

Production index (working day adjusted)

Figure 2.1

Industrial production for the main industrial groupings: growth rate, year on year (%)



Source: eurostat

Table 2.2

Industrial production: indices (1995 = 100)

	1995	1996	1997	09-97	10-97	11-97	12-97	01-98	02-98
EU-15	100.0	100.1	103.9	104.8	105.6	105.8	105.9	106.1	106.7
B	100.0	101.1	105.6	104.7	106.2	106.3	110.9	107.0	109.1
DK	100.0	101.1	105.6	107.6	107.0	108.6	109.3	110.2	109.5
D	100.0	100.2	104.1	105.3	105.9	106.3	105.7	106.7	108.1
EL	100.0	101.0	102.7	103.8	101.8	102.2	102.3	104.5	:
E	100.0	99.0	105.9	108.2	109.6	108.8	109.4	109.2	112.8
F	100.0	99.9	103.8	105.0	107.2	105.6	108.0	107.0	107.7
IRL	100.0	108.0	:	129.5	130.3	:	:	:	:
I	100.0	97.2	99.8	100.7	100.9	101.0	102.3	101.6	100.8
L	100.0	99.6	106.3	107.4	111.8	110.7	112.5	113.1	110.1
NL	100.0	102.7	104.7	104.2	105.7	107.7	104.9	104.2	104.9
A	100.0	100.6	106.7	108.2	109.1	110.2	114.8	109.1	:
P	100.0	101.3	103.9	106.0	106.8	107.1	103.9	104.5	:
FIN	100.0	103.4	112.6	114.8	119.6	117.2	120.8	117.6	118.2
S	100.0	103.1	111.2	115.0	113.2	117.3	117.5	111.9	114.1
UK	100.0	100.9	102.2	103.0	102.8	102.3	102.4	102.2	101.7
Japan	100.0	102.4	106.8	108.1	108.0	102.8	104.1	107.1	103.3
USA	100.0	103.5	108.6	109.6	110.5	111.1	111.7	111.7	111.8

Source: eurostat

Table 2.3

Industrial production for the main industrial groupings: indices (1995 = 100)

	1995	1996	1997	09-97	10-97	11-97	12-97	01-98	02-98
Total industry									
EU-15	100.0	100.1	103.9	104.8	105.6	105.8	105.9	106.1	106.7
Japan	100.0	102.4	106.8	108.1	108.0	102.8	104.1	107.1	103.3
USA	100.0	103.5	108.6	109.6	110.5	111.1	111.7	111.7	111.8
Intermediate goods									
EU-15	100.0	99.1	104.0	105.0	105.9	106.3	106.6	106.9	107.4
Japan	100.0	100.1	105.4	107.3	107.0	102.8	103.6	105.6	102.1
USA	100.0	102.4	106.3	106.5	107.4	108.3	108.3	108.0	108.4
Capital goods									
EU-15	100.0	102.0	106.1	106.5	108.1	108.6	107.7	108.9	110.4
Japan	100.0	109.1	115.0	115.1	115.3	110.5	109.9	114.2	111.4
USA	100.0	105.2	113.2	114.8	115.4	116.7	117.1	117.1	117.3
Consumer durables									
EU-15	100.0	100.2	102.0	102.0	102.7	103.7	101.6	102.9	106.0
Japan	100.0	97.9	100.7	99.6	101.6	91.0	96.1	100.4	95.3
USA	100.0	106.2	114.8	116.5	117.4	119.1	119.8	120.1	120.2
Consumer non-durables									
EU-15	100.0	99.0	100.7	101.0	101.3	100.7	101.4	101.0	100.7
Japan	100.0	99.6	99.6	100.5	102.5	95.6	98.5	99.7	96.3
USA	100.0	100.6	103.5	103.6	104.4	104.9	105.2	105.6	105.4

Source: eurostat

Production index (trend cycle)

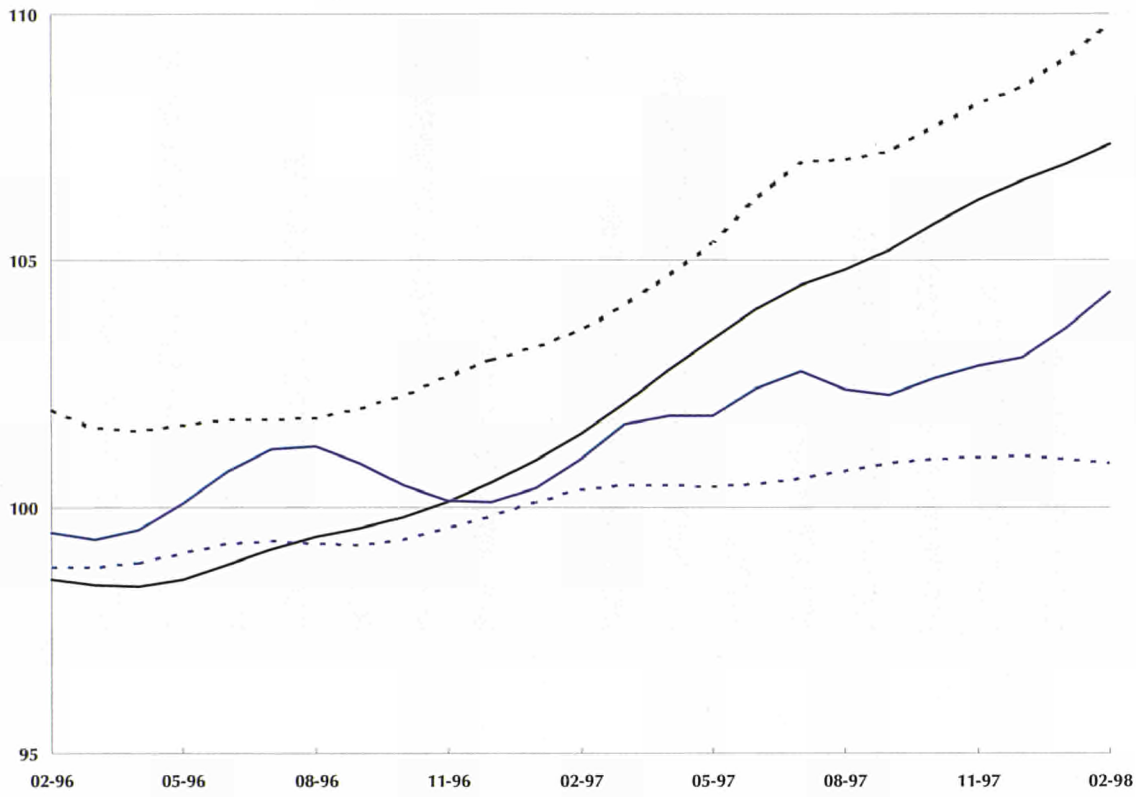


Figure 2.2

EU-15 industrial production for the main industrial groupings: indices (1995 = 100)

Intermediate goods
Capital goods
Consumer durables
Consumer non-durables

Source: eurostat

Table 2.4

Industrial production for the main industrial groupings: growth rate, three months compared to the previous three months (%)

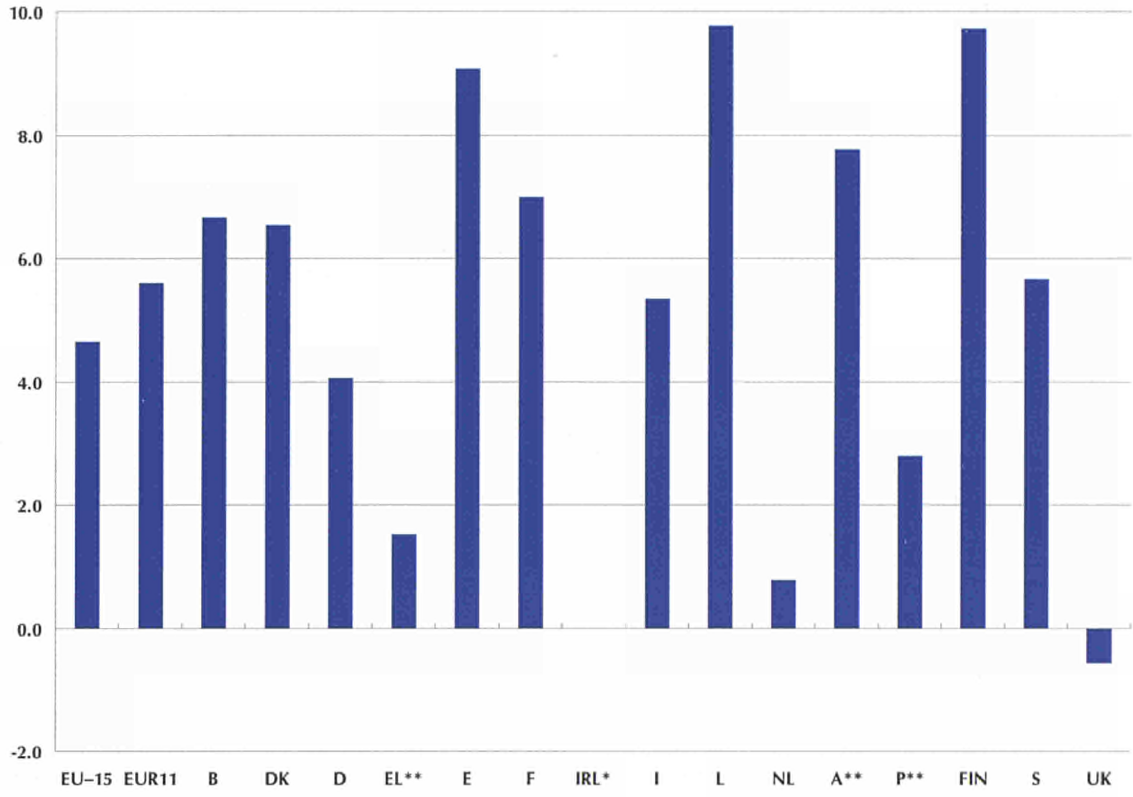
	Latest 3 months available			Total industry	Intermediate goods	Capital goods	Consumer durables	Consumer non-durables
EU-15	12-97	⇨	02-98	0.9	1.2	1.3	1.1	0.0
B	12-97	⇨	02-98	1.2	2.0	0.6	0.3	0.9
DK	12-97	⇨	02-98	1.6	1.4	0.3	3.5	1.6
D	12-97	⇨	02-98	1.2	1.7	1.4	1.9	0.2
EL	11-97	⇨	01-98	0.3	-0.9	1.3	-0.1	0.5
E	12-97	⇨	02-98	1.6	0.5	3.3	3.5	1.4
F	12-97	⇨	02-98	1.5	1.9	2.4	2.7	0.1
IRL	08-97	⇨	10-97	4.4	6.1	5.2	:	1.3
I	12-97	⇨	02-98	0.4	0.8	0.4	-1.1	-0.2
L	12-97	⇨	02-98	1.7	2.3	2.5	-2.7	1.2
NL	12-97	⇨	02-98	0.1	-1.0	1.2	1.9	0.7
A	11-97	⇨	01-98	2.6	:	6.0	4.7	0.2
P	11-97	⇨	01-98	0.3	0.1	0.9	3.4	-1.0
FIN	12-97	⇨	02-98	2.6	2.4	4.0	3.0	1.0
S	12-97	⇨	02-98	1.6	1.3	0.5	1.8	0.1
UK	12-97	⇨	02-98	-0.2	0.1	0.8	-0.5	0.4
Japan	12-97	⇨	02-98	-1.6	-2.1	-1.5	-1.3	-0.8
USA	12-97	⇨	02-98	1.2	0.8	1.4	2.0	1.0

Source: eurostat

Production index (working day adjusted)

Figure 2.3

Industrial production for total industry: growth rate, three months compared to the same three months of the previous year, 12-97 to 02-98 (%)



Source: eurostat

Table 2.5

Industrial production for the main industrial groupings: growth rate, three months compared to the same three months of the previous year (%)

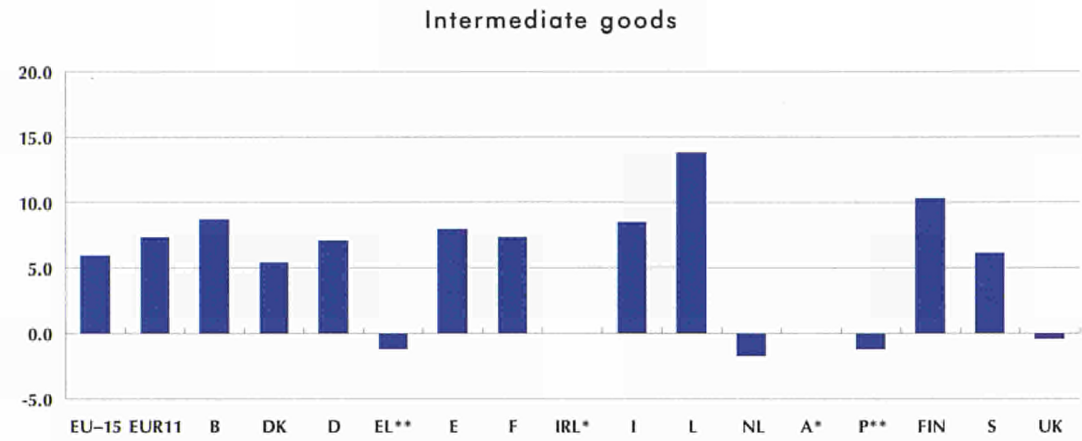
	Latest 3 months available			Total industry	Intermediate goods	Capital goods	Consumer durables	Consumer non-durables
EU-15	12-97	⇨	02-98	4.6	5.9	5.4	3.8	1.2
B	12-97	⇨	02-98	6.6	8.7	1.5	7.4	5.9
DK	12-97	⇨	02-98	6.5	5.4	3.8	14.5	7.9
D	12-97	⇨	02-98	4.1	7.1	4.5	2.1	-0.1
EL	11-97	⇨	01-98	1.2	-0.3	4.9	-0.9	3.5
E	12-97	⇨	02-98	9.1	8.0	13.1	16.2	6.1
F	12-97	⇨	02-98	7.0	7.4	10.7	10.3	1.9
IRL	08-97	⇨	10-97	20.8	35.8	23.4	:	4.9
I	12-97	⇨	02-98	5.3	8.5	-0.1	-3.6	1.7
L	12-97	⇨	02-98	9.8	13.8	9.1	-1.6	7.2
NL	12-97	⇨	02-98	0.8	-1.7	4.2	8.9	3.3
A	11-97	⇨	01-98	8.5	:	16.7	5.9	2.3
P	11-97	⇨	01-98	4.2	6.4	3.4	10.5	-3.9
FIN	12-97	⇨	02-98	9.7	10.3	17.0	13.0	3.2
S	12-97	⇨	02-98	5.7	6.2	7.2	8.1	-0.1
UK	12-97	⇨	02-98	-0.6	-0.5	1.9	0.0	-2.9
Japan	12-97	⇨	02-98	-2.6	-1.0	-3.9	-5.8	-3.8
USA	12-97	⇨	02-98	5.4	3.4	8.2	9.1	2.6

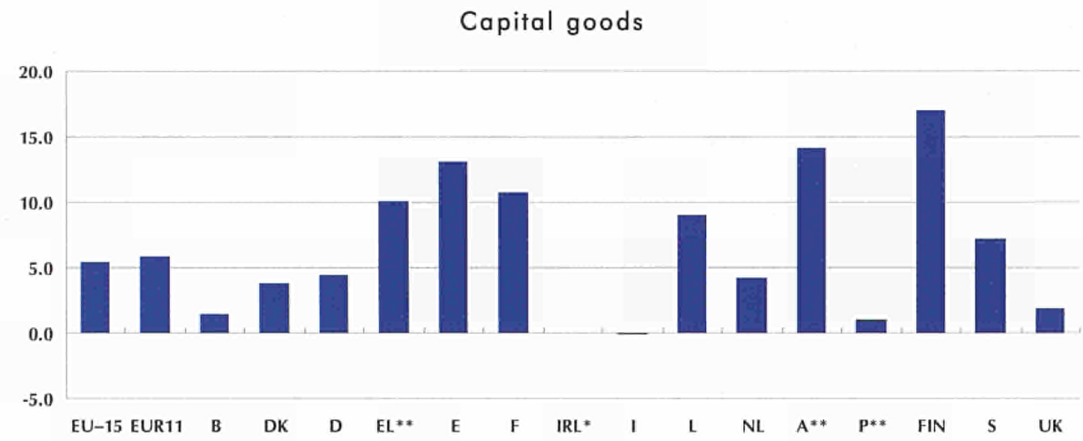
Source: eurostat

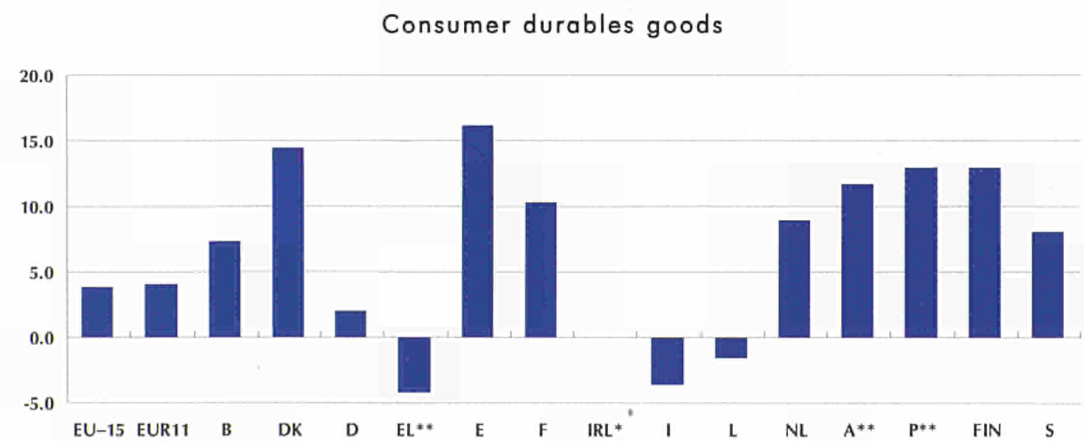
Production index (working day adjusted)

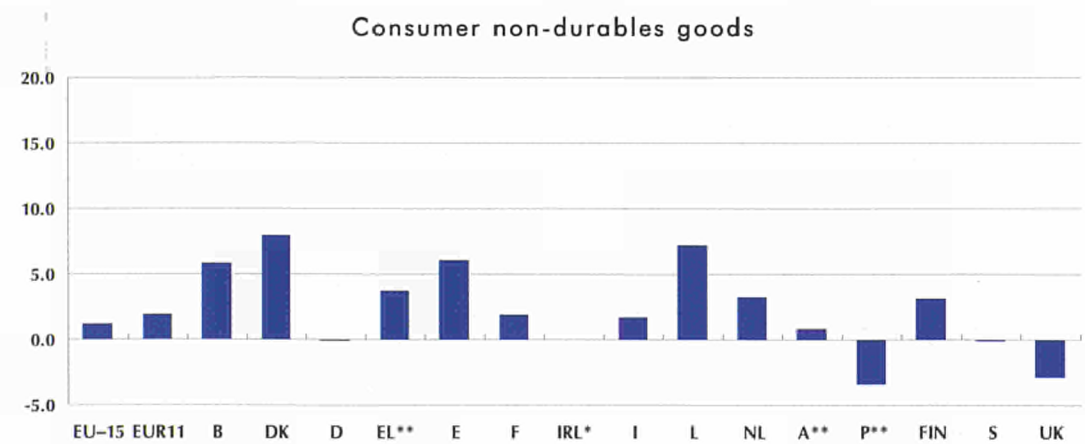
Figure 2.4

Industrial production for the main industrial groupings: growth rate, three months compared to the same three months of the previous year, 12-97 to 02-98 (%)





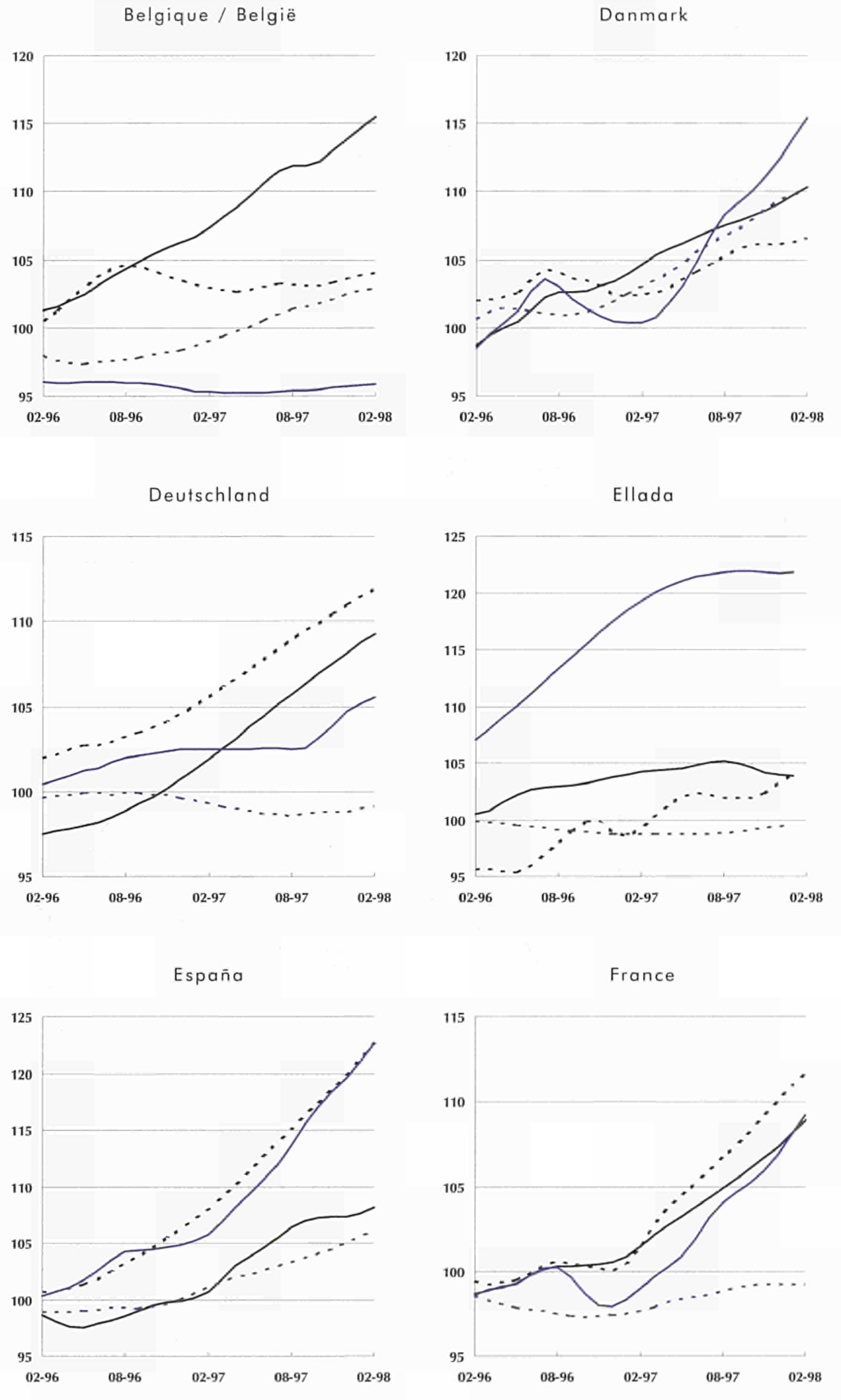




Source: eurostat

Figure 2.5

Industrial production for the main industrial groupings: indices (1995 = 100)

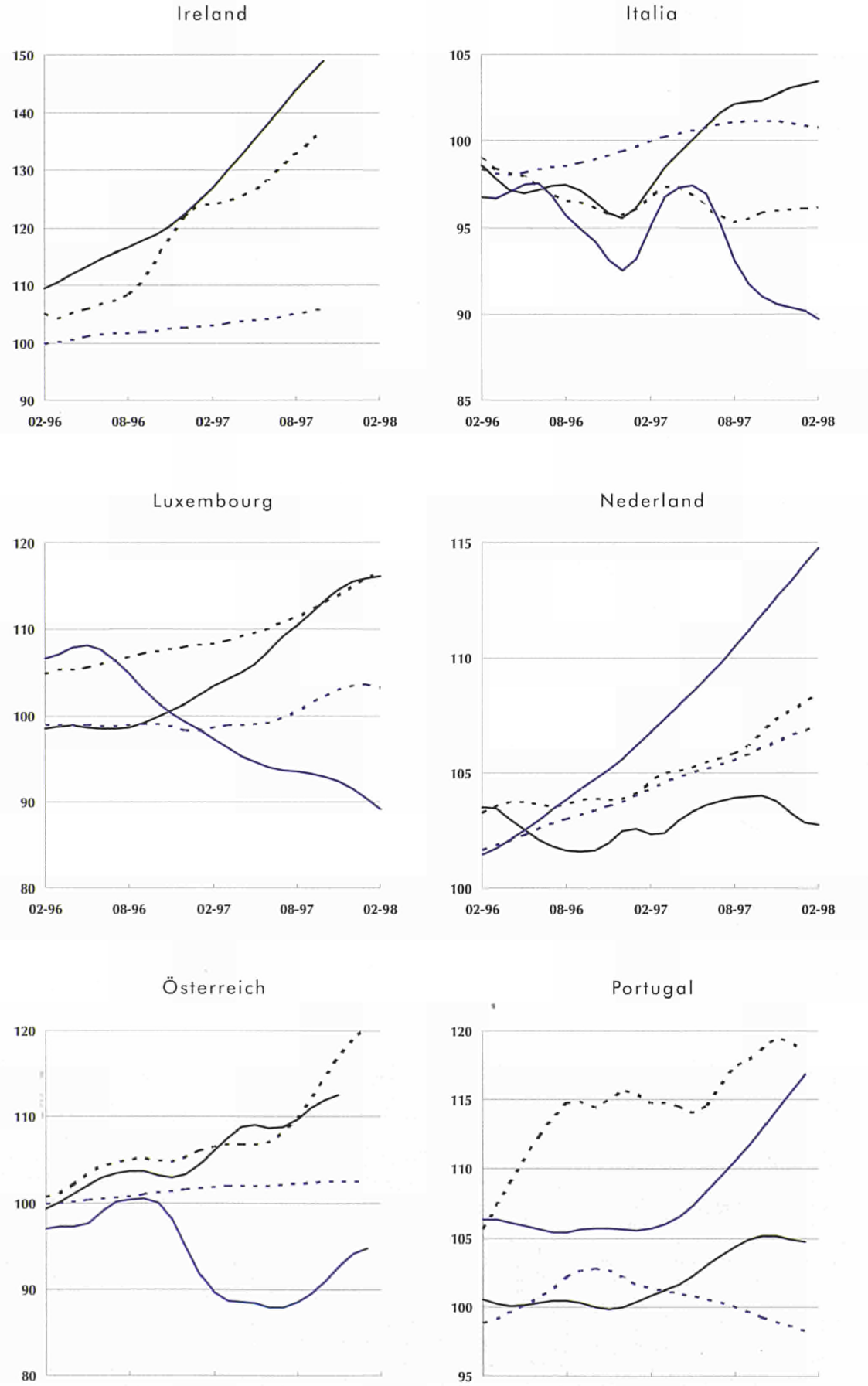


Source: eurostat

Production index (trend cycle)

Figure 2.5

Industrial production for the main industrial groupings: indices (1995 = 100)

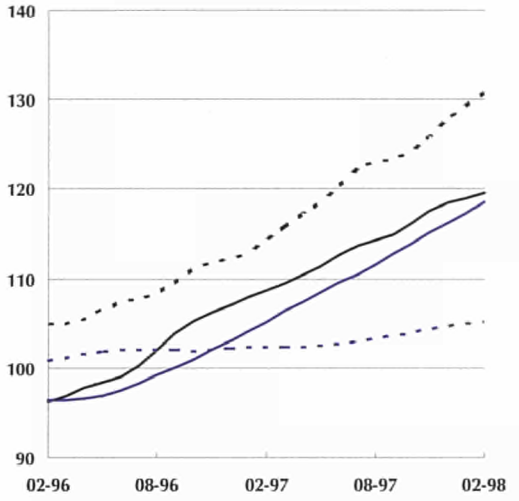


Source: eurostat

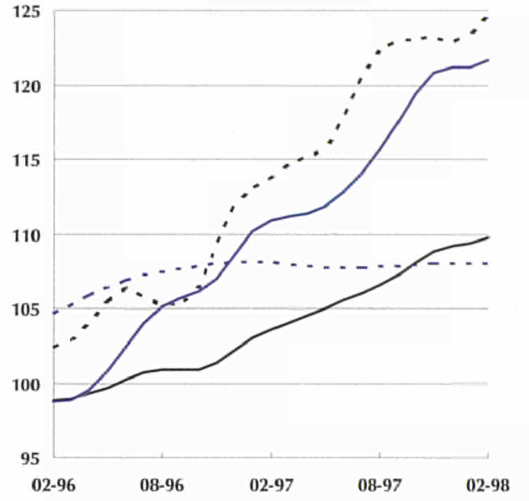
Figure 2.5

Industrial production for the main industrial groupings: indices (1995 = 100)

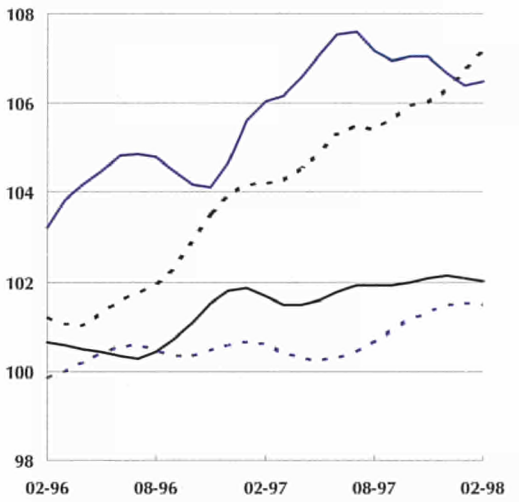
Suomi / Finland



Sverige



United Kingdom



Intermediate goods ——

Capital goods - - - - -

Consumer durables ——

Consumer non-durables - - - - -

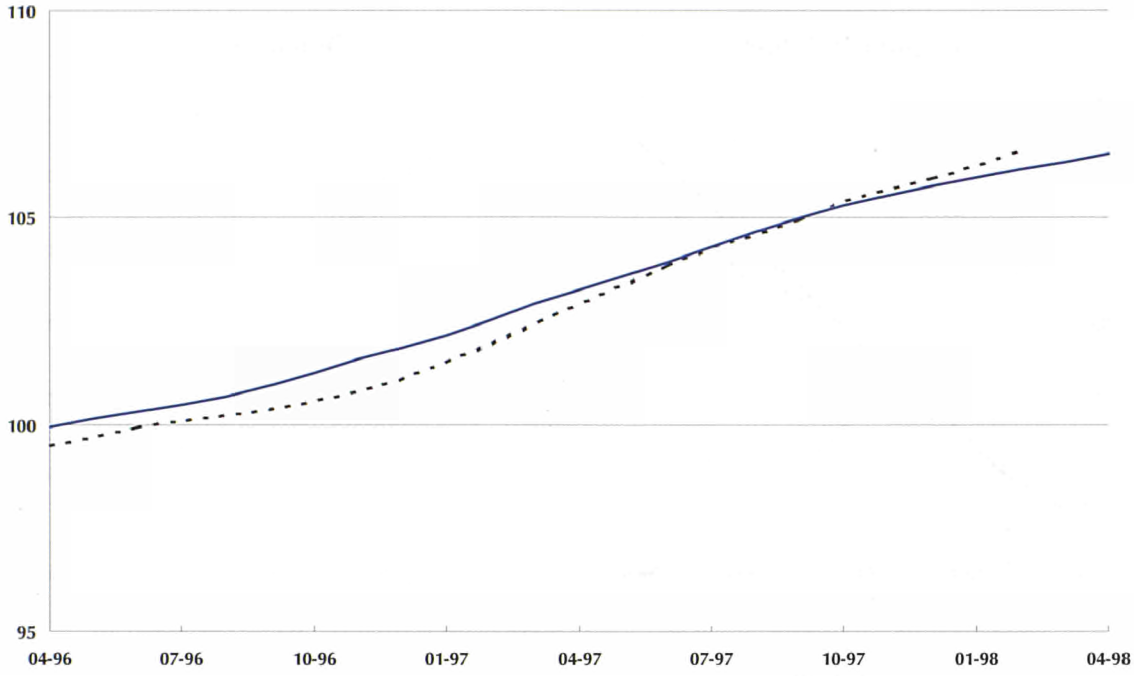
Further information - the production index:

The index of production aims to measure changes in volume (at constant prices) of gross value added created by a given activity, the activity indices being aggregated (like the aggregation at Community level) by means of a system of weighting according to gross value added at factor cost. Since the monthly evolution of value added can not be measured, as an approximation, product output or deflated turnover is used.
The indices of production are adjusted in two stages. Firstly, account is taken of the variation in the number of working days in the month. The national Statistical Offices provide Eurostat with these series (except Denmark, France and Spain). Secondly, for EU-15 and most of the Member States a correction is made using seasonal adjustment with TRAMO / SEATS, a method developed by Professor Maravall and V. Gomez. For France, Finland, Sweden and the United Kingdom, the indices are adjusted by the national statistical offices themselves. For Germany, the trend and seasonally adjusted figures are calculated by the German NSO.
Full methodological notes may be found on page 73.

Source: eurostat

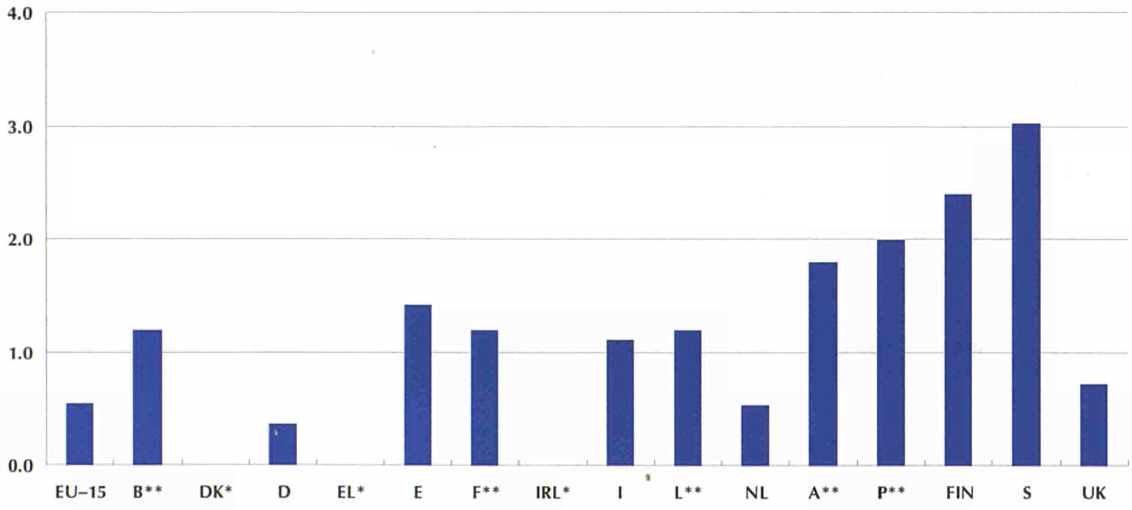
Production index (expected output index)

Figure 2.6



EU-15 expected output index for total industry: indices (1995 = 100)

Expected output index for total industry, three months compared to the previous three months, 02-98 to 04-98 (%)



Source: eurostat

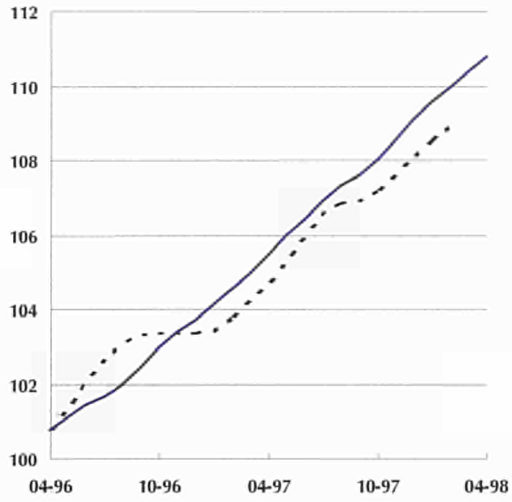
Further information - expected output index:

The Expected Output Index (EOI) links several aspects of information from qualitative business opinion surveys (questions on order books and questions on production expectations) with the index of industrial production. As the data from the business opinion surveys are available earlier and lead the evolution of industrial production, they can be used to compute a short-term estimate of the production index.
A multiple regression is run, using the growth rate of the industrial production lagged with values of the business opinion survey data. The result of this regression is "integrated" from a growth rate to an evolution, and after that the trend cycle is calculated for a clearer interpretation of the results.
Details of the estimation method can be found in a more thorough article that was published in Special Edition 5/97 of the Monthly Panorama of the European Industry.
Full methodological notes may be found on page 73.

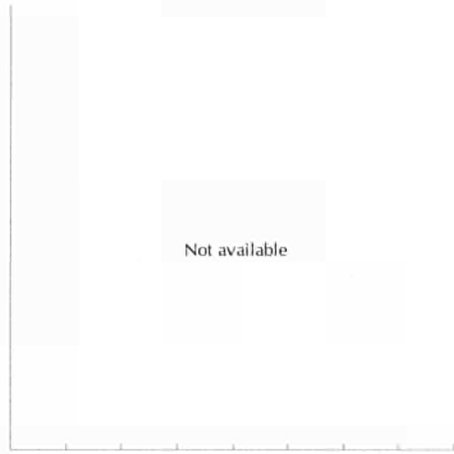
Figure 2.7

Expected output index for total industry: indices (1995 = 100)

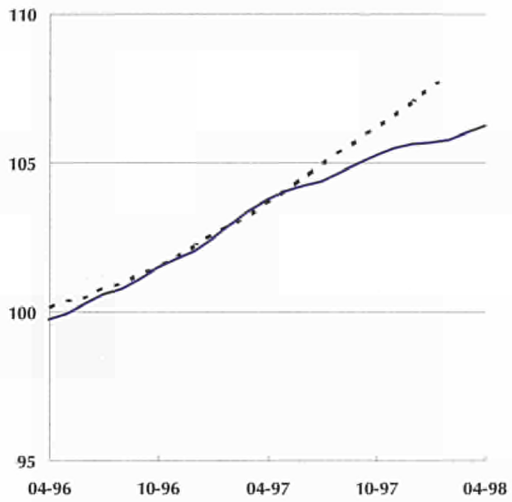
Belgique / België



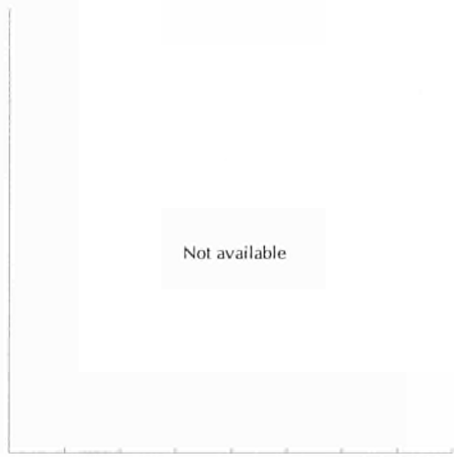
Danmark



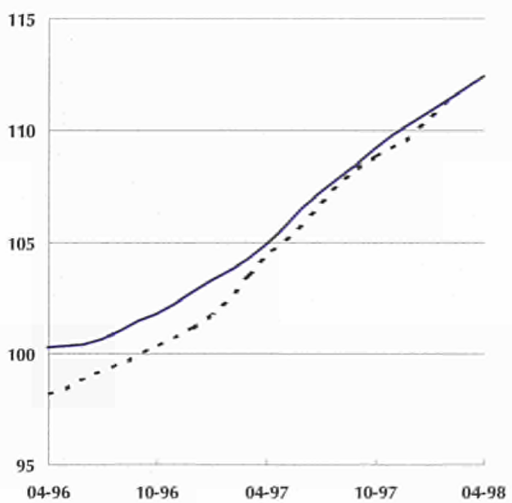
Deutschland



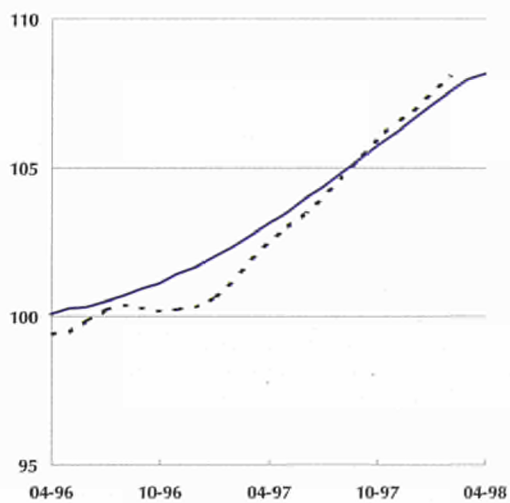
Ellada



España



France



Production index -----

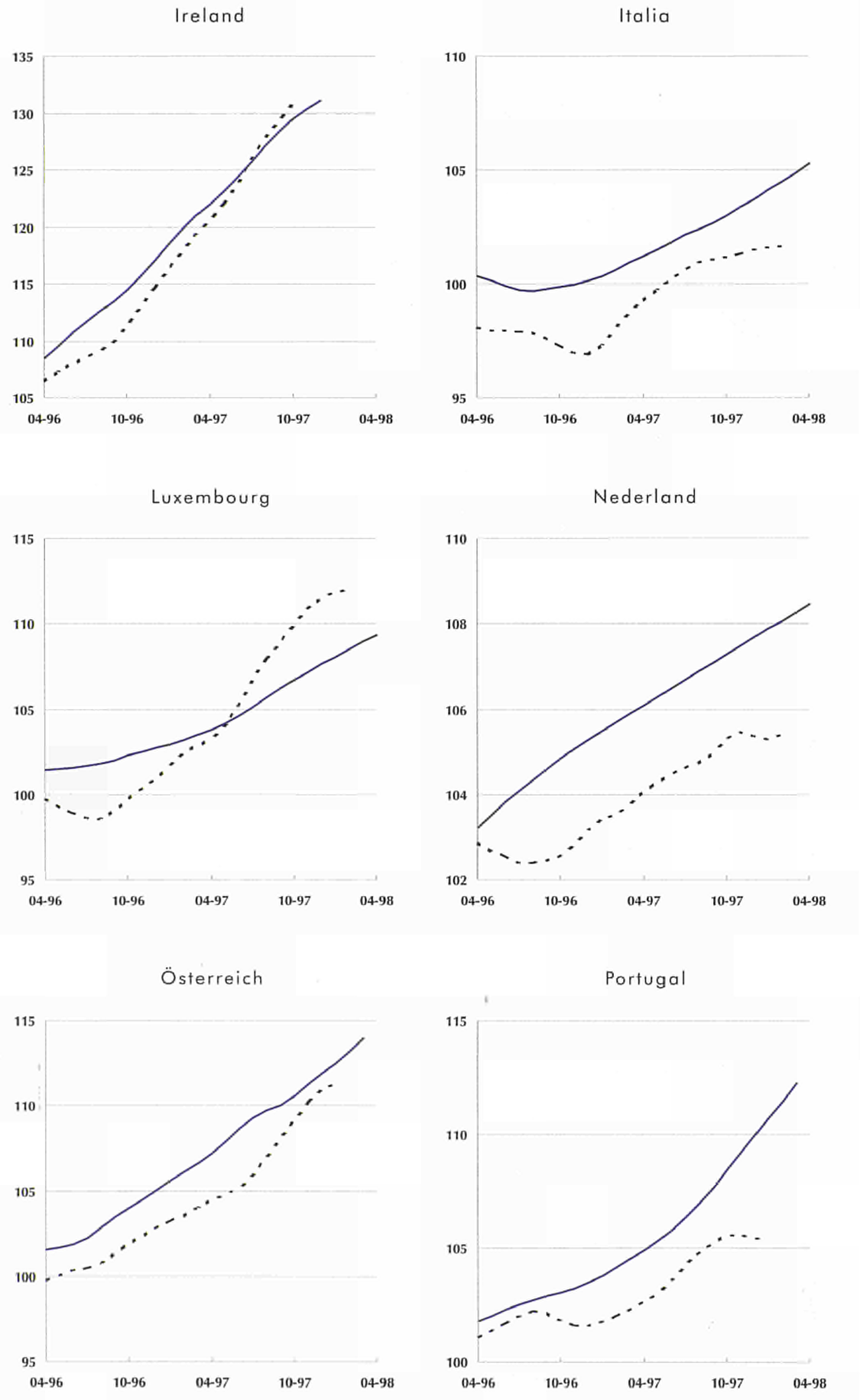
Expected output index ——

Source: eurostat

Production index (expected output index)

Figure 2.7

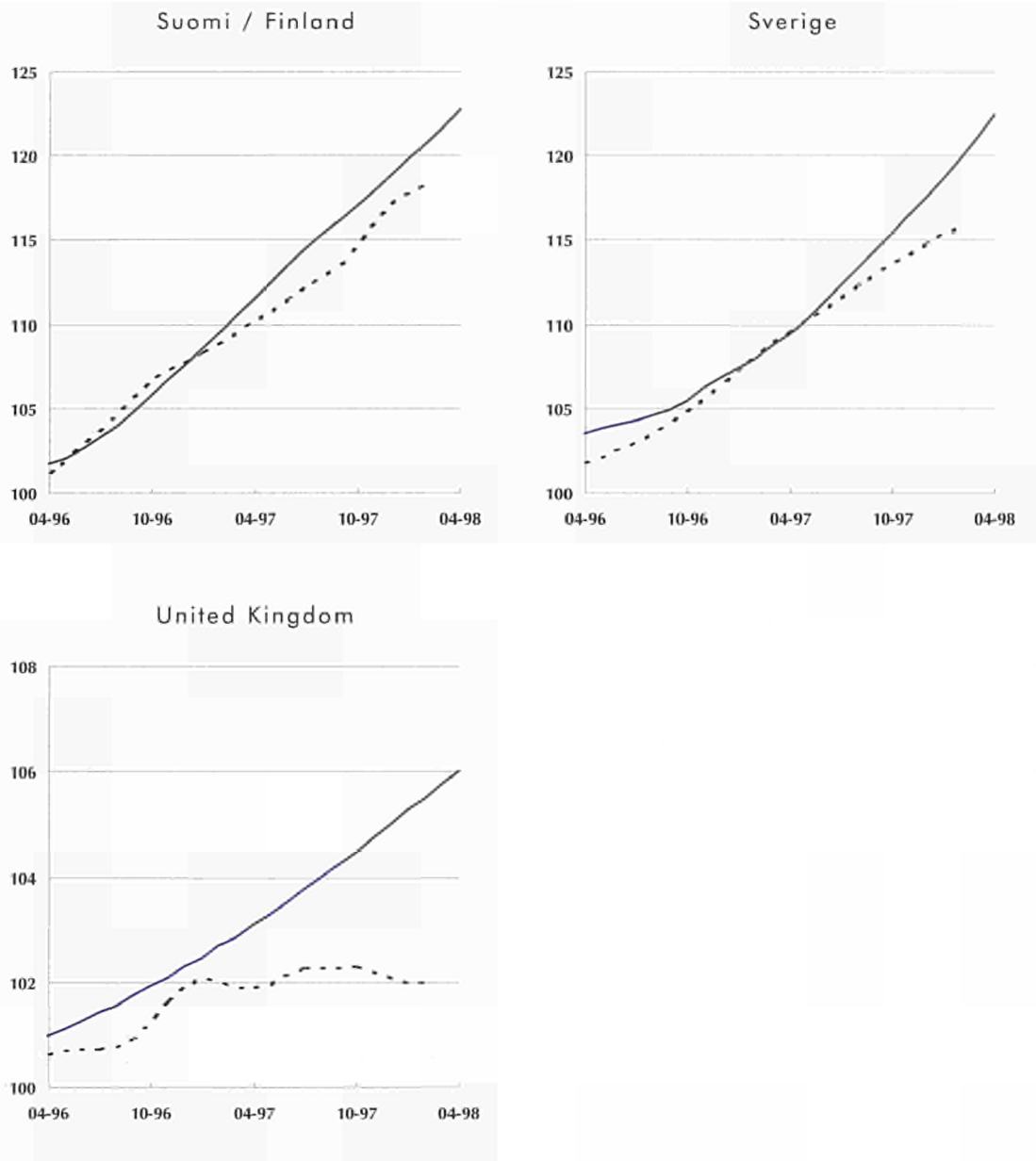
Expected output index for total industry: indices (1995 = 100)



Source: eurostat

Figure 2.7

Expected output index for total industry: indices (1995 = 100)

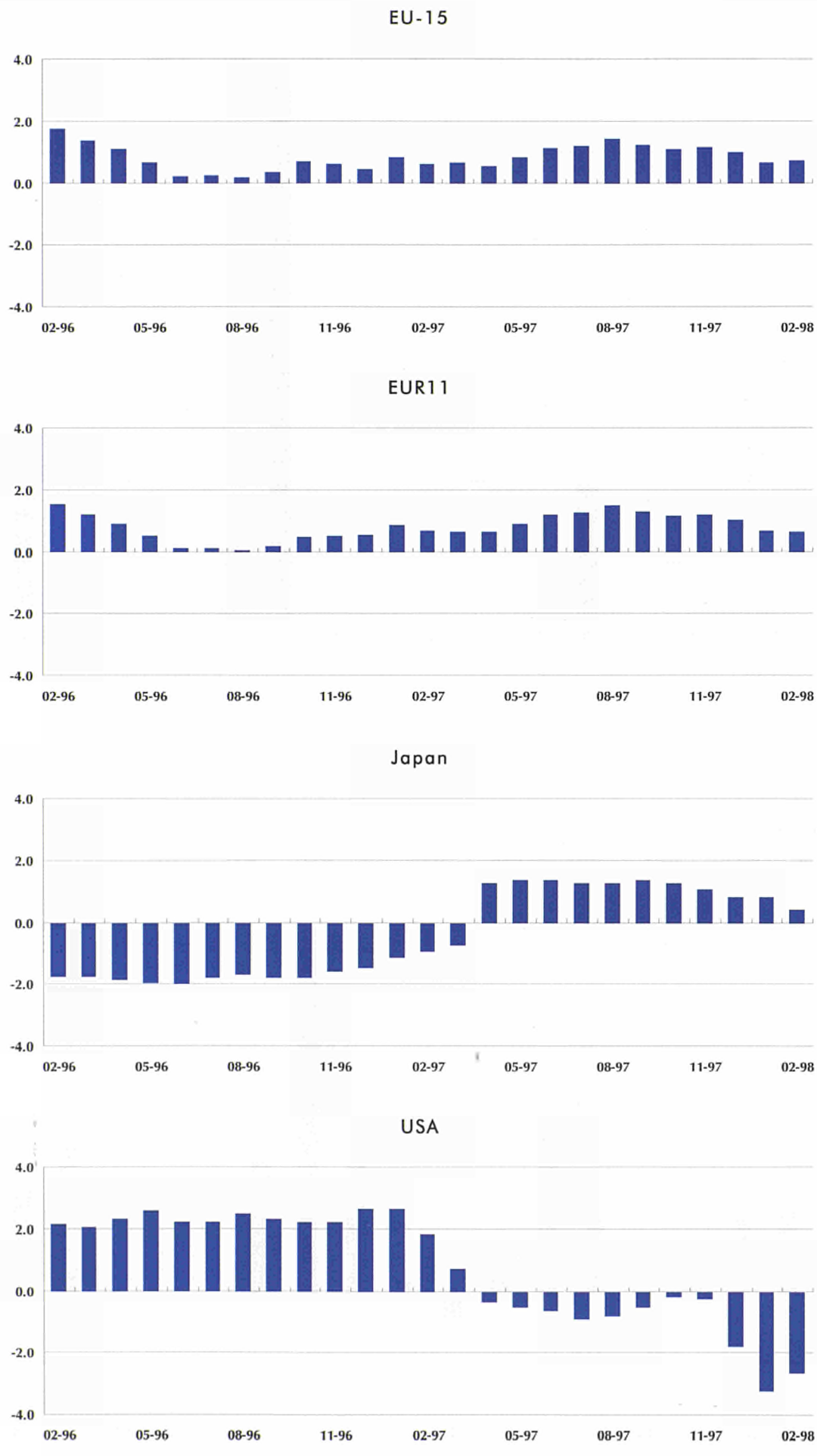


Source: eurostat

Domestic producer price index

Figure 2.8

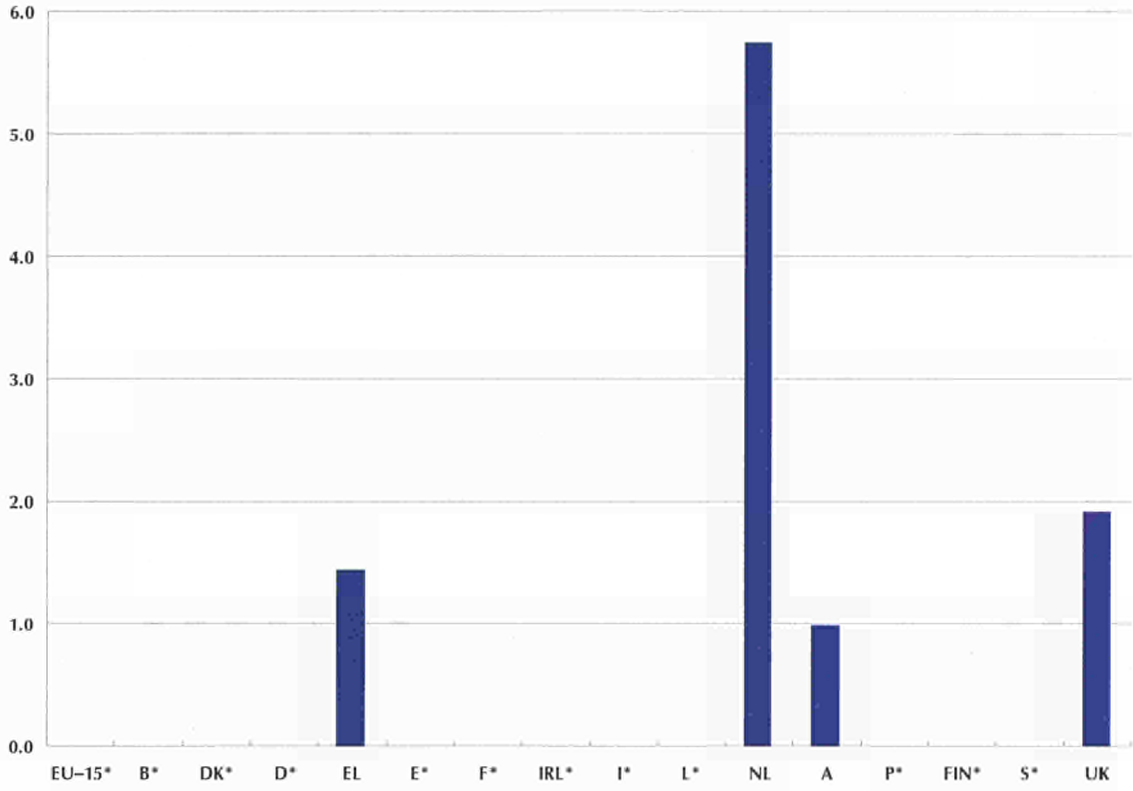
Domestic producer price index: growth rate, year on year (%)



Source: eurostat

Figure 2.9

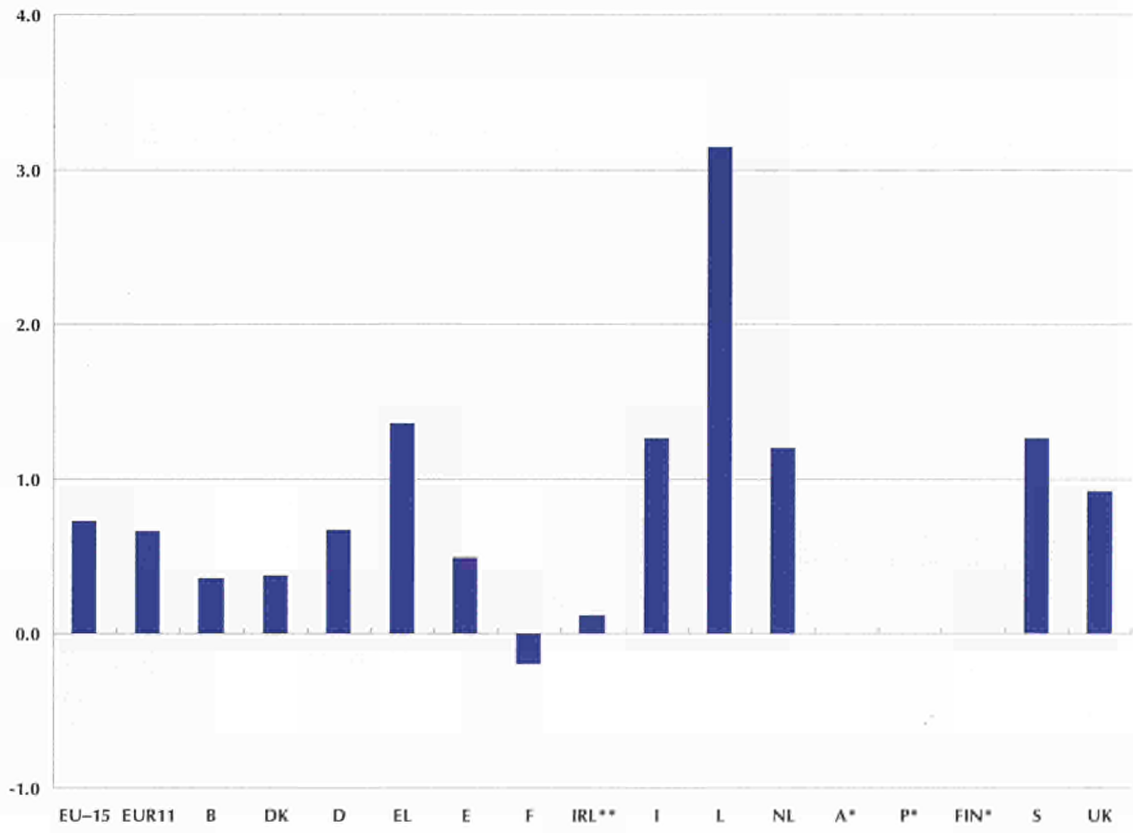
Export prices for manufacturing industry: growth rate, year on year, 02-98 (%)



Source: eurostat

Figure 2.10

Domestic producer price index: growth rate, year on year, 02-98 (%)



Source: eurostat

Domestic producer price index

Table 2.6

Domestic producer price index: indices (1995 = 100)

	1995	1996	1997	09-97	10-97	11-97	12-97	01-98	02-98
EU-15	100.0	100.8	101.8	102.0	102.1	102.3	102.4	102.3	102.2
B	100.0	100.6	102.3	103.5	103.3	103.1	102.4	101.9	101.6
DK	100.0	101.6	103.7	104.6	104.4	104.1	103.2	102.2	102.3
D	100.0	99.6	100.7	101.1	101.0	101.0	100.9	100.8	100.8
EL	100.0	107.4	111.0	111.9	112.6	112.6	112.1	111.8	111.7
E	100.0	101.7	102.7	103.2	103.3	103.4	103.1	102.8	102.6
F	100.0	100.5	100.7	100.8	100.9	101.0	100.8	100.6	100.5
IRL	100.0	101.8	101.9	101.7	101.8	101.8	102.1	101.9	:
I	100.0	101.9	103.2	103.5	103.7	103.9	103.8	103.9	103.9
L	100.0	99.6	101.4	102.6	102.6	102.3	102.3	103.3	103.3
NL	100.0	101.8	104.5	105.1	105.1	105.1	104.7	105.0	104.9
A	:	:	:	:	:	:	:	:	:
P	100.0	103.1	104.7	105.7	105.3	105.0	104.7	:	:
FIN	100.0	99.9	101.3	102.1	102.1	102.1	101.9	:	:
S	100.0	100.6	101.7	102.4	102.4	102.1	102.1	102.1	101.9
UK	100.0	100.8	101.2	100.8	101.1	102.0	103.1	103.1	102.9
Japan	100.0	98.2	98.9	99.2	99.0	98.8	98.7	98.7	98.4
USA	100.0	102.4	102.3	102.2	102.5	102.5	101.6	100.6	100.3

Source: eurostat

Domestic producer price index in ECU terms

Table 2.7

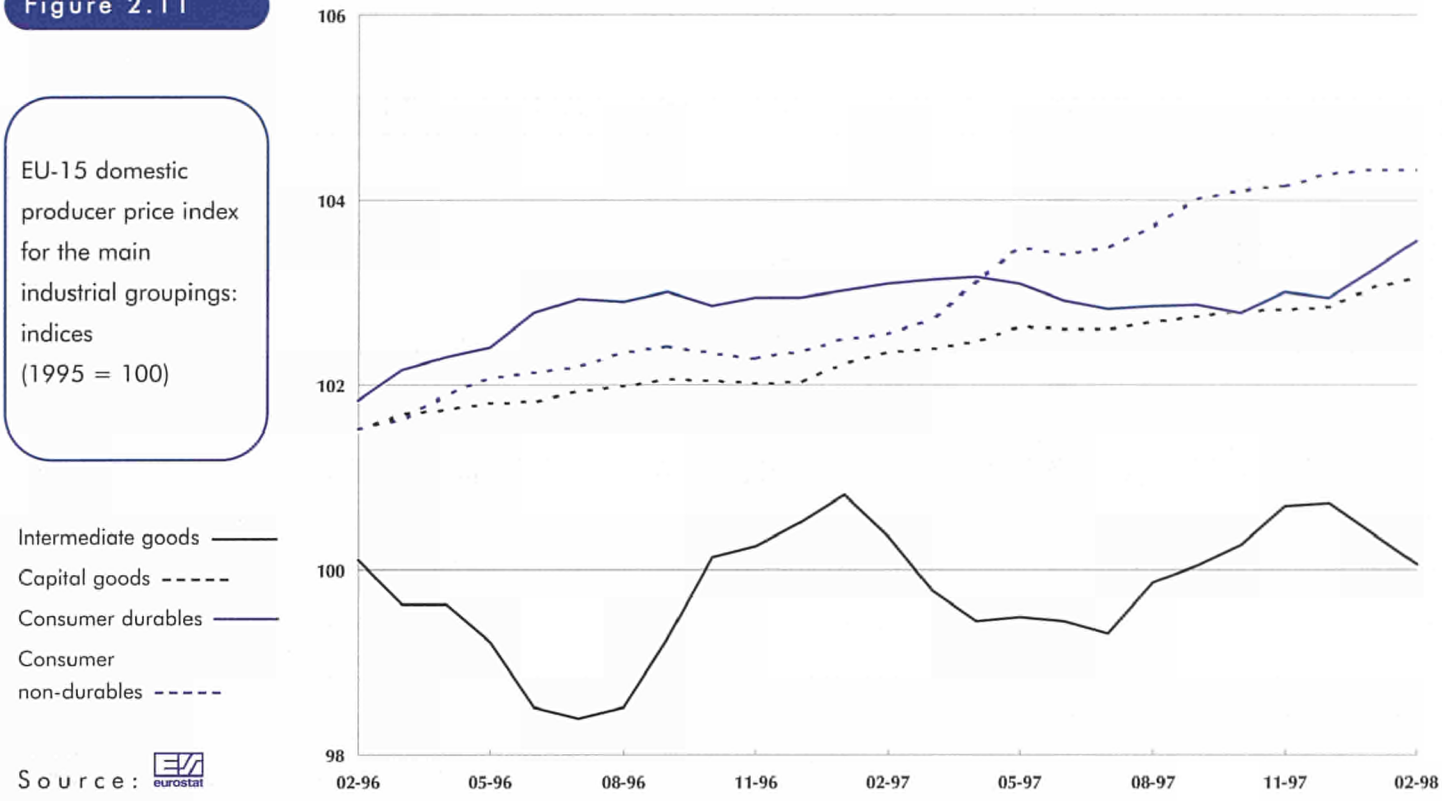
Domestic producer price index in ECU terms: indices (1995 = 100)

	1995	1996	1997	09-97	10-97	11-97	12-97	01-98	02-98
EU-15	100.0	102.2	104.9	105.3	105.3	105.6	105.7	105.6	105.5
B	100.0	98.7	97.3	98.2	98.1	97.6	96.8	96.4	96.1
DK	100.0	101.1	101.5	102.3	102.1	101.6	100.4	99.5	99.6
D	100.0	97.7	96.0	96.2	96.2	95.9	95.7	95.6	95.6
EL	100.0	106.6	108.8	109.3	110.1	110.2	109.2	108.4	108.4
E	100.0	103.1	100.9	101.3	101.4	101.1	100.6	100.0	99.9
F	100.0	100.9	99.4	99.4	99.7	99.7	99.4	99.2	99.0
IRL	100.0	104.7	111.2	111.6	108.9	109.6	109.1	105.7	:
I	100.0	110.8	113.9	114.7	114.5	114.4	114.1	113.7	113.5
L	100.0	97.7	96.5	97.3	97.4	96.9	96.7	97.7	97.7
NL	100.0	99.9	99.2	99.6	99.5	99.1	98.6	98.9	98.8
A	:	:	:	:	:	:	:	:	:
P	100.0	103.3	103.4	103.7	103.0	102.2	101.7	:	:
FIN	100.0	97.9	98.3	99.0	98.9	98.0	97.4	:	:
S	100.0	110.1	109.5	112.6	112.5	110.3	109.9	109.1	107.9
UK	100.0	102.8	121.2	121.5	122.0	125.2	127.7	128.5	128.4
Japan	100.0	87.1	88.5	91.4	89.4	84.8	83.9	85.8	88.0
USA	100.0	105.5	118.0	121.5	119.6	117.6	119.5	120.9	120.5

Source: eurostat

Figure 2.11

EU-15 domestic producer price index for the main industrial groupings: indices (1995 = 100)



Source: eurostat

Table 2.8

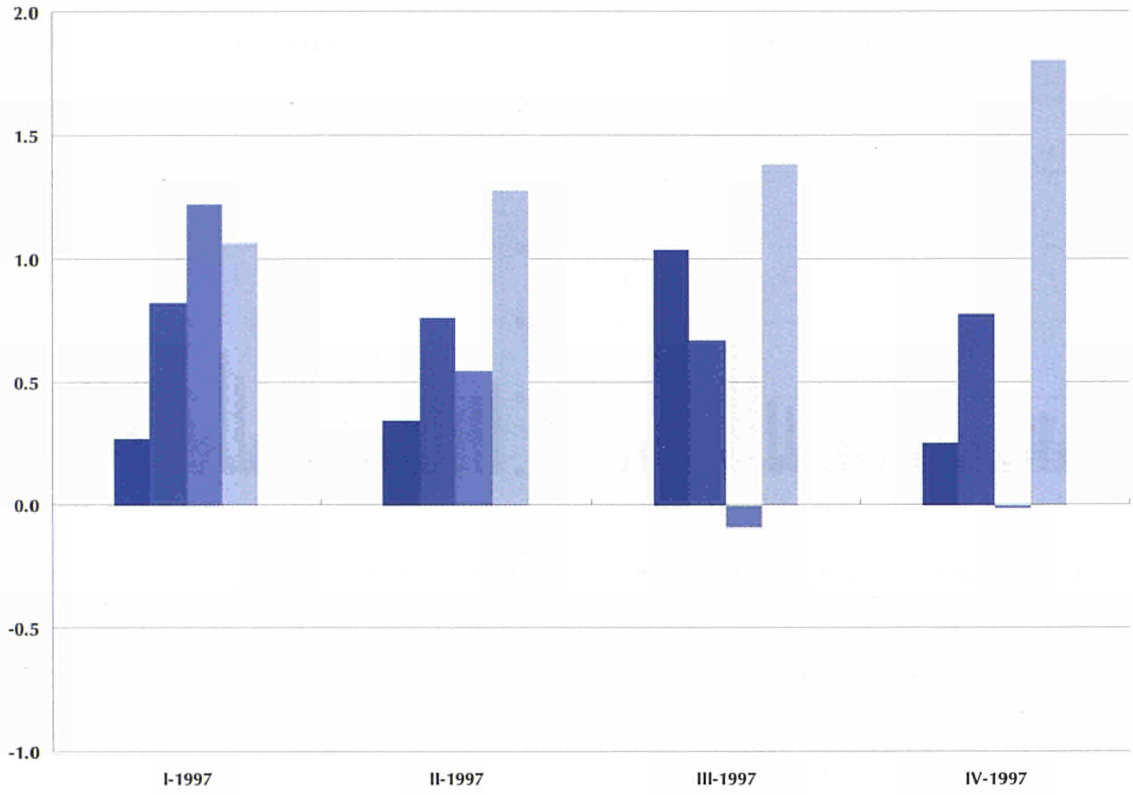
Domestic producer price index for the main industrial groupings: indices (1995 = 100)

	1995	1996	1997	09-97	10-97	11-97	12-97	01-98	02-98
Total industry									
EU–15	100.0	100.8	101.8	102.0	102.1	102.3	102.4	102.3	102.2
Japan	100.0	98.2	98.9	99.2	99.0	98.8	98.7	98.7	98.4
USA	100.0	102.4	102.3	102.2	102.5	102.5	101.6	100.6	100.3
Intermediate goods									
EU–15	100.0	99.5	100.0	100.0	100.3	100.7	100.7	100.4	100.1
Japan	:	:	:	:	:	:	:	:	:
USA	:	:	:	:	:	:	:	:	:
Capital goods									
EU–15	100.0	101.8	102.6	102.7	102.8	102.8	102.8	103.1	103.2
Japan	:	:	:	:	:	:	:	:	:
USA	:	:	:	:	:	:	:	:	:
Consumer durables									
EU–15	100.0	102.5	103.0	102.9	102.8	103.0	102.9	103.2	103.6
Japan	:	:	:	:	:	:	:	:	:
USA	:	:	:	:	:	:	:	:	:
Consumer non-durables									
EU–15	100.0	102.0	103.4	104.0	104.1	104.1	104.3	104.3	104.3
Japan	:	:	:	:	:	:	:	:	:
USA	:	:	:	:	:	:	:	:	:

Source: eurostat

Domestic producer price index

Figure 2.12



EU-15 domestic producer price index for the main industrial groupings: growth rate, year on year (%)

Intermediate goods
Capital goods
Consumer durables
Consumer non-durables

Source: eurostat

Table 2.9

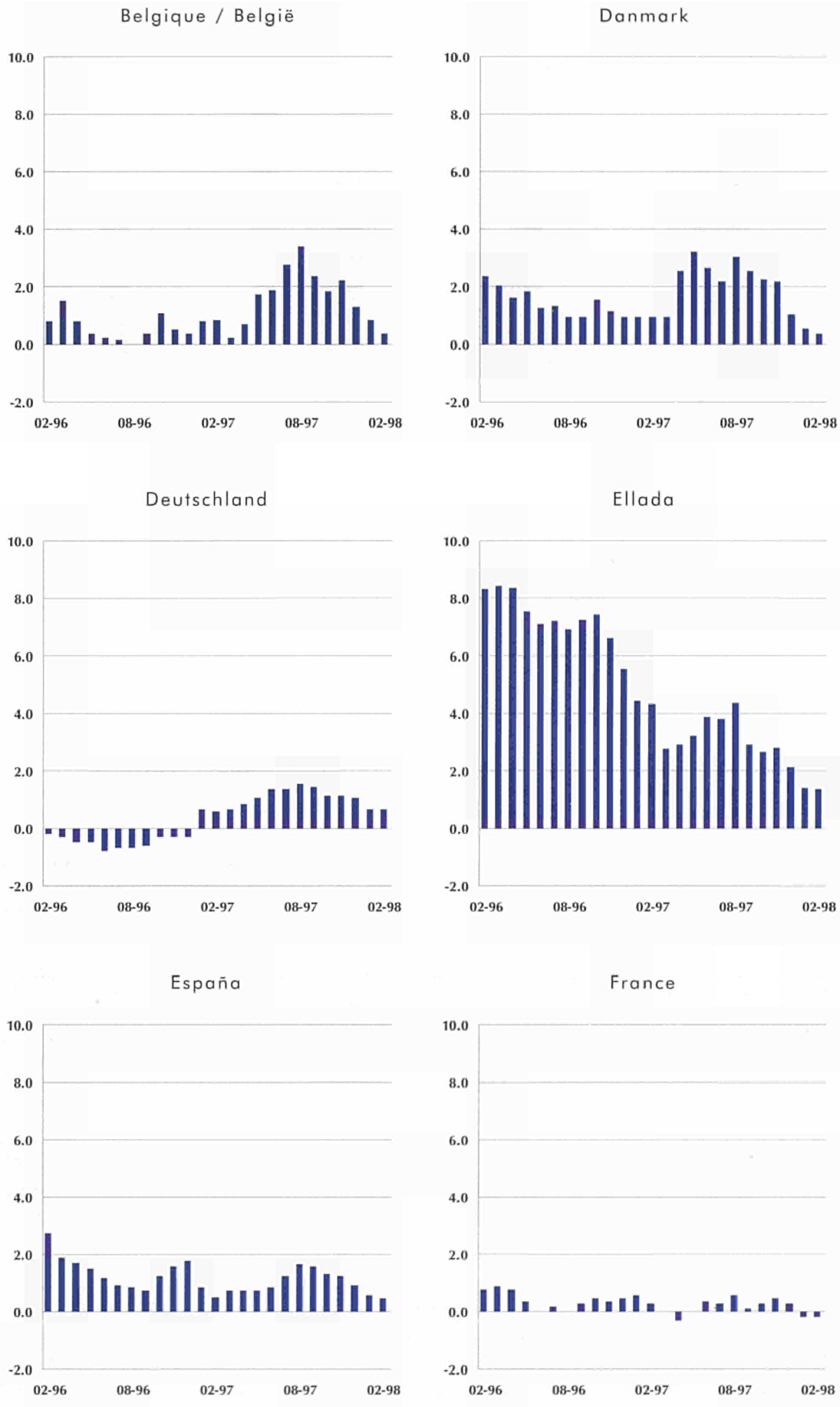
	Latest month available	Total industry	Intermediate goods	Capital goods	Consumer durables	Consumer non-durables
EU-15	02-98	0.7	-0.3	0.8	0.5	1.7
B	02-98	0.4	-0.6	0.1	:	4.1
DK	02-98	0.4	0.0	1.7	1.7	0.2
D	02-98	0.7	0.3	0.6	0.2	1.4
EL	02-98	1.4	0.0	6.7	4.2	2.0
E	02-98	0.5	0.1	1.0	0.1	1.3
F	02-98	-0.2	-1.4	-1.7	-0.5	1.4
IRL	01-98	0.0	:	:	:	0.5
I	02-98	1.3	0.5	1.9	1.0	2.0
L	02-98	3.2	7.6	0.8	-3.3	1.5
NL	02-98	1.2	0.3	1.6	1.4	3.6
A		:	:	:	:	:
P	12-97	0.5	-0.1	:	:	1.7
FIN	12-97	1.8	1.8	1.1	1.6	2.2
S	02-98	1.3	0.3	2.0	1.7	1.9
UK	02-98	0.9	-1.6	0.8	1.0	1.6
Japan	02-98	0.4	:	:	:	:
USA	02-98	-2.6	:	:	:	:

Domestic producer price index for the main industrial groupings: growth rate, year on year (%)

Source: eurostat

Figure 2.13

Domestic producer price index: growth rate, year on year (%)

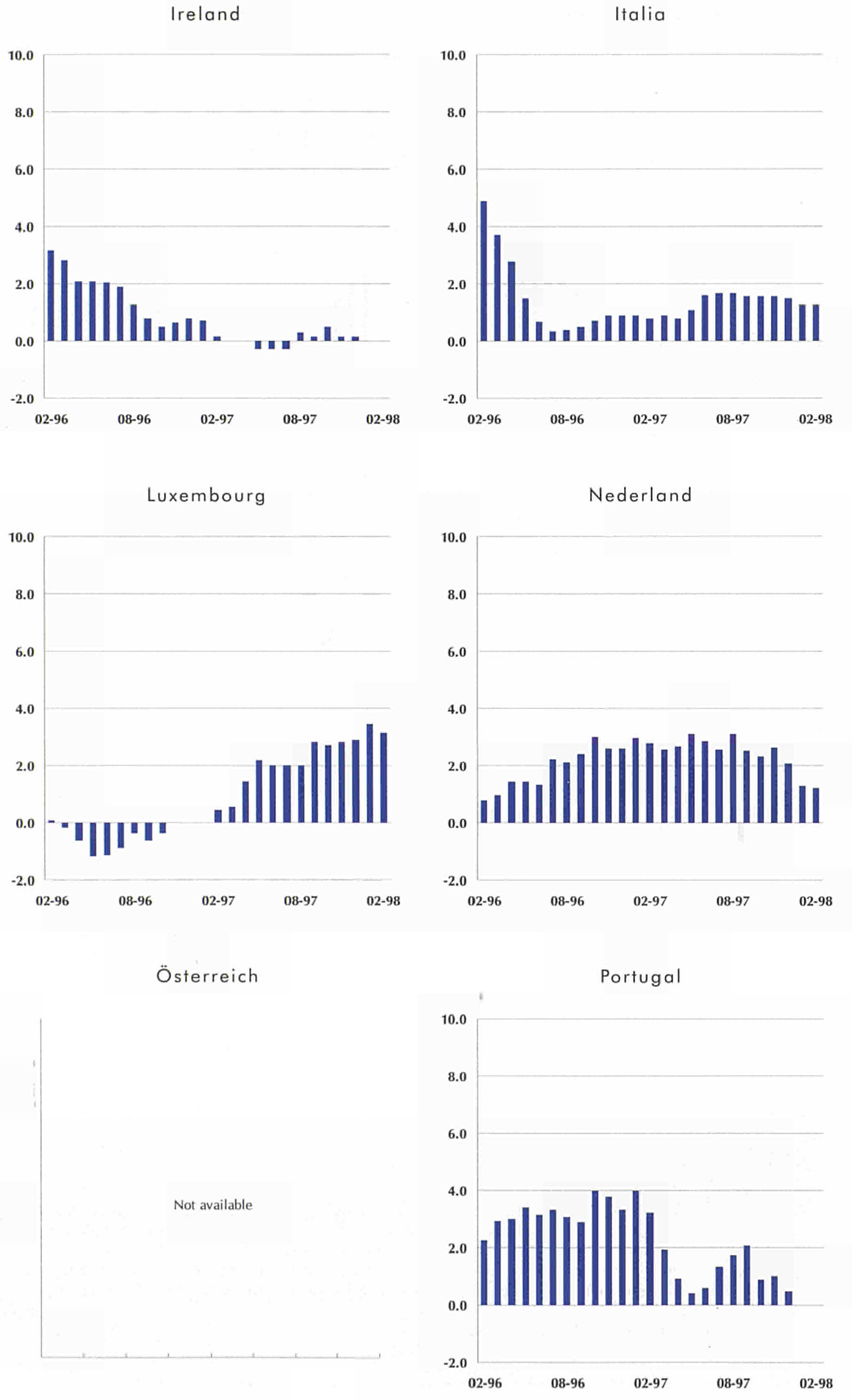


Source: eurostat

eurostat

Domestic producer price index

Figure 2.13

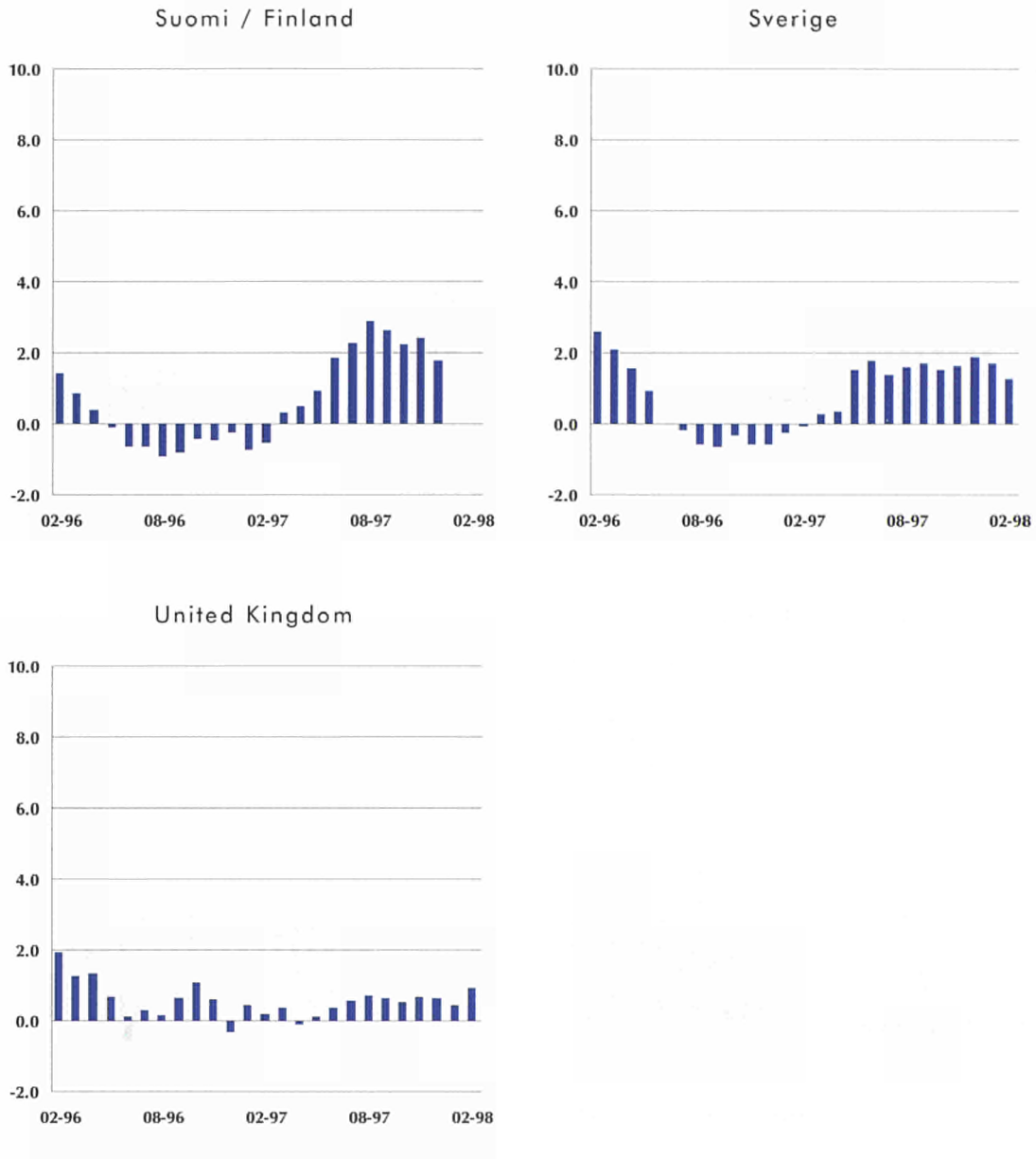


Domestic producer price index: growth rate, year on year (%)

Source: eurostat

Figure 2.13

Domestic producer price index: growth rate, year on year (%)



Further information - price indices:

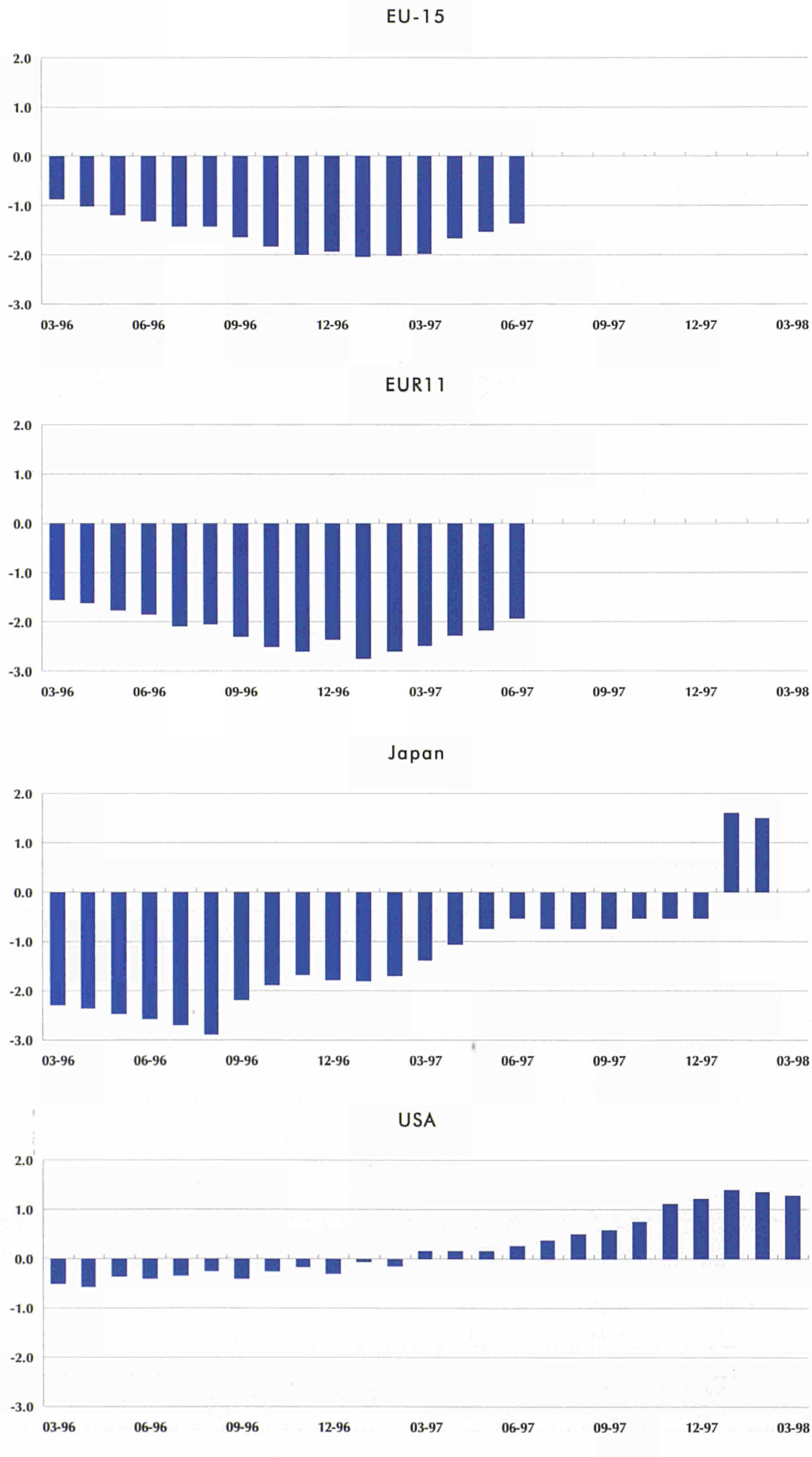
The index of domestic producer prices shows (in the national currency of the Member State in question) changes in the ex-works selling prices of all products sold on the domestic market. Since we deal with producer prices, imports are not included in these price indices. The Community indices (EU-14, since there are no producer price indices for Austria yet) refer to overall weighted price changes. Producer price indices are not seasonally adjusted. The system used for the collection of export price indices is a duplicate of the model for domestic producer price indices.
Full methodological notes may be found on page 73.

Source: eurostat

Employment index

Figure 2.14

Employment index: growth rate, year on year (%)

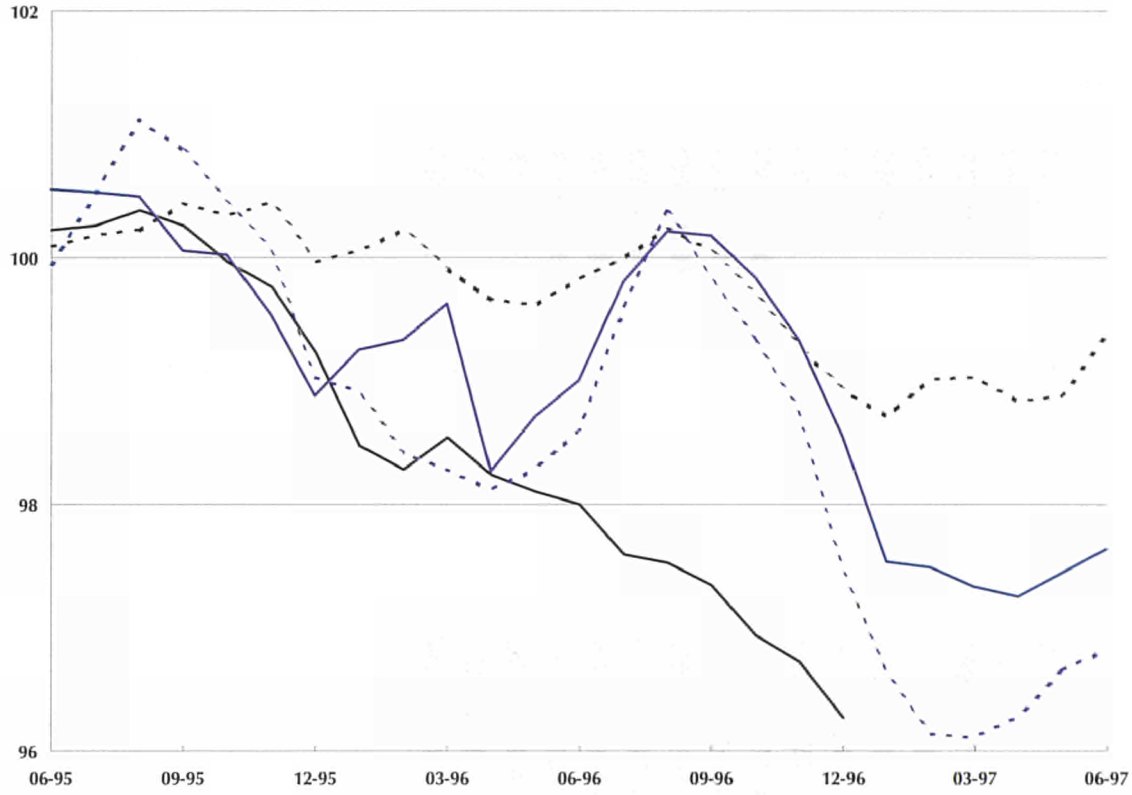


Source: eurostat

Employment index (trend cycle)

Figure 2.15

EU-15 employment index for the main industrial groupings: indices (1995 = 100)



Source: eurostat

Table 2.10

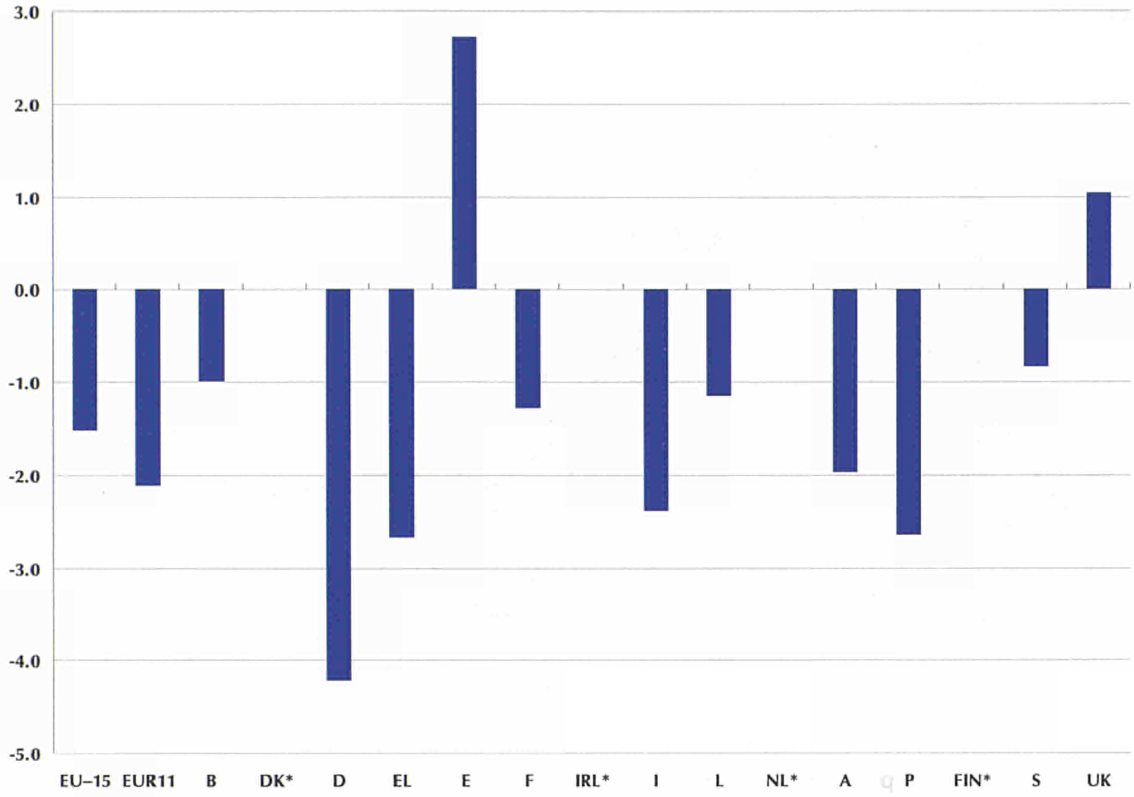
Employment index for the main industrial groupings: growth rate, three months compared to the previous three months (%)

	Latest 3 months available			Total industry	Intermediate goods	Capital goods	Consumer durables	Consumer non-durables
EU-15	04-97	⇨	06-97	-0.1	:	0.0	-0.3	-0.2
B	11-97	⇨	01-98	:	:	:	-1.3	0.4
DK		⇨		:	:	:	:	:
D	10-97	⇨	12-97	-0.3	-0.6	-0.3	-0.7	-0.9
EL	04-97	⇨	06-97	0.0	-0.1	-4.5	0.9	-1.2
E	10-97	⇨	12-97	1.8	4.1	3.0	-1.2	0.3
F	07-97	⇨	09-97	:	:	0.2	-0.8	-0.5
IRL	01-97	⇨	03-97	1.8	1.3	3.4	:	:
I	04-97	⇨	06-97	-0.5	:	0.3	-0.7	-0.7
L	12-97	⇨	02-98	-0.2	-1.1	2.1	0.9	-0.5
NL	07-96	⇨	09-96	-1.7	:	:	:	:
A	11-97	⇨	01-98	-0.4	-0.4	0.3	0.0	-1.7
P	10-97	⇨	12-97	-0.3	0.0	0.1	0.3	-0.4
FIN	04-96	⇨	06-96	0.2	:	:	:	:
S	07-97	⇨	09-97	0.6	:	:	:	:
UK	11-97	⇨	01-98	0.2	-0.8	0.3	0.8	0.1
Japan	12-97	⇨	02-98	0.2	:	:	:	:
USA	01-98	⇨	03-98	0.4	:	:	:	:

Source: eurostat

Employment index

Figure 2.16



Employment index: growth rate, three months compared to the same three months of the previous year, 04-97 to 06-97 (%)

Source: eurostat

Table 2.11

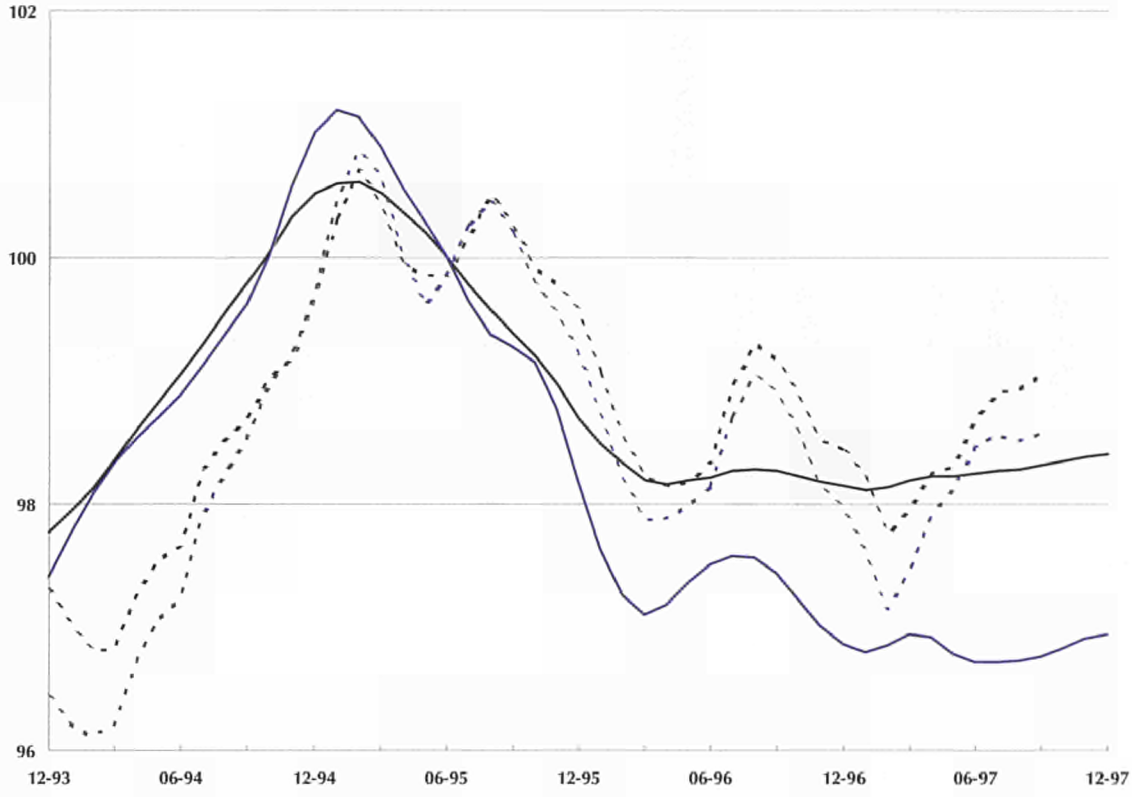
	Latest 3 months available			Total industry	Intermediate goods	Capital goods	Consumer durables	Consumer non-durables
EU-15	04-97	⇨	06-97	-1.5	:	-0.7	-1.2	-1.8
B	11-97	⇨	01-98	:	:	:	-4.7	0.2
DK		⇨		:	:	:	:	:
D	10-97	⇨	12-97	-2.2	-2.8	-2.1	-4.1	-4.2
EL	04-97	⇨	06-97	-2.7	-1.6	-2.3	0.5	-6.1
E	10-97	⇨	12-97	5.2	4.7	12.4	6.0	0.2
F	07-97	⇨	09-97	:	:	0.0	-2.8	-1.5
IRL	01-97	⇨	03-97	4.3	5.1	5.0	:	:
I	04-97	⇨	06-97	-2.4	:	-1.7	-4.1	-4.1
L	12-97	⇨	02-98	0.2	-1.4	5.6	-0.6	0.7
NL	07-96	⇨	09-96	-0.4	:	:	:	:
A	11-97	⇨	01-98	-1.0	-0.9	2.8	-5.2	-4.3
P	10-97	⇨	12-97	-2.3	-0.3	0.2	1.1	-5.1
FIN	04-96	⇨	06-96	1.1	:	:	:	:
S	07-97	⇨	09-97	-0.3	:	:	:	:
UK	11-97	⇨	01-98	0.1	-1.3	1.5	-0.8	0.2
Japan	12-97	⇨	02-98	0.9	:	:	:	:
USA	01-98	⇨	03-98	1.4	:	:	:	:

Employment index for the main industrial groupings: growth rate, three months compared to the same three months of the previous year (%)

Source: eurostat

Figure 2.17

Production and employment trends in construction: indices (1995 = 100)

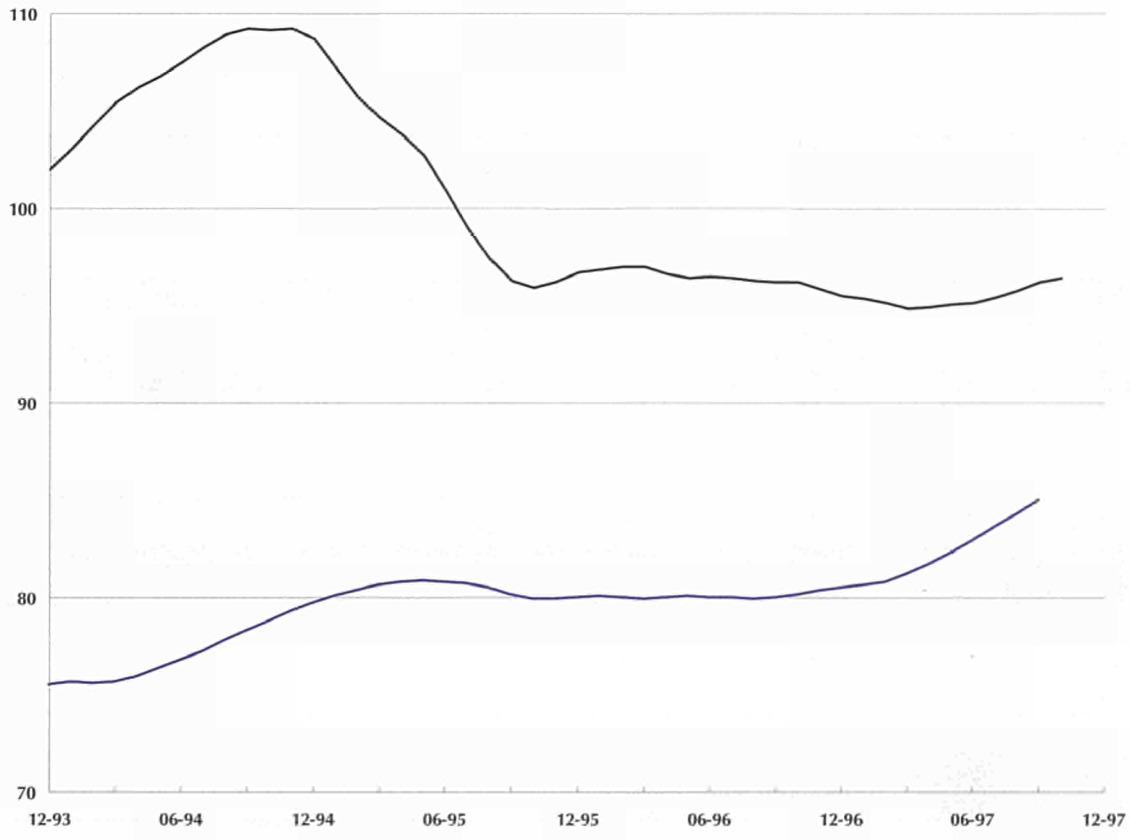


EU-15 construction: production index ——
EU-15 construction: employment index - - - - -
EUR11 construction: production index ——
EUR11 construction: employment index - - - - -

Source: eurostat

Figure 2.18

EU-15 building permits: indices (1995 = 100)

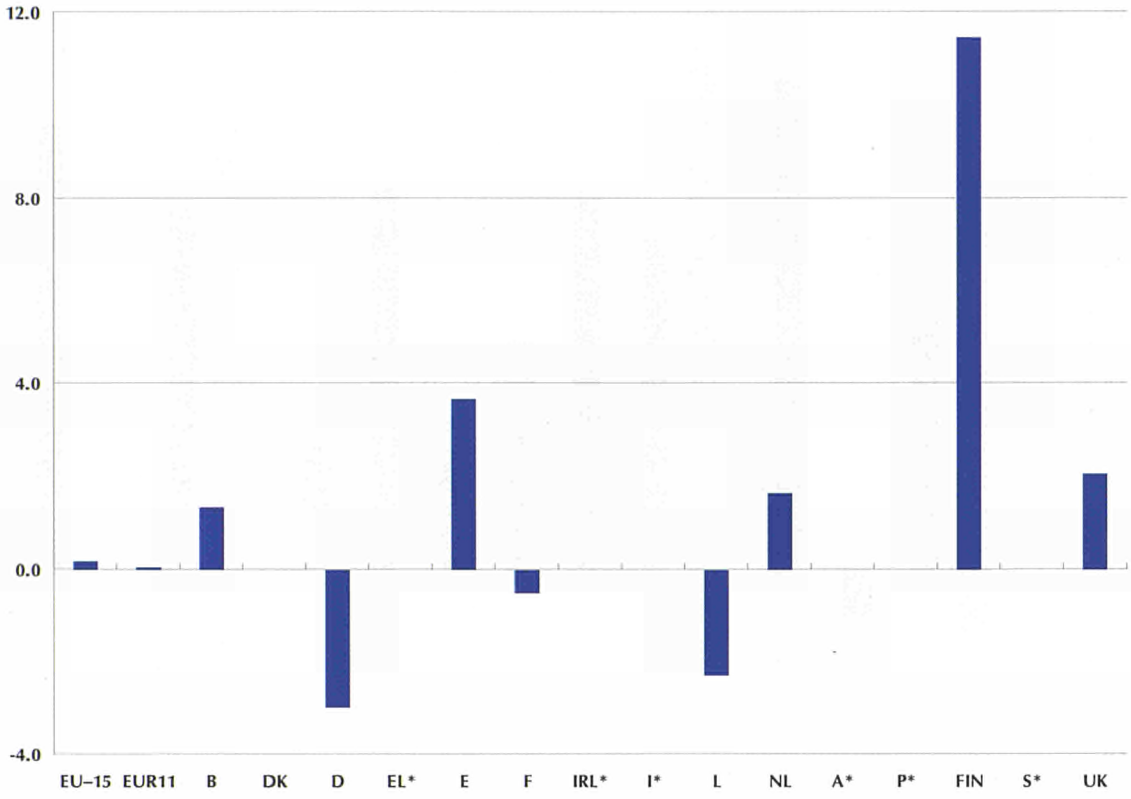


Residential ——
Non-residential ——

Source: eurostat

Production index (working day adjusted & trend cycle)

Figure 2.19



Production index for construction: growth rate, three months compared to the same three months of the previous year, 10-97 to 12-97 (%)

Source: eurostat

Table 2.12

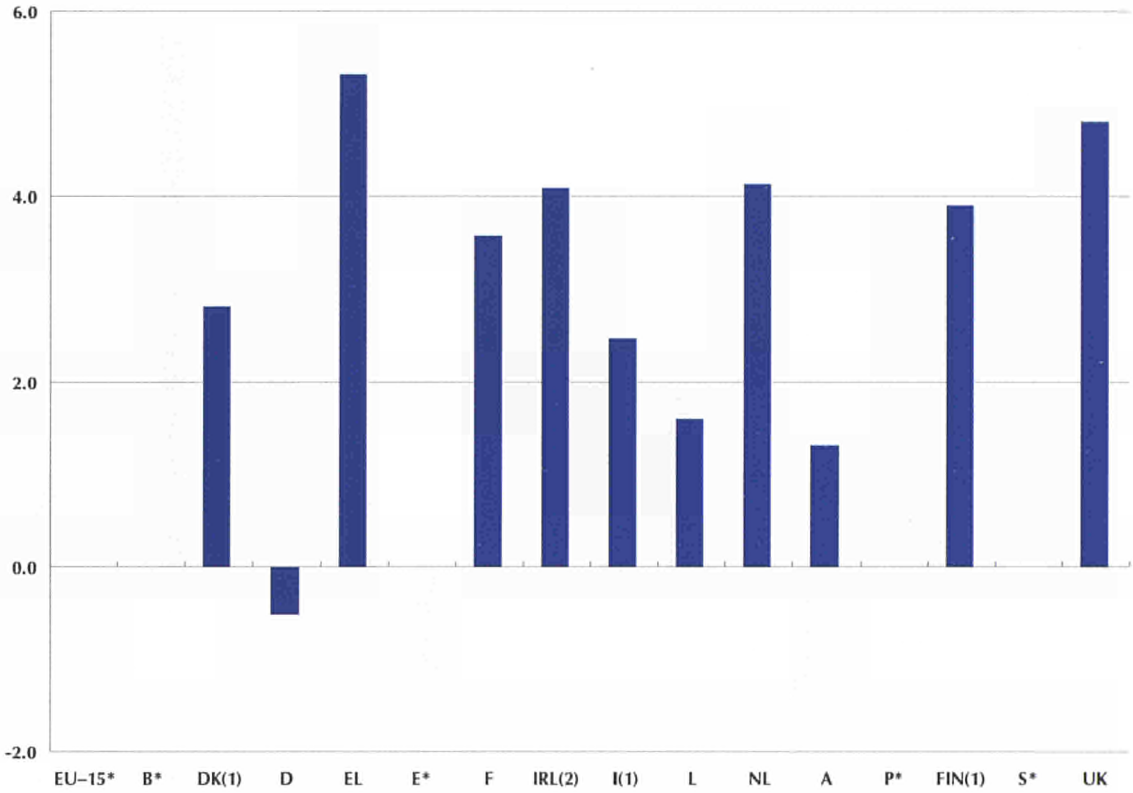
	Latest 3 months available			Building t / t-1	Building t / t-4	Latest 3 months available			Civil engineering t / t-1	Civil engineering t / t-4
EU-15	07-97	⇨	09-97	-0.2	-0.7	07-97	⇨	09-97	0.5	0.1
B		⇨		:	:		⇨		:	:
DK	11-97	⇨	01-98	-4.7	-5.2	11-97	⇨	01-98	-0.7	6.1
D	12-97	⇨	02-98	-0.2	-3.2	12-97	⇨	02-98	-0.2	5.8
EL		⇨		:	:		⇨		:	:
E	10-97	⇨	12-97	-0.4	6.0	10-97	⇨	12-97	-2.9	0.5
F	12-97	⇨	02-98	0.4	1.3	12-97	⇨	02-98	-0.3	2.4
IRL		⇨		:	:		⇨		:	:
I	07-97	⇨	09-97	-2.6	-6.3	01-97	⇨	03-97	1.2	:
L	12-97	⇨	02-98	-0.6	-2.8	12-97	⇨	02-98	-0.8	8.6
NL	07-97	⇨	09-97	3.4	-0.1		⇨		:	:
A	07-97	⇨	09-97	2.1	1.5	07-97	⇨	09-97	-1.3	-1.6
P		⇨		:	:		⇨		:	:
FIN	10-97	⇨	12-97	1.3	14.8	10-97	⇨	12-97	1.3	-1.1
S		⇨		:	:		⇨		:	:
UK	01-97	⇨	03-97	1.4	:	01-97	⇨	03-97	1.2	-3.6

Production index of building and civil engineering: growth rates (%)

Source: eurostat

Figure 2.20

Output prices for new residential buildings: growth rate, three months compared to the same three months of the previous year, 07-97 to 09-97 (%)



1) input prices
2) input prices and one-dwelling buildings

Source: eurostat

Table 2.13

Output prices for new residential buildings: indices (1995 = 100)

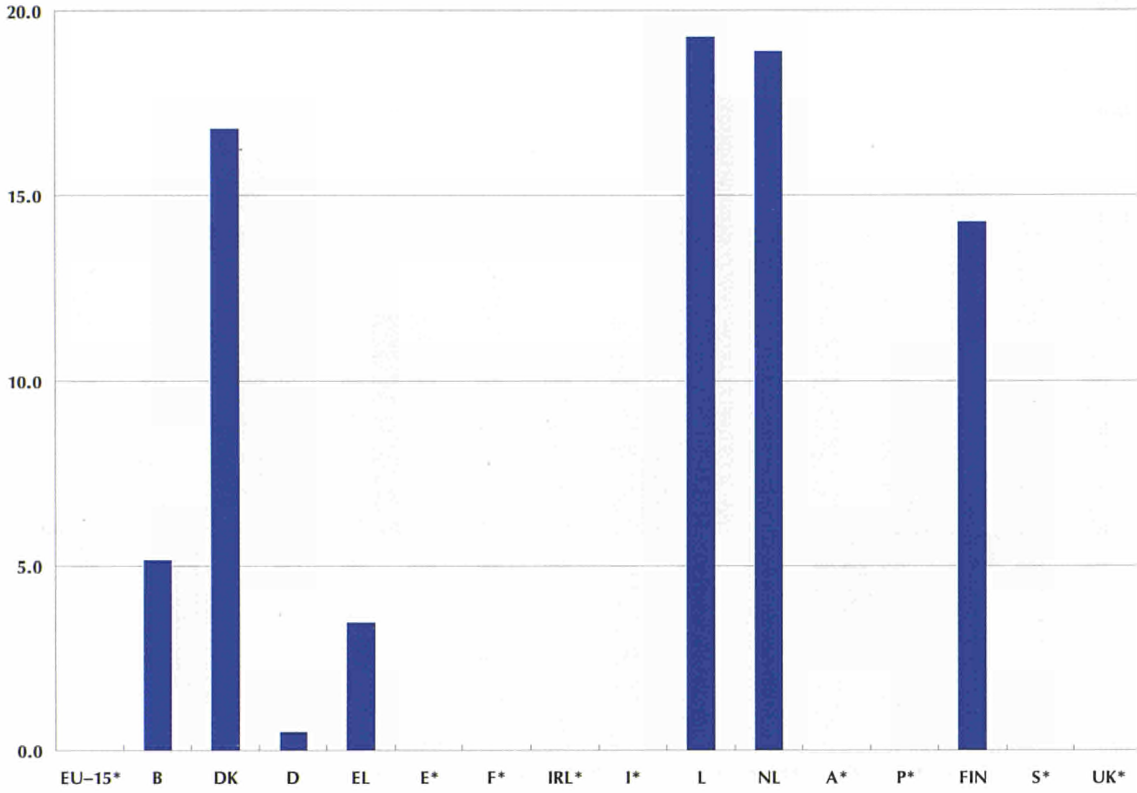
	II-1996	III-1996	IV-1996	I-1997	II-1997	III-1997	IV-1997	I-1998
EU–15	:	:	:	:	:	:	:	:
B	:	:	:	:	:	:	:	:
DK (1)	102.7	103.5	104.2	104.9	105.6	106.4	107.1	107.8
D	100.0	99.9	99.7	99.5	99.4	99.4	99.1	:
EL	105.6	106.2	107.4	110.1	110.7	111.9	113.2	:
E	:	:	:	:	:	:	:	:
F	101.1	101.2	102.8	102.9	104.2	104.8	:	:
IRL (3)	101.1	101.4	102.2	103.3	104.5	105.6	:	:
I (1)	100.8	102.5	103.1	103.3	103.5	105.0	105.3	:
L	100.7	101.0	101.0	102.1	102.1	102.7	102.7	:
NL	102.1	102.1	103.0	104.6	105.5	106.3	108.0	:
A	101.5	101.7	101.7	102.4	102.8	103.1	:	:
P	:	:	:	:	:	:	:	:
FIN (1)	99.1	99.8	100.3	101.4	102.5	103.7	103.7	103.9
S (2)	103.6	121.9	109.6	:	:	:	:	:
UK	101.4	102.4	103.4	105.4	106.4	107.4	109.3	:

1) input prices
2) one-dwelling buildings
3) input prices and one-dwelling buildings

Source: eurostat

Building permits - useful floor area

Figure 2.21



Building permits - useful floor area: growth rate, three months compared to the same three months of the previous year, 09-97 to 11-97 (%)

Source: eurostat

Table 2.14

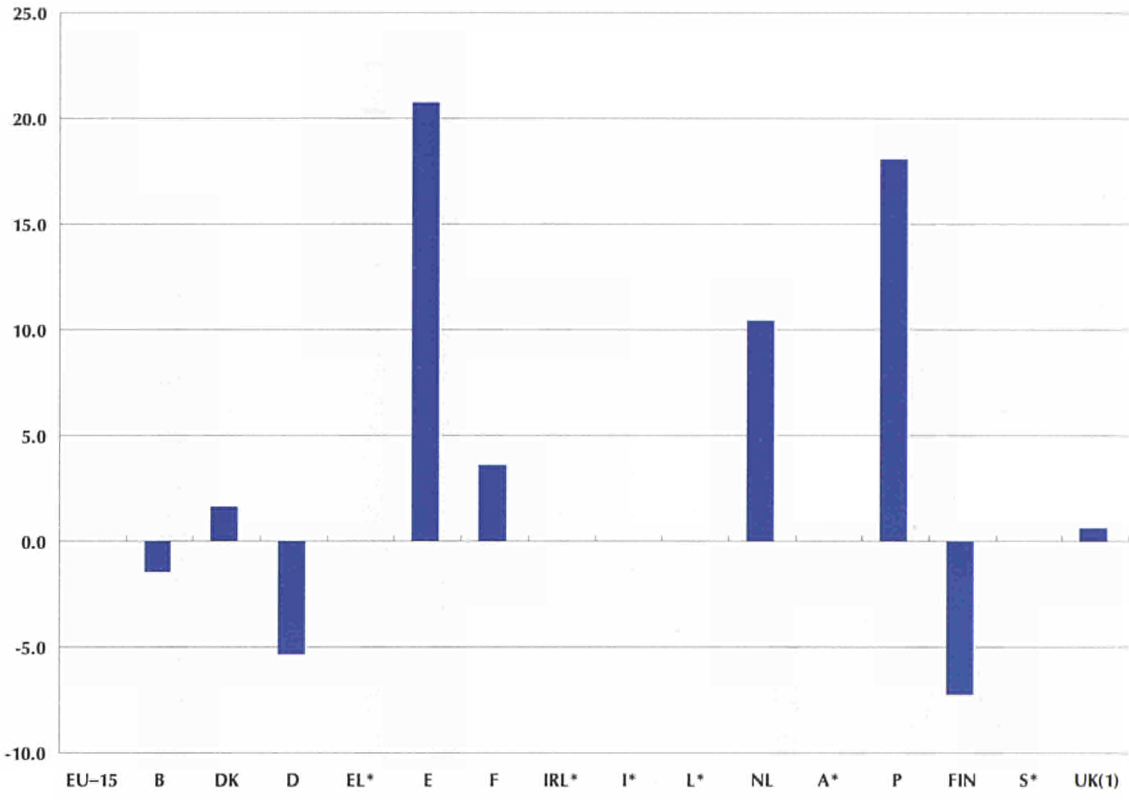
	Latest 3 months available			Residential '000m² 1995 = 100		Latest 3 months available			Non-residential '000m² 1995 = 100	
EU–15		⇨		:	:	07-97	⇨	09-97	:	88.2
B	09-97	⇨	11-97	2,524	114.3	09-97	⇨	11-97	1,800	112.7
DK	11-97	⇨	01-98	437	114.4	11-97	⇨	01-98	1,010	95.3
D	10-97	⇨	12-97	12,195	88.4	10-97	⇨	12-97	10,343	96.0
EL		⇨		:	:		⇨		:	:
E	08-97	⇨	10-97	11,226	99.8	08-97	⇨	10-97	2,249	110.2
F		⇨		:	:	07-97	⇨	09-97	9,401	107.4
IRL	10-97	⇨	12-97	1,263	134.3	10-97	⇨	12-97	761	117.0
I		⇨		:	:		⇨		:	:
L	10-97	⇨	12-97	:	154.1	10-97	⇨	12-97	:	89.5
NL	11-97	⇨	01-98	4,283	108.5	11-97	⇨	01-98	4,925	139.3
A		⇨		:	:		⇨		:	:
P		⇨		:	:		⇨		:	:
FIN	11-97	⇨	01-98	443	94.2	11-97	⇨	01-98	428	76.2
S	12-97	⇨	02-98	226	:	12-97	⇨	02-98	423	:
UK		⇨		:	:		⇨		:	:

Building permits - useful floor area: actual values and indices

Source: eurostat

Figure 2.22

Building permits - no. of dwellings: growth rate, three months compared to the same three months of the previous year, 08-97 to 10-97 (%)



1) buildings starts

Source: eurostat

Table 2.15

Number of dwellings authorised (units)

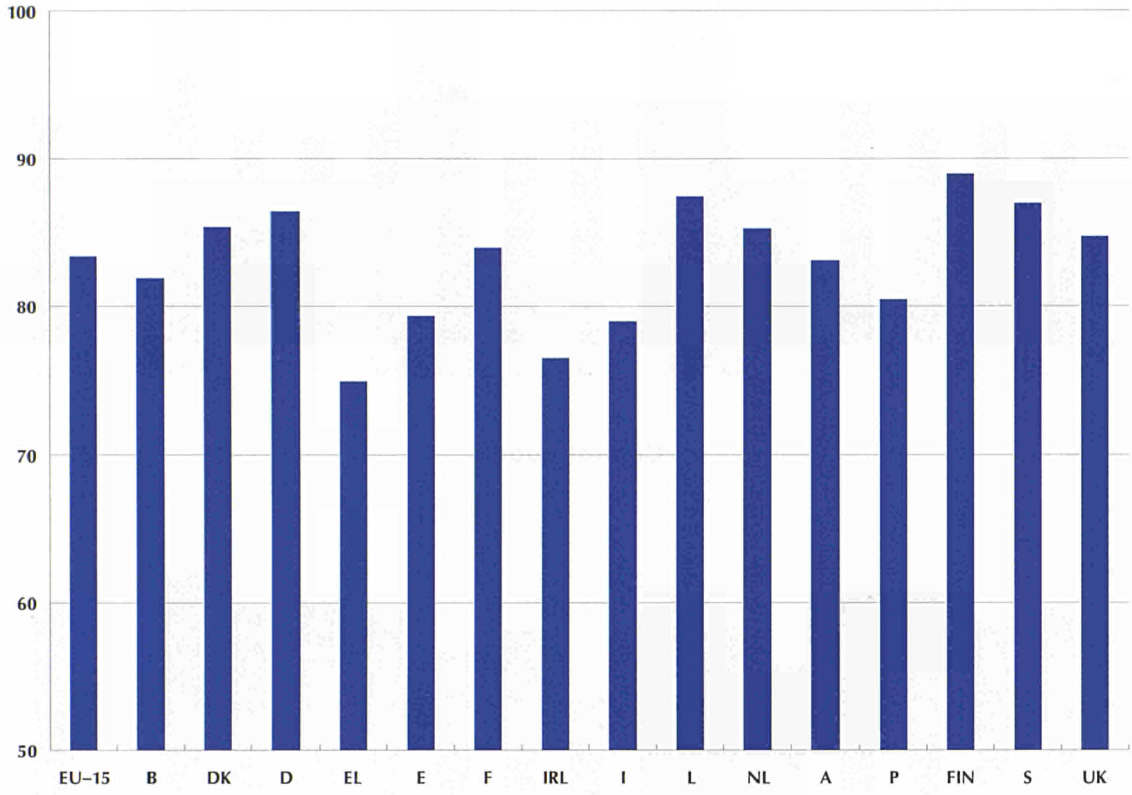
	Latest year available	no. of dwellings	Latest month available	no. of dwellings	no. of dwellings per 1,000 inhabitants	Index, 1995 = 100
EU-15		:	10-97	:	:	100.4
B	1996	48,707	11-97	3,618	0.36	96.6
DK	1997	**16,711**	01-98	**1,147**	:	**119.1**
D	1997	530,263	12-97	45,218	0.55	84.9
EL		:		:	:	:
E	1996	265,956	10-97	26,847	0.69	114.0
F	1996	304,186	11-97	25,600	0.44	99.7
IRL (1)	1997	37,060	12-97	:	:	119.3
I	1996	**160,553**	06-97	**10,187**	**0.18**	**70.4**
L	1996	2,797	02-97	204	0.50	91.5
NL	1997	101,501	01-98	5,951	:	72.6
A		:		:	:	:
P	1997	94,786	12-97	8,667	0.87	135.2
FIN	1997	30,913	01-98	1,556	:	102.3
S	1997	11,325	02-98	362	:	:
UK (2)	1997	188,800	01-98	14,300	:	102.3

1) quarterly data
2) buildings starts

Source: eurostat

Capacity utilisation rates

Figure 2.23



Capacity utilisation rates: 01-98 (%)

Source: DG II, Business Survey

Table 2.16

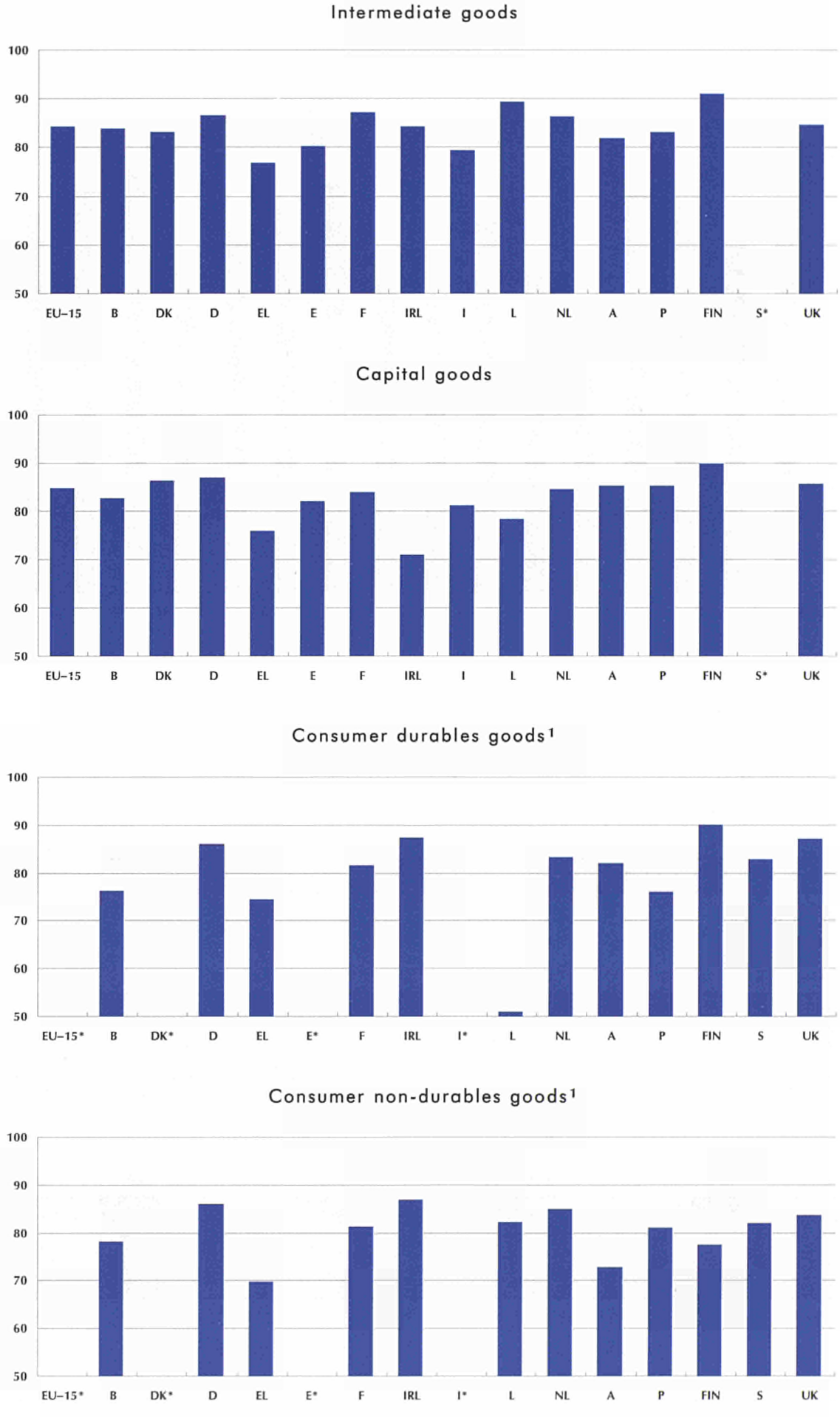
Growth rate: latest month, t / t-12 (%)	04-97	07-97	10-97	01-98
EU–15	3.2	81.7	82.6	83.4	83.4
B	2.0	80.3	82.4	83.2	81.9
DK	4.1	82.0	85.0	84.0	85.4
D	4.9	84.6	85.5	86.3	86.4
EL	-0.3	72.1	76.3	74.3	75.0
E	3.0	77.3	78.9	80.5	79.4
F	0.7	82.8	83.8	84.8	84.0
IRL	-0.4	80.5	73.0	74.2	76.6
I	5.2	76.2	77.7	77.7	79.0
L	10.8	82.7	84.5	84.8	87.5
NL	1.8	83.8	84.9	85.2	85.3
A	4.1	80.7	83.5	84.0	83.1
P	-1.1	80.3	80.2	81.9	80.5
FIN	3.9	86.9	87.0	89.0	89.0
S	0.0	84.0	87.0	85.0	87.0
UK	2.3	83.5	83.8	85.1	84.7

Capacity utilisation rates (%)

Source: DG II, Business Survey

Figure 2.24

Capacity utilisation rates for the main industrial groupings, 01-98
(%)



1) data is for 04-97

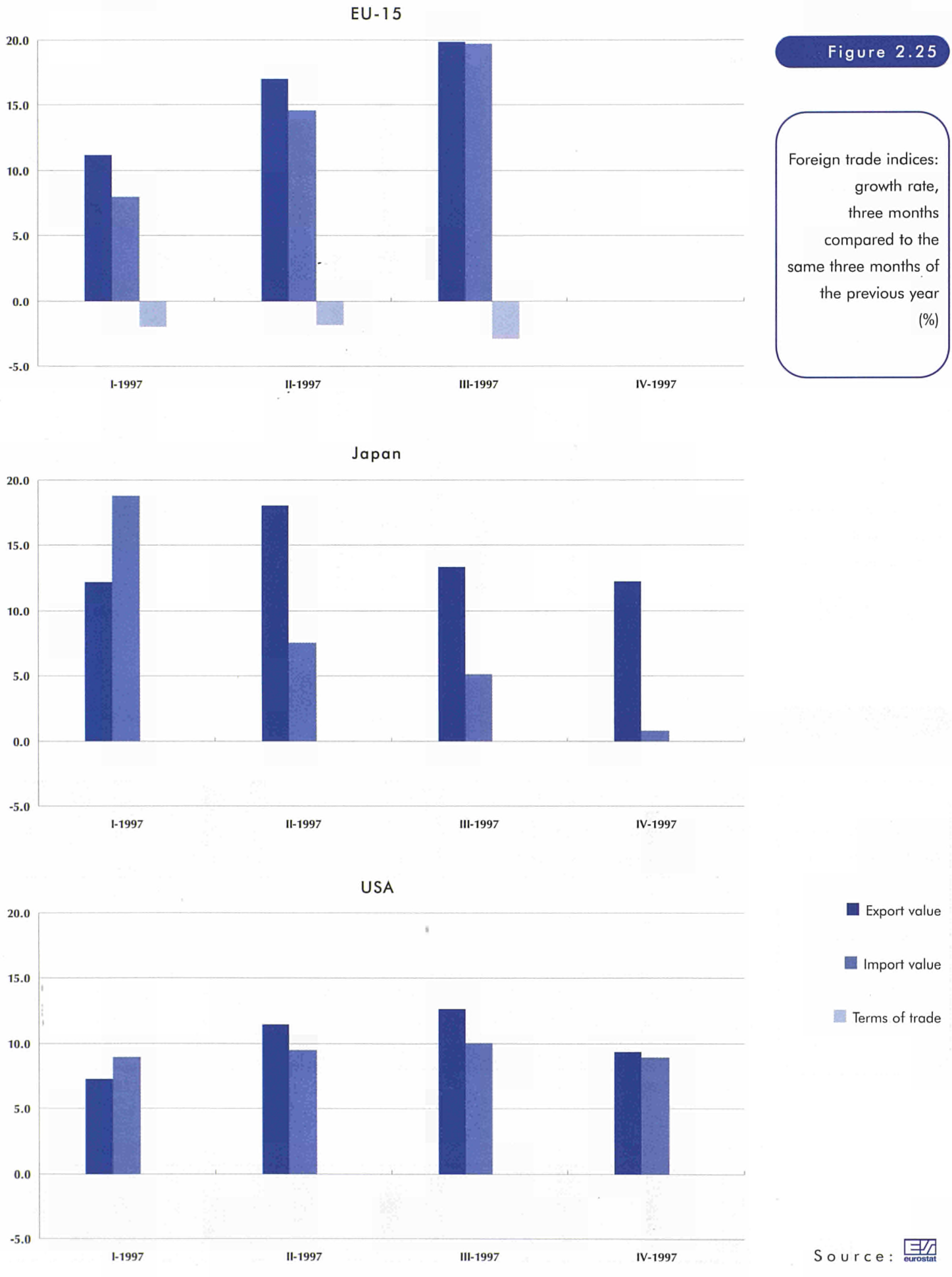
Source: DG II, Business Survey

eurostat

Foreign trade indices

Figure 2.25

Foreign trade indices: growth rate, three months compared to the same three months of the previous year (%)

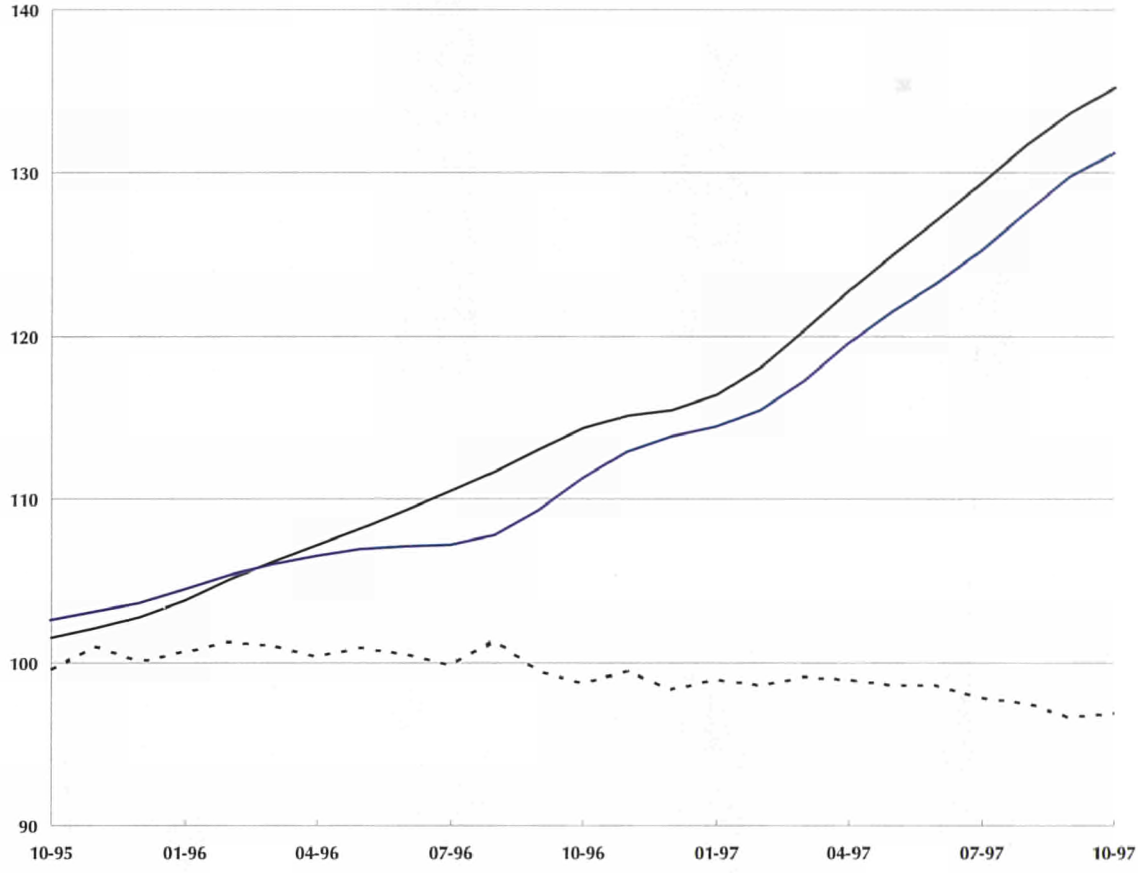


Source: eurostat

Foreign trade indices (trend cycle)

Figure 2.26

EU-15 foreign trade indices in ECU terms (1995 = 100)



Source: eurostat

Table 2.17

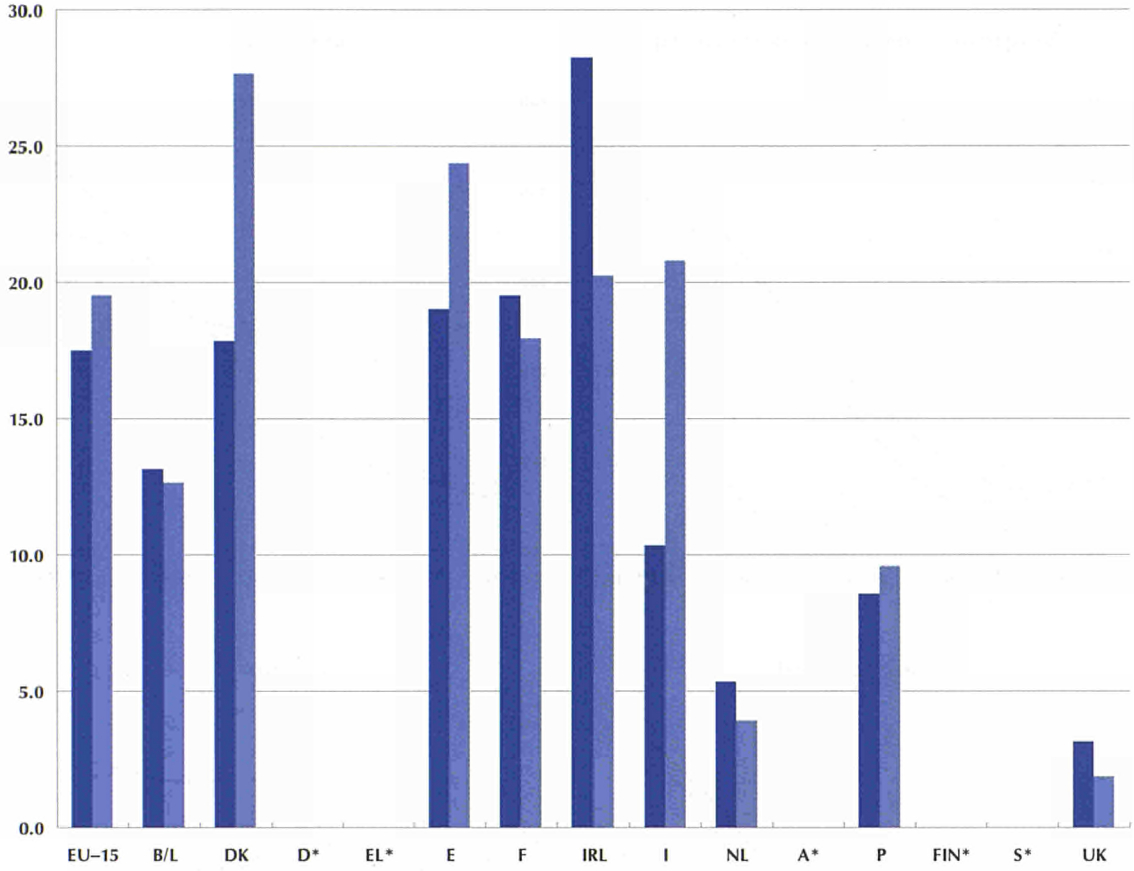
Foreign trade indices (value indices are in ECU terms): growth rate, three months compared to the previous three months (%)

	Latest 3 months available			Exports Value	Exports Volume	Imports Value	Imports Volume	Terms of trade
EU–15	08-97	⇨	10-97	5.0	3.1	5.0	2.3	-1.4
B/L	09-97	⇨	11-97	2.2	1.2	2.5	1.2	-0.5
DK	09-97	⇨	11-97	1.7	0.9	5.3	0.4	1.2
D	07-97	⇨	09-97	2.8	1.9	3.7	1.4	-0.8
EL	07-97	⇨	09-97	1.9	1.3	4.3	-2.2	-0.2
E	09-97	⇨	11-97	3.9	2.0	6.5	5.6	1.2
F	09-97	⇨	11-97	3.2	1.9	3.2	1.5	-0.4
IRL	08-97	⇨	10-97	7.3	5.7	4.1	3.0	1.5
I	08-97	⇨	10-97	3.6	1.7	5.0	3.2	-1.2
NL	08-97	⇨	10-97	2.1	0.9	:	-2.8	0.2
A		⇨		:	:	:	:	:
P	08-97	⇨	10-97	3.0	0.9	2.8	0.9	-0.9
FIN		⇨		:	:	:	:	:
S		⇨		:	:	:	:	:
UK	09-97	⇨	11-97	0.0	-0.3	0.4	0.8	0.9

Source: eurostat

Foreign trade indices

Figure 2.27



Foreign trade indices (in ECU terms): growth rate, three months compared to the same three months of the previous year, 08-97 to 10-97 (%)

Source: eurostat

Table 2.18

	Latest 3 months available			Exports Value	Exports Volume	Imports Value	Imports Volume	Terms of trade
EU-15	08-97	⇨	10-97	17.5	11.0	19.6	9.8	-2.8
B/L	09-97	⇨	11-97	3.8	-1.5	6.7	0.5	-0.8
DK	09-97	⇨	11-97	12.4	5.0	24.4	14.4	-1.5
D	07-97	⇨	09-97	13.0	8.5	14.2	7.3	-2.1
EL	07-97	⇨	09-97	6.5	-0.5	12.2	-1.5	-6.2
E	09-97	⇨	11-97	17.2	14.1	23.8	16.9	-2.9
F	09-97	⇨	11-97	18.1	14.0	14.6	8.6	-1.9
IRL	08-97	⇨	10-97	28.3	31.3	20.2	17.1	-5.3
I	08-97	⇨	10-97	10.4	7.1	20.8	16.4	-0.8
NL	08-97	⇨	10-97	5.4	-5.1	3.9	-5.9	0.6
A		⇨		:	:	:	:	:
P	08-97	⇨	10-97	8.6	1.9	9.6	2.7	-0.6
FIN		⇨		:	:	:	:	:
S		⇨		:	:	:	:	:
UK	09-97	⇨	11-97	2.2	5.1	2.7	6.4	0.6

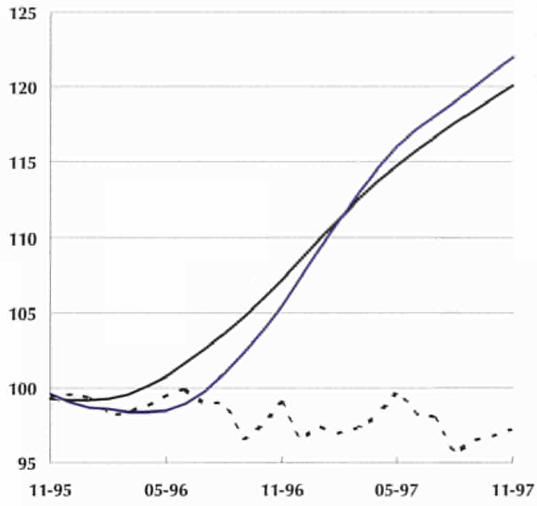
Foreign trade indices (value indices are in ECU terms): three months compared to the same three months of the previous year (%)

Source: eurostat

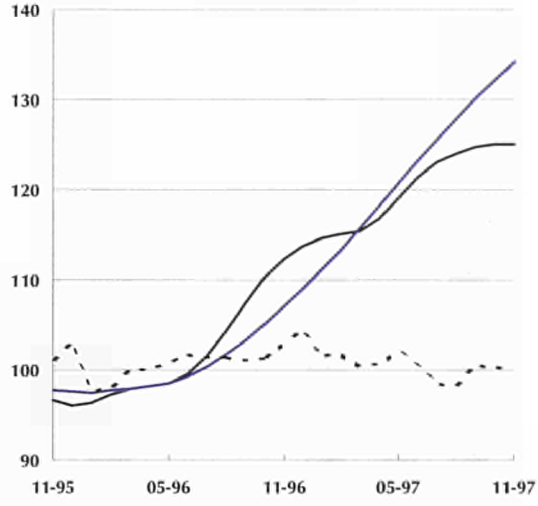
Figure 2.28

Foreign trade indices in ECU terms (1995 = 100)

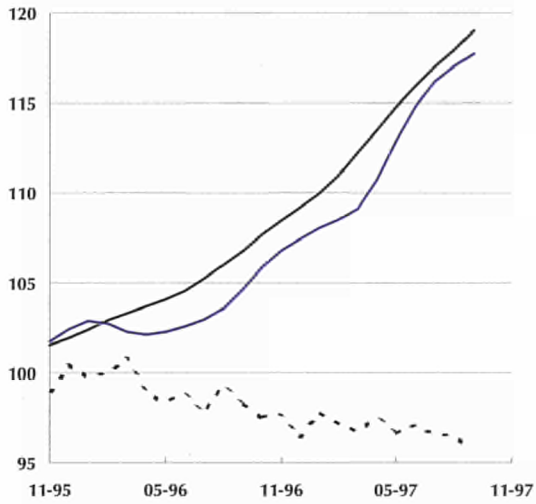
Belgique / België, Luxembourg



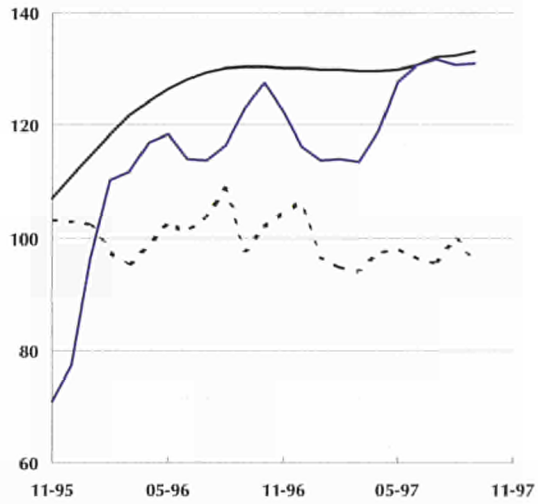
Danmark



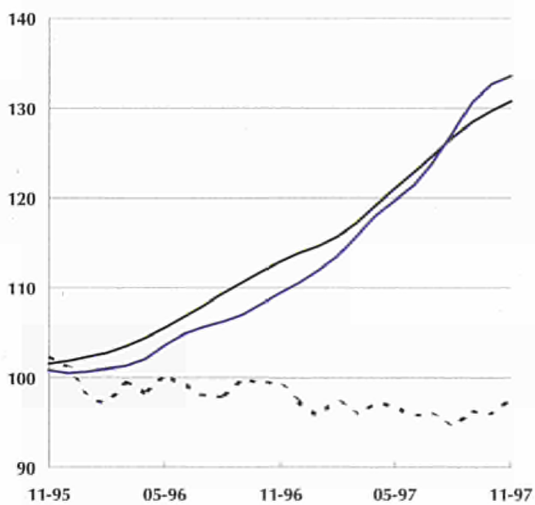
Deutschland



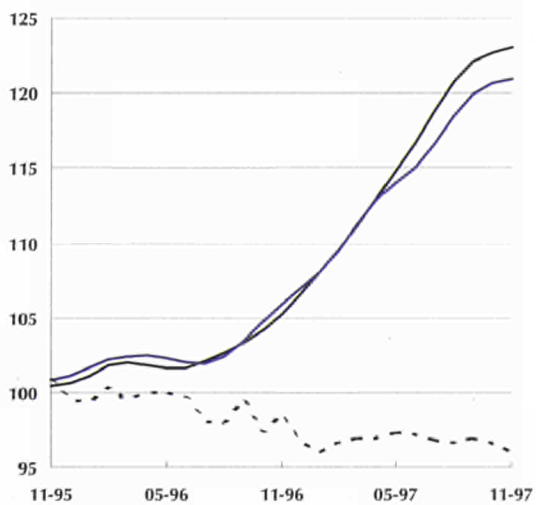
Ellada



España



France



Export value index ——

Import value index ——

Terms of trade - - - - -

Source: eurostat

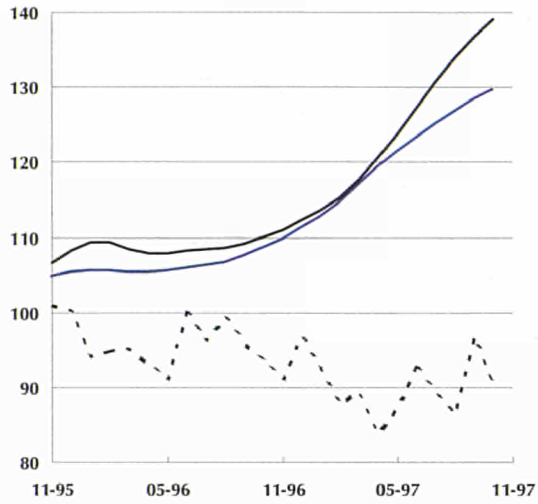
eurostat

Foreign trade indices (trend cycle)

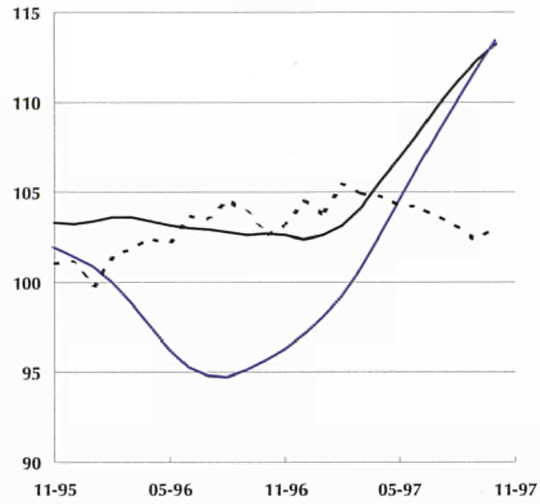
Figure 2.28

Foreign trade indices in ECU terms (1995 = 100)

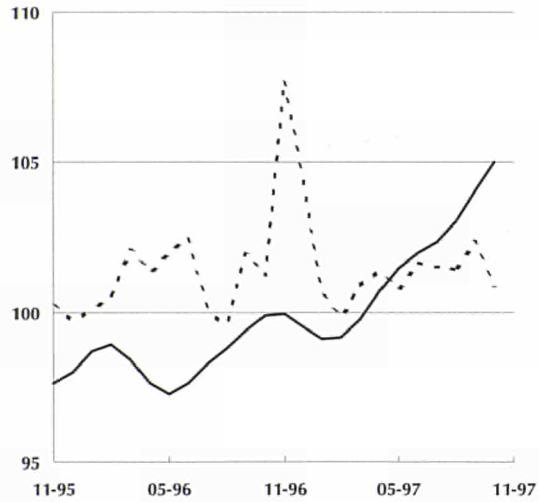
Ireland



Italia



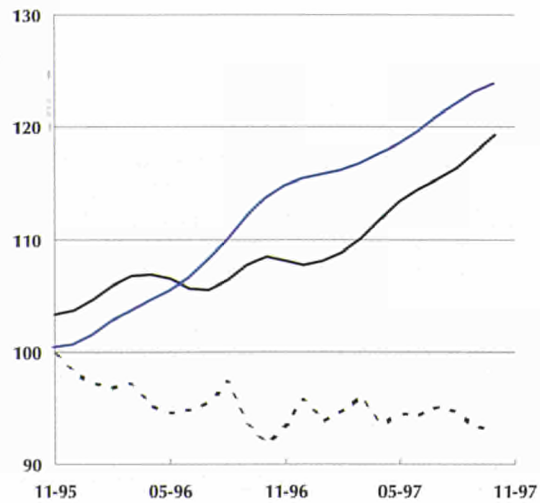
Nederland



Österreich

Not available

Portugal



Suomi / Finland

Not available

Export value index

Import value index

Terms of trade

Source: eurostat

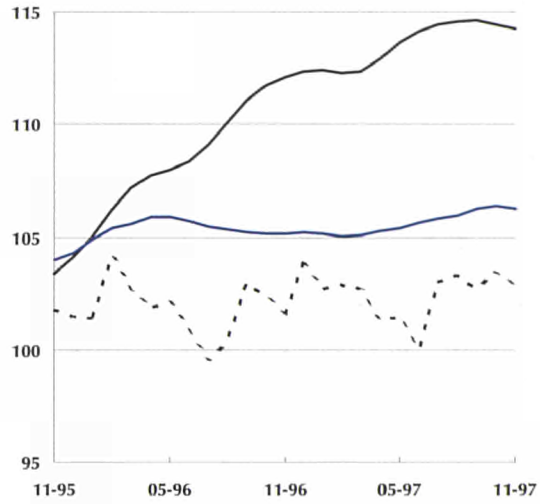
Figure 2.28

Foreign trade indices in ECU terms (1995 = 100)

Sverige

Not available

United Kingdom



Export value index ——

Import value index ——

Terms of trade - - - - -

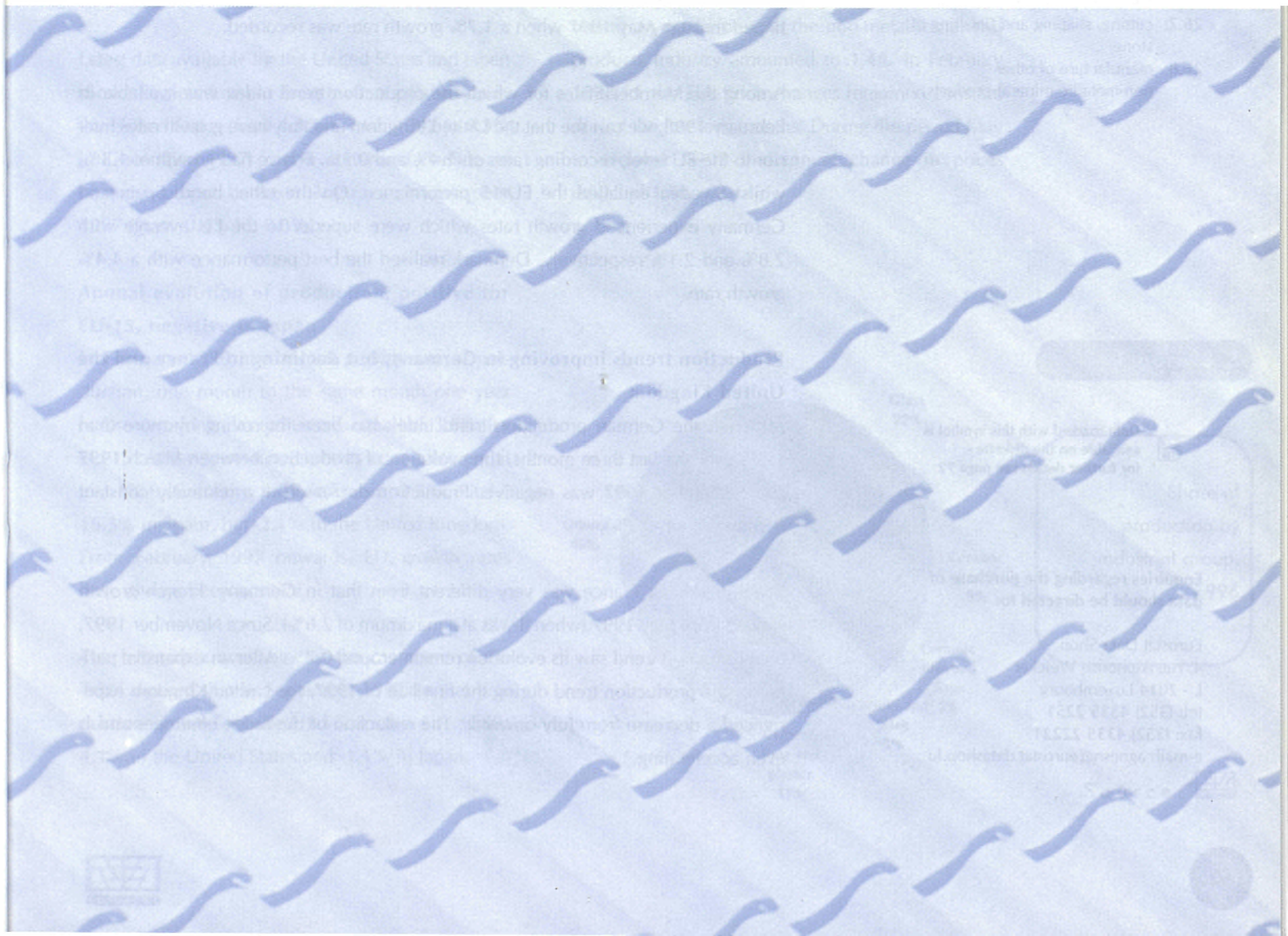
Further information - employment, construction and trade indices:

Figures showing the number of persons employed include all persons employed by the firm (manual workers and salaried employees on the firm's payroll) plus the self-employed.
For the construction activity there are some very specific variables: for details of these please refer to the Eurostat publication "Methodology of Industrial Short-term Indicators" - CA-97-96-079-EN-C.
For the indices of imports and exports, foreign trade data of industrial products (following the nomenclature of the Harmonised System) were grouped according to the industrial NACE Rev.1 activity to which they belong. This grouping of products causes inevitably certain inaccuracies which can reduce the reliability of these foreign trade series. The indices for EU-15 refer only to extra-Union trade, the indices for Member States reflect also intra-Union trade.
Full methodological notes may be found on page 73.

Source: eurostat

eurostat

3. Non-metallic mineral products



3. Non-metallic mineral products

Description of the NACE Rev.1 groups in division 26:

26.1: manufacture of glass and glass products;
26.2: manufacture of non-refractory ceramic goods other than for construction;
26.3: manufacture of ceramic tiles and flags;
26.4: manufacture of bricks, tiles and construction products, in baked clay;
26.5: manufacture of cement, lime and plaster;
26.6: manufacture of articles of concrete, plaster and cement;
26.7: cutting, shaping and finishing of stone;
26.8: manufacture of other non-metallic mineral products

Data marked with this symbol is available on the diskette - for further details see page 72

Enquiries regarding the purchase of data should be directed to:

Eurostat Data-Shop
4, rue Alphonse Weicker
L - 2014 Luxembourg
tel: (352) 4335 2251
fax: (352) 4335 22221
e-mail: agnesn@eurostat.datashop.lu

Positive evolution of the production trend index

In February 1998, the three-month to three-month growth rate of the trend of the production index for the non-metallic minerals industry for EU-15 equalled 1.1%. It decreased by 0.1 percentage points compared to January 1998 and hence recorded the same level as in December 1997. The evolution of the trend cycle has been relatively erratic for the past two years. The first two quarters of 1996 saw the production trend index decrease, the minimum rate being recorded in March 1996, -1.9%. During the third quarter of 1996, the production trend recovered slightly with positive growth rates between 0.3% and 0.5%. Winter 1996-1997 saw the production trend decreasing again during a four month period. But the reduction appeared inferior to that recorded one year before. From March 1997 onwards, production has been increasing with growth rates always higher than 0.5%. Such performance continued through May 1997 when a 1.7% growth rate was recorded.

Among the Member States for which the production trend index was available in February 1998, we can see that the United Kingdom and Italy have growth rates inferior to the EU level, recording rates of -1.4% and 0.7%. France had growth of 1.3%, whilst Sweden equalled the EU-15 performance. On the other hand, Spain and Germany experienced growth rates which were superior to the EU average with 2.8% and 2.1% respectively. Denmark realised the best performance with a 4.4% growth rate.

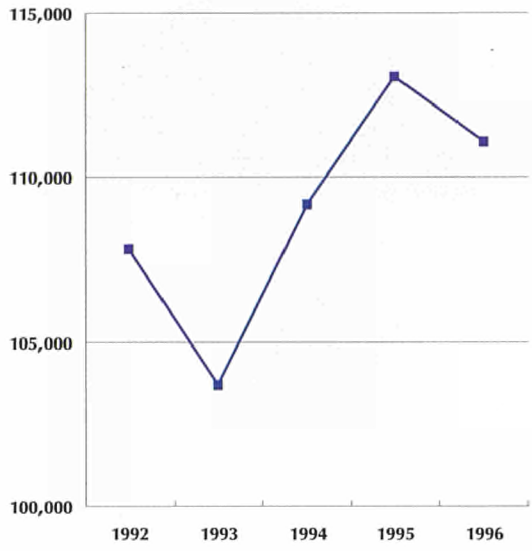
Production trends improving in Germany, but declining in France and the United Kingdom

Although the German production trend index has been improving by more than 1.5% over the last three months, the evolution of production between March 1997 and September 1997 was negative. Production decreased at a relatively constant rhythm (about -0.3%).

The situation in France was very different from that in Germany. French growth slowed from May 1997 (when it was at a maximum of 2.6%). Since November 1997, the production trend saw its evolution remain around 0.7%. After an expansive period for the production trend during the first half of 1997, the United Kingdom experienced a decrease from July onwards. The reduction of the index continues and is even accelerating.

EU-15 production rose by 1.1% in February 1998 (three-month to three-month growth rate)

Figure 3.1



EU-15 production in constant prices (million ECU)

Source: eurostat

In Italy, after a relatively short period of declining production (winter 1996), production has increased at a slight but positive rate. For instance, November 1997 recorded a maximum rate of 1.3%.

Latest data available for the United States and Japan showed a slowdown in the growth of production in the United States (from 1.9% in May 1997 to 0.3% in December 1997) and a continued decline in Japanese output between August and September 1997 (from -0.4% to -0.8%).

Annual evolution of production: positive for EU-15, negative in Japan

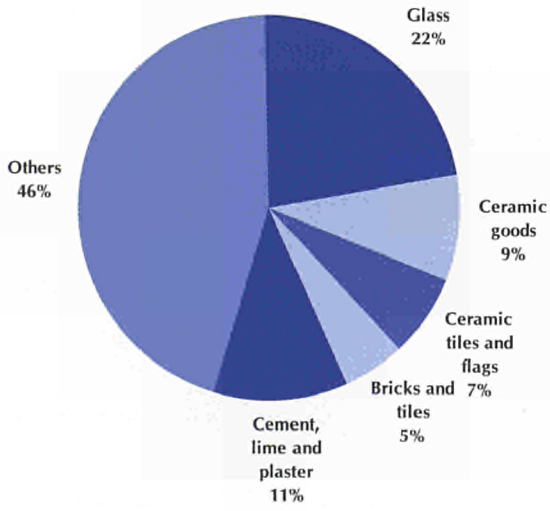
In February 1998, the annual growth rate of production, one month to the same month one year before (working day adjusted) equalled 3.8% for EU-15. At the same time, growth rates were equal to 1.1% in Germany, 4.8% in France, 3.5% in Italy, 16.3% in Spain, but -2.1% in the United Kingdom. From February 1997 onwards, EU growth rates have always been positive.

The latest data available for the members of the Triad showed that in September 1997 annual production growth equalled 1.5% in the EU, whilst 4.1% in the United States and -1.1% in Japan.

Germany experienced falling prices down 0.9% in February 1998

The evolution of the producer price index, (annual change in prices, one month compared to the same month a year before), in the non-metallic mineral products industry amounted to 1.4% in February 1998 for the EU. Price changes remained constant during the last four months. During the period May to October 1997 the annual change in prices equalled 1.5%.

Figure 3.2

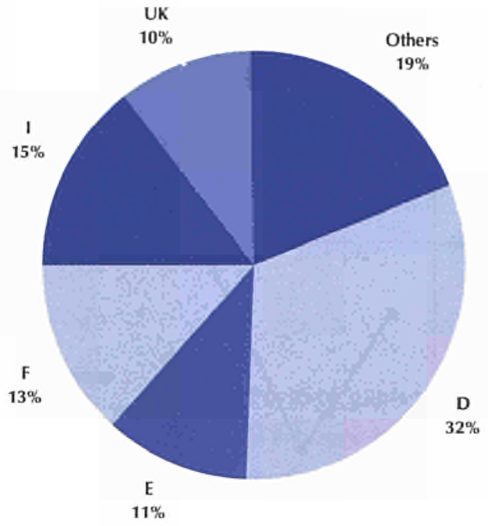


Share of production by industrial group, 1996

Source: eurostat

Figure 3.3

Share of EU-15 value-added at factor cost, 1996

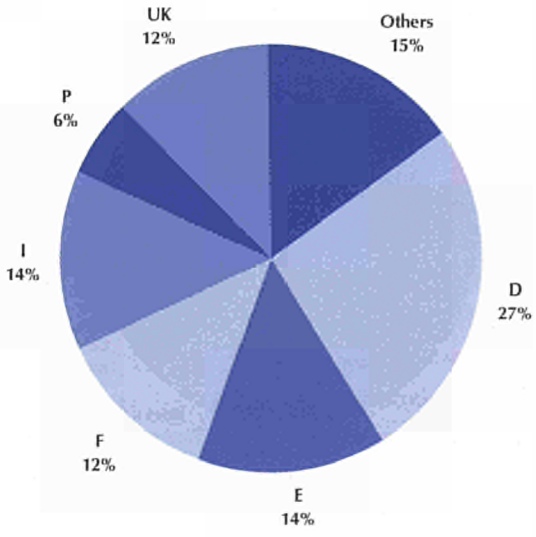


Source: eurostat

The situation was different in Germany, where falling prices were experienced for two years (except in February 1997, with a rate of change equal to 0.1%). Thus, in February 1998 (the latest data available) Germany recorded a decrease of 0.9%, 0.1 percentage points down on the month before. At the start of 1998, Germany appeared as the only country with a negative evolution in prices (amongst the Member States for which data is available).

Figure 3.4

Share of EU-15 number of persons employed, 1996



Source: eurostat

France also experienced falling prices between July 1996 and September 1997 with the evolution of prices equal to -1.3% between February and April 1997. Since October 1997, France returned to a period of price expansion and the annual evolution of prices equalled 1.0% in February 1998, i.e. an increase of 0.3 percentage points compared to the month before.

Compared to the price increases seen for the EU, the evolution of prices was relatively high in Italy (2.0%), Sweden (2.4%) and the United Kingdom (2.8%). It was lower than the EU average (1.4%) in Spain and the Netherlands (1.0% and 0.9%).

Finally, the observation of the evolution of the producer price index in the Triad showed a relative homogeneity between May and October 1997 (latest data available for Japan and the United States). In fact, while EU-15 recorded a 1.5% increase in prices in October 1997, Japan and the USA recorded growth of 1.3% and 1.5% respectively. Nevertheless, Japan experienced falling prices between January 1996 and March 1997, for example, -0.5% in January 1997. On the other hand, the United States recorded a 2.1% increase in producer prices in April 1997 and has since seen a slight slowdown.

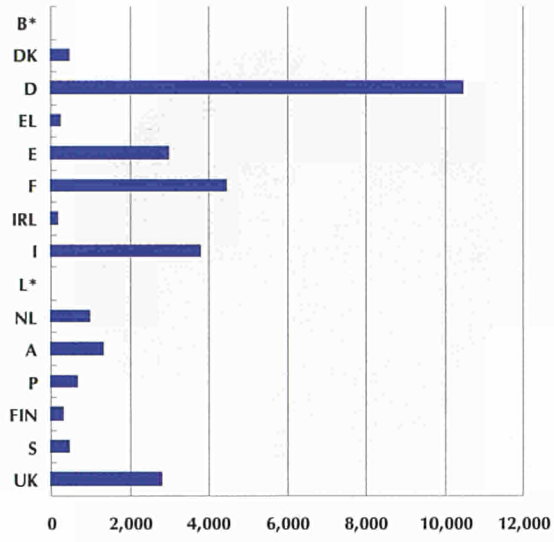
Description of the industry

Non-metallic mineral products are made up of several groups of products and most of them are particularly related to construction. Therefore, companies producing cement, concrete products, and bricks and tiles have tended to follow closely the marked ebb and flow of the construction industry. Glass and ceramics are also partially affected by construction activity, although consumption is spread more evenly across a range of industries from general manufacturing to food, beverages, and catering. The main features of non-metallic mineral products are a low value to weight ratio and high transport costs. Transportation costs, strongly affect the final price and have generally proved a deterrent to competition from different sources. The relatively high level of investment needs a high pro-

duction efficiency scale in the glass or cement industry for firms to enter the market (acting as another barrier to entry). In industries such as ceramics, production units of small and big enterprises live together in the market.

Non-metallic mineral products cover 3.6% of total EU-15 manufacturing production in current prices. The shares of EU-15 production in current prices of each group in the non-metallic industry total for 1996 were as follows: concrete (33.8%); glass (22.1%); ceramic goods (15.9%); cement, lime and plaster (11.2%); clay products (5.3%) and stone (4.5%).

Figure 3.5



Labour costs, 1995 (million ECU)

Source: eurostat

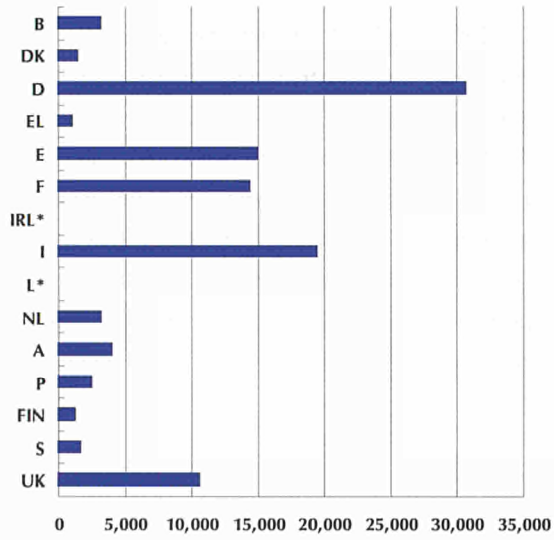
Europe produced 120.6 billion ECU of non-metallic minerals in current value terms in 1996. Japan (79.7 billion ECU) and the USA (69.0 billion ECU) saw the industry account for 3.4% and 2.4% respectively of their domestic manufacturing production (also data for 1996).

Production in constant prices

In 1996, real production of non-metallic mineral products in the EU decreased by 1.8% compared to the year before. Looking at the evolution of the 3-digit NACE Rev.1 groups in the non-metallic minerals industry, annual growth rates of production in constant prices for 1996 were positive for the EU-15 concrete industry (+3.5%). Real production fell by 1.0% in the glass industry, by 1.4% for stone; 2.6% for clay and 8.0% for cement, lime and plaster.

Real output (at an aggregate level of all non-metallic mineral products) also fell on an annual basis (1996 compared to 1995) in France (-5.1%), the United Kingdom (-4.6%) and in Italy (-3.6%). Over a longer time period, these losses were quite often pronounced: for example, Finland, Sweden and the United Kingdom showed reductions of 34.6%, 25.2% and 16.0% during the first six years of the 1990's. Positive developments were seen during the period 1990-1996, when annual average growth of 4.2%, 3.1% and 2.2% was recorded for Portugal, Ireland and Germany.

Figure 3.6



Production in constant prices, 1996 (million ECU)

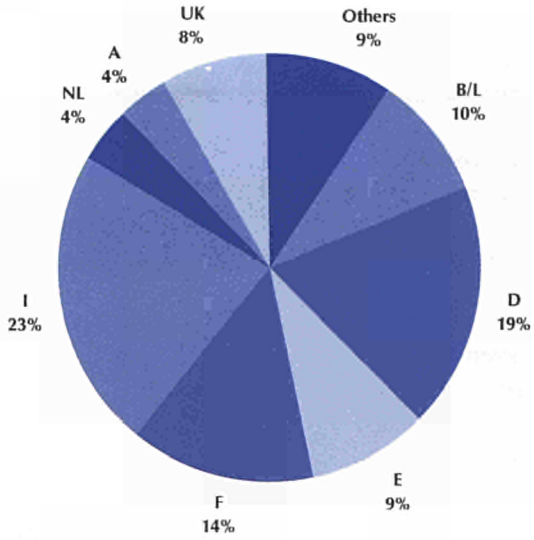
Source: eurostat

Specialisation in production

In 1996, the largest European producers for non-metallic mineral products were Germany (with 30.5% of EU-15 production in current prices), followed by Italy (15.7%), France (13.6%) and Spain (11.5%). Sweden, Ireland and the United Kingdom were among the least specialised countries in 1996 for this particular industry, with non-metallic mineral products accounting for shares of 1.8%, 2.1% and 2.6% of total domestic manufacturing output. On the other hand, data for Greece (6.6% of total manufacturing), Portugal (6.0%) and Austria (6.0%) reported high levels of specialisation.

Figure 3.7

Share of European exports to the rest of the world, 1996



Source: eurostat

Employment

In the last six years for which data are available (1990-1996), the European non-metallic mineral products industry has experienced a steady decline in the number of persons employed, 1.03 millions in 1996 (down 16.9% compared to the 1990 level). Over the same period, Japan and the USA followed the same trend with decreases of 10.0% and 4.1% respectively. Employment in these two countries corresponded to 40.0% and 49.7% of EU employment.

Within the Member States, Germany (with 26.1%), Spain (14.2%) and Italy (14.0%) accounted for the largest shares of the European workforce in 1996. Back in 1990, the same three countries recorded shares in the EU-15 total of 25.4%, 14.8% and 13.0% respectively.

The first six years of the 1990's saw employment fall in every Member State (Denmark and Finland do not have data available). Employment declined by 39.1% in Sweden (equal to an average annual rate of -7.9%) and by 28.8% in the United Kingdom (annual rate of -5.5%). The least pronounced deterioration of employment levels were recorded in Ireland (down by 7.3%, or an annual change of -1.3%) and the Netherlands (down 3.2%, an annual change of -0.5%).

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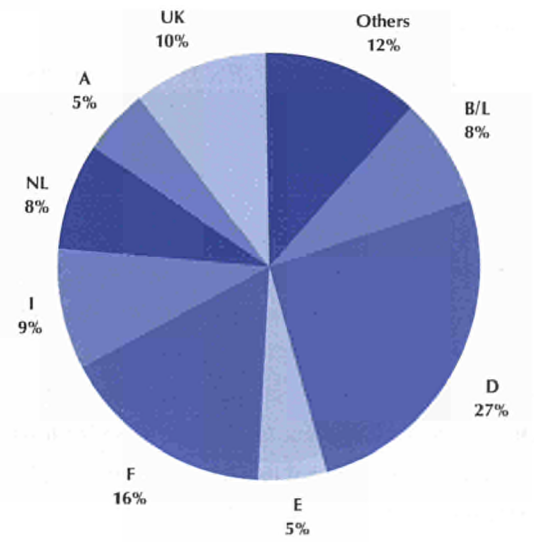
Figure 3.8

Share of European imports from the rest of the world, 1996



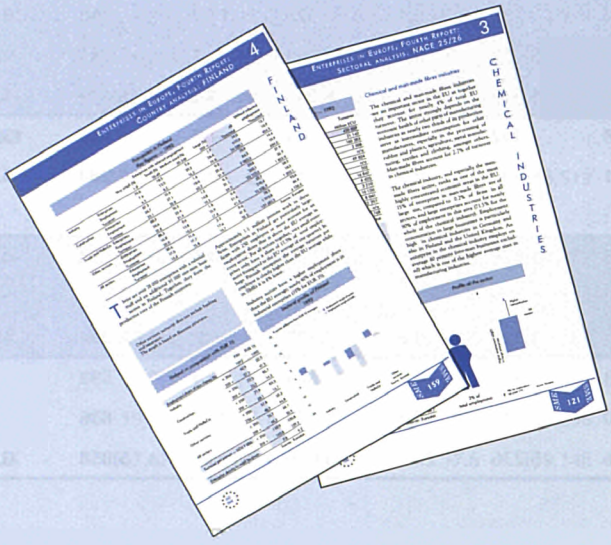
Source: eurostat

Other Eurostat products

Enterprises in Europe: fourth report

This is a biennial publication produced by Eurostat in co-operation with DG XXIII of the European Commission.

There were around 16 million small and medium-sized enterprises (SMEs) in 1992 in the countries of EU-15, employing more than 100 million people.



The publication contains several parts which present the information that has been gathered by Eurostat. Each has been designed to facilitate the rapid acquisition of the facts. The interested reader may turn to detailed country or sectoral information. Besides this information, an update of the whole SME database will be published on CD-Rom in the first half of 1998. Eurostat Data-Shops also have the most recent data and can make user-specific extractions suited to customers' needs.

The paper publication is broken down into the following sections:
Part 1: main information on European enterprises;
Part 2: specific analyses, such as enterprise creation, the innovative behaviour of SMEs or regional analyses;
Parts 3 & 4: sectoral and country analyses.

The sources used are normally existing business registers in the European countries. The following economic indicators are provided: employment, turnover and sometimes value added and labour costs.

Enquiries regarding the purchase of data should be directed to:

Eurostat Data-Shop
4, rue Alphonse Weicker
L - 2014 Luxembourg

tel: (352) 4335 2251
fax: (352) 4335 22221
e-mail: agnesn@eurostat.datashop.lu

An order form may be found at the back of this publication

Table 3.1

Value-added at factor cost (million ECU)

	1992	t / t-1 (%)	1993	t / t-1 (%)	1994	t / t-1 (%)	1995	t / t-1 (%)	1996	t / t-1 (%)
EU-15	**46,068**	**0.5**	**43,851**	**-4.8**	**47,314**	**7.9**	**49,414**	**4.4**	**49,310**	**-0.2**
EUR11	**39,931**	**2.1**	**37,849**	**-5.2**	**40,375**	**6.7**	**42,389**	**5.0**	**42,181**	**-0.5**
B	:	:	:	:	:	:	:	:	:	:
DK	699	5.1	697	-0.2	766	9.8	**866**	**13.1**	**876**	**1.1**
D	**13,332**	**6.3**	**13,650**	**2.4**	14,674	7.5	**15,393**	**4.9**	15,377	**-0.1**
EL	**278**	**82.0**	279	0.4	**293**	**5.1**	**326**	**11.2**	**360**	**10.5**
E	**5,693**	**-2.2**	4,713	-17.2	5,130	8.8	**5,543**	**8.1**	**5,591**	**0.9**
F	6,355	-2.1	6,169	-2.9	6,648	7.8	**6,940**	**4.4**	**6,639**	**-4.3**
IRL	304	-8.5	340	11.8	**392**	**15.4**	**385**	**-1.7**	**437**	**13.5**
I	8,115	4.0	6,805	-16.1	6,807	0.0	**6,818**	**0.2**	**7,284**	**6.8**
L	:	:	:	:	:	:	:	:	:	:
NL	1,440	5.4	1,505	4.5	1,678	11.5	**1,758**	**4.7**	**1,753**	**-0.3**
A	:	:	:	:	:	:	:	:	:	:
P	**1,112**	**8.1**	1,135	2.1	**1,128**	**-0.6**	**1,237**	**9.7**	**1,298**	**4.9**
FIN	530	-31.4	449	-15.3	533	18.7	**605**	**13.4**	**592**	**-2.2**
S	836	-16.3	677	-19.0	644	-4.8	**775**	**20.2**	**836**	**7.9**
UK	**4,324**	**-12.0**	**4,349**	**0.6**	5,236	20.4	**5,059**	**-3.4**	**5,058**	**0.0**

Source: eurostat

Table 3.2

Production in constant prices (million ECU)

	1992	t / t-1 (%)	1993	t / t-1 (%)	1994	t / t-1 (%)	1995	t / t-1 (%)	1996	t / t-1 (%)
EU-15	**107,840**	**0.2**	**103,705**	**-3.8**	**109,199**	**5.3**	**113,085**	**3.6**	**111,095**	**-1.8**
EUR11	**93,758**	**1.3**	**89,442**	**-4.6**	**93,781**	**4.9**	**97,370**	**3.8**	**95,950**	**-1.5**
B	**3,529**	**2.1**	**3,447**	**-2.3**	3,627	5.2	3,897	7.4	**3,270**	**-16.1**
DK	1,416	0.8	1,340	-5.3	1,467	9.4	**1,579**	**7.6**	**1,575**	**-0.2**
D	**29,040**	**3.7**	**28,383**	**-2.3**	29,394	3.6	**29,670**	**0.9**	**30,752**	**3.6**
EL	**916**	**0.3**	946	3.3	**994**	**5.1**	**1,062**	**6.9**	**1,125**	**5.9**
E	**14,942**	**2.3**	13,645	-8.7	14,658	7.4	**15,577**	**6.3**	**15,172**	**-2.6**
F	15,186	-4.3	14,029	-7.6	15,005	7.0	**15,354**	**2.3**	**14,563**	**-5.1**
IRL	:	:	:	:	:	:	:	:	:	:
I	19,616	3.4	18,443	-6.0	18,907	2.5	**20,339**	**7.6**	**19,601**	**-3.6**
L	:	:	:	:	:	:	:	:	:	:
NL	3,187	0.6	3,046	-4.4	3,282	7.8	**3,268**	**-0.4**	**3,322**	**1.6**
A	3,801	-0.9	3,765	-0.9	3,979	5.7	**4,169**	**4.8**	**4,119**	**-1.2**
P	**2,079**	**-2.0**	**2,352**	**13.2**	**2,398**	**2.0**	**2,537**	**5.8**	**2,579**	**1.7**
FIN	1,398	-17.2	1,297	-7.2	1,378	6.2	**1,398**	**1.5**	**1,370**	**-2.0**
S	1,833	-11.7	1,765	-3.7	1,689	-4.3	**1,900**	**12.5**	**1,783**	**-6.1**
UK	**9,918**	**-7.0**	**10,213**	**3.0**	11,269	10.3	**11,175**	**-0.8**	**10,662**	**-4.6**

Source: eurostat

Number of persons employed & labour costs

Table 3.3

Number of persons employed (units)

	1992	t / t-1 (%)	1993	t / t-1 (%)	1994	t / t-1 (%)	1995	t / t-1 (%)	1996	t / t-1 (%)
EU-15	1,195,437	-3.2	1,105,801	-7.5	1,077,149	-2.6	1,075,140	-0.2	1,034,408	-3.8
EUR11	997,892	-2.1	922,333	-7.6	893,320	-3.1	892,001	-0.1	:	:
B	30,886	-1.3	29,958	-3.0	29,587	-1.2	30,749	3.9	28,724	-6.6
DK	14,184	-3.3	13,825	-2.5	14,407	4.2	14,754	2.4	:	:
D	322,291	-0.8	299,006	-7.2	280,050	-6.3	281,621	0.6	269,506	-4.3
EL	16,333	-5.5	15,695	-3.9	14,978	-4.6	14,900	-0.5	15,189	1.9
E	180,214	-3.8	156,645	-13.1	154,353	-1.5	153,203	-0.7	146,417	-4.4
F	140,470	-2.3	131,231	-6.6	130,577	-0.5	130,597	0.0	128,143	-1.9
IRL	:	:	:	:	:	:	:	:	:	:
I	162,821	0.0	155,666	-4.4	148,519	-4.6	146,679	-1.2	144,910	-1.2
L	:	:	:	:	:	:	:	:	:	:
NL	29,374	0.8	28,452	-3.1	27,855	-2.1	27,743	-0.4	27,315	-1.5
A	35,231	-2.6	33,271	-5.6	33,459	0.6	32,870	-1.8	31,548	-4.0
P	69,802	-5.5	64,586	-7.5	65,607	1.6	64,939	-1.0	60,805	-6.4
FIN	15,092	-16.8	12,050	-20.2	11,757	-2.4	12,006	2.1	:	:
S	19,352	-14.1	17,465	-9.8	15,296	-12.4	15,577	1.8	14,763	-5.2
UK	147,676	-8.4	136,483	-7.6	139,148	2.0	137,908	-0.9	128,112	-7.1

Source: eurostat

Table 3.4

Labour costs (million ECU)

	1991	t / t-1 (%)	1992	t / t-1 (%)	1993	t / t-1 (%)	1994	t / t-1 (%)	1995	t / t-1 (%)
EU-15	30,822	6.3	31,501	2.2	29,919	-5.0	29,975	0.2	30,851	2.9
EUR11	26,043	7.8	27,079	4.0	25,917	-4.3	25,826	-0.4	26,744	3.6
B	:	:	:	:	:	:	:	:	:	:
DK	446	4.4	449	0.6	437	-2.7	460	5.3	500	8.5
D	9,107	8.4	9,768	7.3	9,956	1.9	9,892	-0.6	10,500	6.2
EL	262	3.1	267	1.8	268	0.5	272	1.5	291	6.9
E	3,613	11.7	3,767	4.3	3,071	-18.5	2,915	-5.1	3,030	3.9
F	4,091	3.6	4,233	3.5	4,209	-0.6	4,338	3.1	4,492	3.6
IRL	197	1.4	199	1.1	199	0.1	210	5.5	207	-1.7
I	4,929	9.7	4,980	1.0	4,312	-13.4	4,123	-4.4	3,838	-6.9
L	:	:	:	:	:	:	:	:	:	:
NL	819	:	796	-2.8	893	12.1	919	3.0	995	8.2
A	1,104	4.8	1,195	8.2	1,230	3.0	1,282	4.2	1,366	6.6
P	638	22.0	715	12.1	650	-9.0	670	3.1	707	5.4
FIN	499	-12.4	354	-28.9	266	-24.9	297	11.5	335	12.7
S	696	0.1	640	-8.1	492	-23.1	444	-9.8	472	6.4
UK	3,374	-2.7	3,066	-9.1	2,804	-8.6	2,972	6.0	2,844	-4.3

Source: eurostat

Table 3.5

Extra-EU-15 exports (million ECU)

	1992	t / t-1 (%)	1993	t / t-1 (%)	1994	t / t-1 (%)	1995	t / t-1 (%)	1996	t / t-1 (%)
EU-15	8,292	1.0	9,153	10.4	10,610	15.9	11,449	7.9	12,622	10.3
B/L	200	-10.0	282	41.0	356	26.6	399	11.9	422	5.8
DK	101	7.0	133	31.6	128	-4.3	132	3.4	190	43.8
D	1,700	-3.7	1,895	11.5	2,140	12.9	2,348	9.7	2,419	3.0
EL	162	20.5	167	2.8	230	37.5	197	-14.4	266	35.2
E	854	13.0	1,007	18.0	1,165	15.7	1,319	13.2	1,439	9.1
F	1,228	2.8	1,296	5.6	1,414	9.1	1,537	8.7	1,668	8.5
IRL	72	-15.1	79	10.9	92	16.0	83	-9.9	116	40.2
I	2,159	-0.9	2,305	6.8	2,766	20.0	2,946	6.5	3,407	15.6
NL	141	5.6	172	22.1	202	17.5	212	4.9	224	5.9
A	516	4.0	510	-1.3	597	17.1	602	1.0	628	4.3
P	147	22.6	147	-0.1	184	25.4	192	4.5	201	4.4
FIN	87	9.4	121	39.0	156	29.0	134	-14.1	166	24.0
S	167	3.5	168	0.8	219	30.1	233	6.5	263	13.1
UK	760	-3.3	871	14.5	963	10.6	1,115	15.8	1,214	8.8

Source: eurostat

Table 3.6

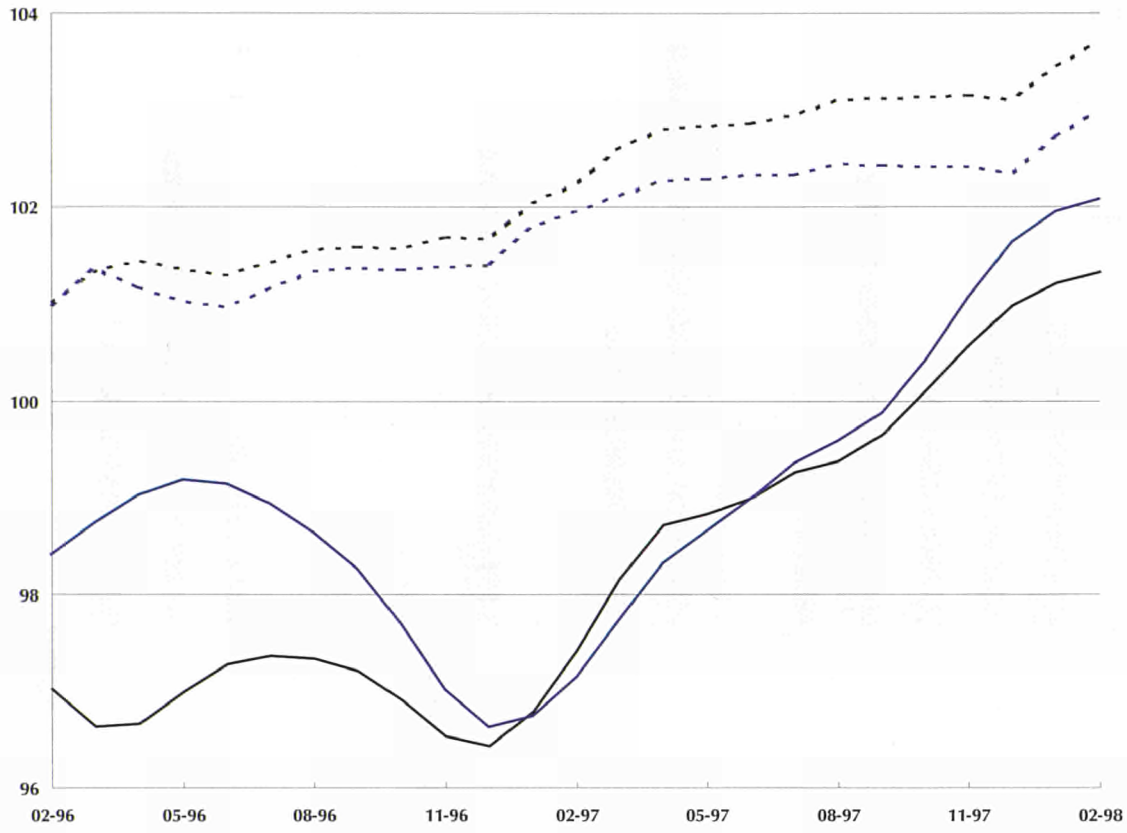
Extra EU-15 imports (million ECU)

	1992	t / t-1 (%)	1993	t / t-1 (%)	1994	t / t-1 (%)	1995	t / t-1 (%)	1996	t / t-1 (%)
EU-15	3,920	9.2	4,052	3.3	4,461	10.1	4,953	11.0	5,068	2.3
B/L	180	2.0	218	21.0	227	3.9	256	12.7	257	0.4
DK	68	-2.9	68	0.3	76	11.9	93	22.7	96	2.5
D	1,322	13.6	1,518	14.8	1,737	14.5	1,945	12.0	1,861	-4.3
EL	66	17.5	72	10.2	71	-1.5	89	24.7	112	26.0
E	261	2.4	172	-34.1	159	-7.9	208	31.2	246	18.0
F	321	8.5	350	9.3	397	13.3	450	13.3	462	2.6
IRL	34	20.8	39	12.6	44	13.0	44	1.1	49	10.9
I	467	7.9	386	-17.3	397	2.7	478	20.4	462	-3.4
NL	268	19.3	294	9.5	312	6.2	324	3.8	316	-2.5
A	141	29.2	166	17.3	211	27.5	200	-5.4	278	39.1
P	18	30.4	23	27.2	19	-19.2	24	28.6	25	6.7
FIN	50	-12.5	50	0.0	55	11.1	62	11.4	66	8.0
S	189	-9.7	153	-19.3	164	7.3	167	2.0	180	7.5
UK	535	7.2	544	1.7	593	9.1	614	3.6	661	7.6

Source: eurostat

Production (trend cycle) & producer price indices

Figure 3.9



Production and producer price indices (1995 = 100)

EU-15 production index
EU-15 producer price index
EUR11 production index
EUR11 producer price index

Source: eurostat

Table 3.7

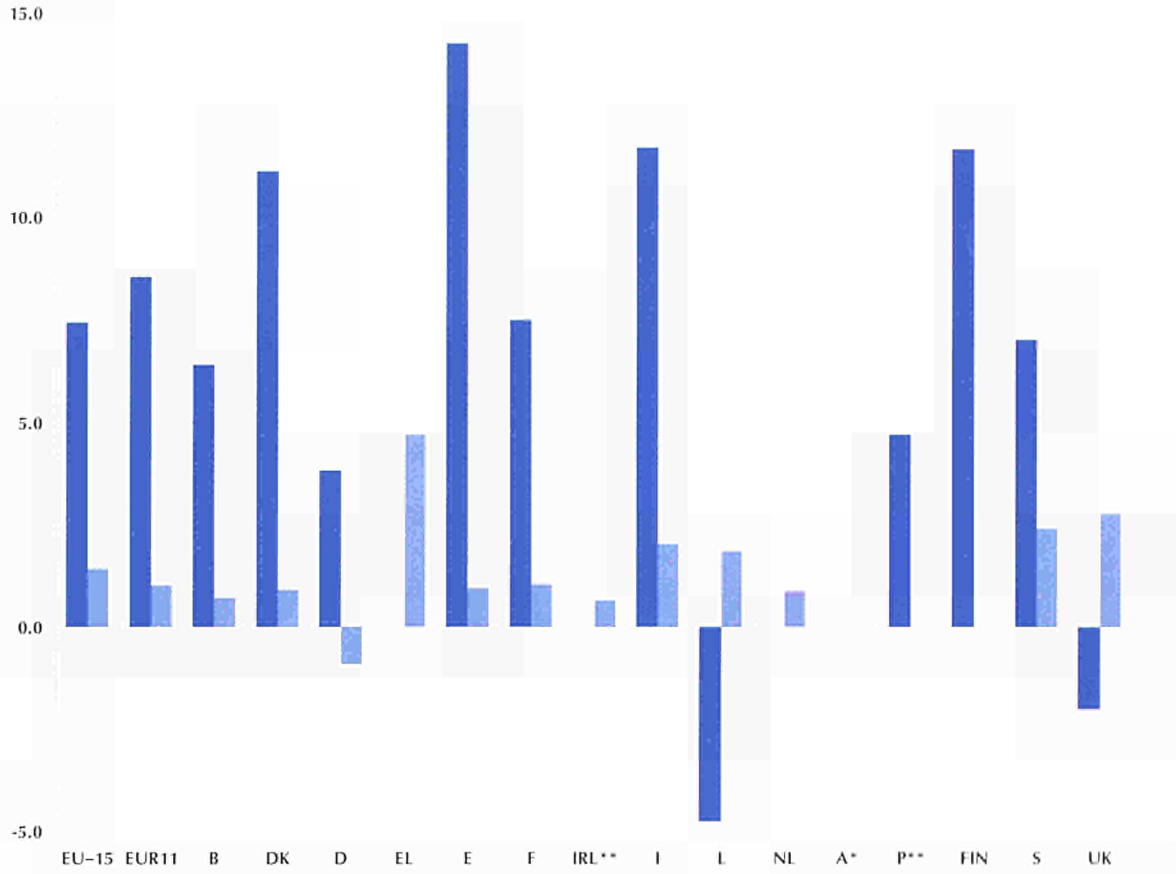
	Latest 3 months available			Production index t / t-1	Production index t / t-4	Latest month available	Producer price index t / t-3	Producer price index t / t-12
EU-15	12-97	⇨	02-98	1.1	7.4	02-98	0.5	1.4
B	12-97	⇨	02-98	0.8	6.4	02-98	0.5	0.7
DK	12-97	⇨	02-98	4.4	11.1	02-98	-0.7	0.9
D	12-97	⇨	02-98	2.1	3.8	02-98	0.1	-0.9
EL	11-97	⇨	01-98	1.0	3.1	02-98	0.4	4.7
E	12-97	⇨	02-98	2.8	14.3	02-98	0.8	1.0
F	12-97	⇨	02-98	1.3	7.5	02-98	0.8	1.0
IRL	08-97	⇨	10-97	2.3	18.9	01-98	0.0	0.3
I	12-97	⇨	02-98	0.7	11.7	02-98	0.3	2.0
L	12-97	⇨	02-98	-4.7	-4.8	02-98	1.0	1.8
NL	10-97	⇨	12-97	1.5	4.4	02-98	0.9	0.9
A	11-97	⇨	01-98	3.8	11.0		:	:
P	11-97	⇨	01-98	0.8	5.1	12-97	0.6	1.3
FIN	12-97	⇨	02-98	3.0	11.7	12-97	0.6	3.5
S	12-97	⇨	02-98	1.0	7.0	02-98	0.7	2.4
UK	12-97	⇨	02-98	-1.4	-2.0	02-98	0.5	2.8
Japan	07-97	⇨	09-97	-0.8	0.8	10-97	-0.2	1.3
USA	11-97	⇨	01-98	0.7	4.5	01-98	0.3	1.3

Production and producer price indices: growth rates (%)

Source: eurostat

Figure 3.10

Production and producer price indices: growth rate, three months compared to the same three months of the previous year, 12-97 to 02-98 (%)

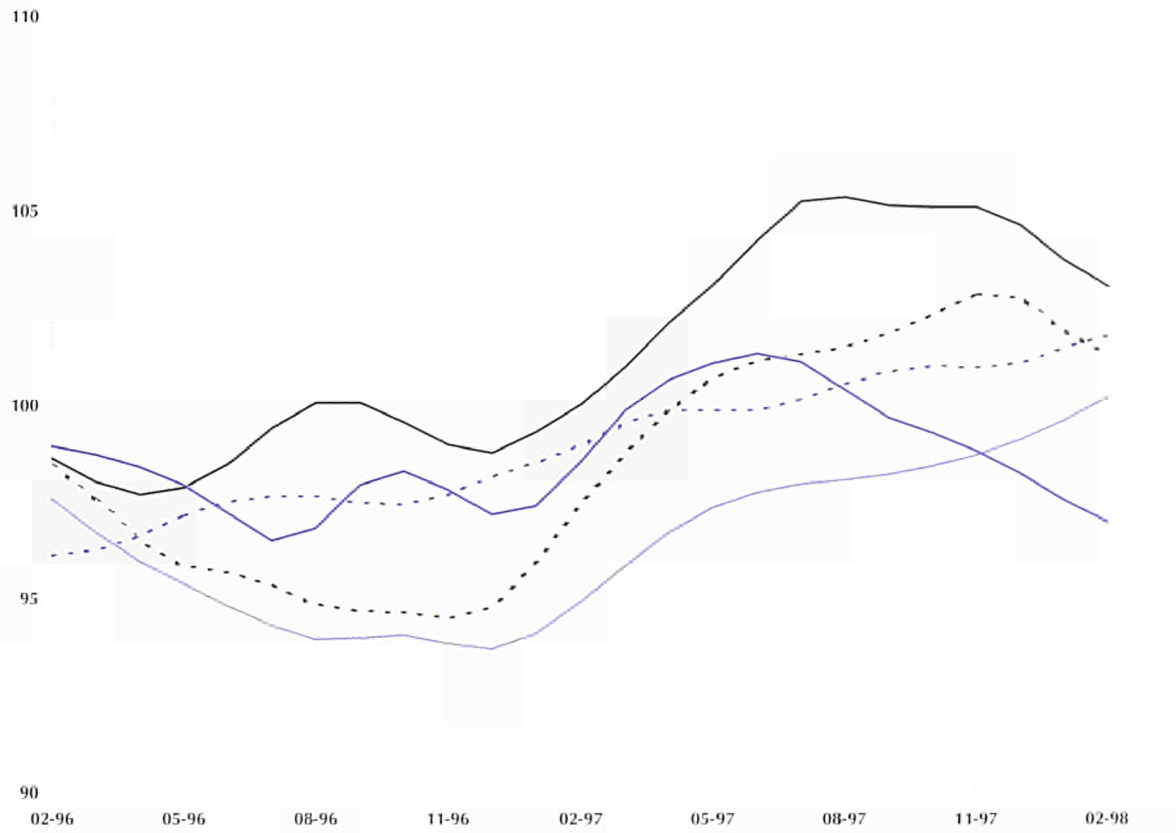


Production
Producer price index

Source: eurostat

Figure 3.11

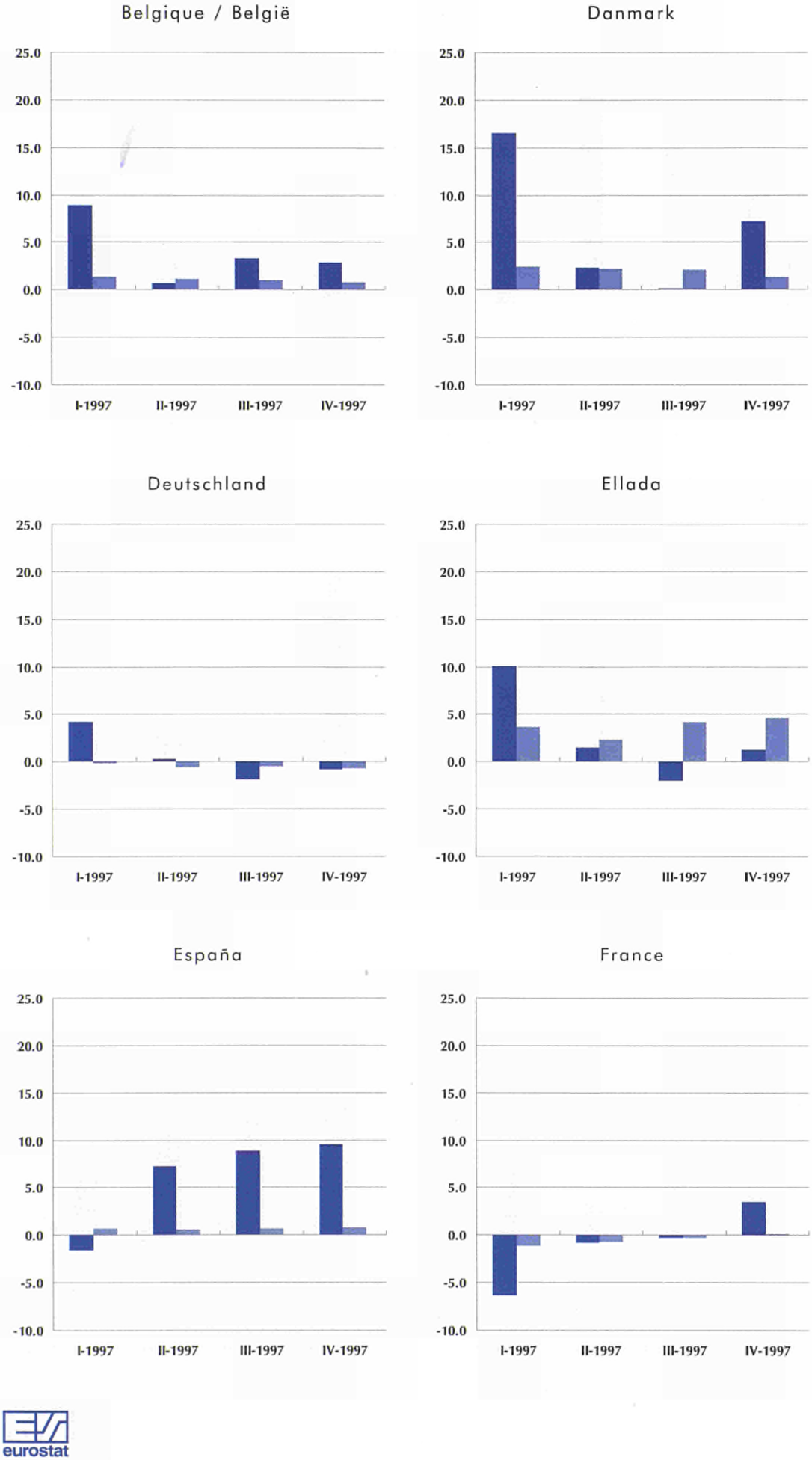
EU-15 production index for individual groups, trend cycle (1995 = 100)



Glass
Ceramic goods
Ceramic tiles and flags
Bricks and tiles
Cement, lime and plaster

Source: eurostat

Figure 3.12

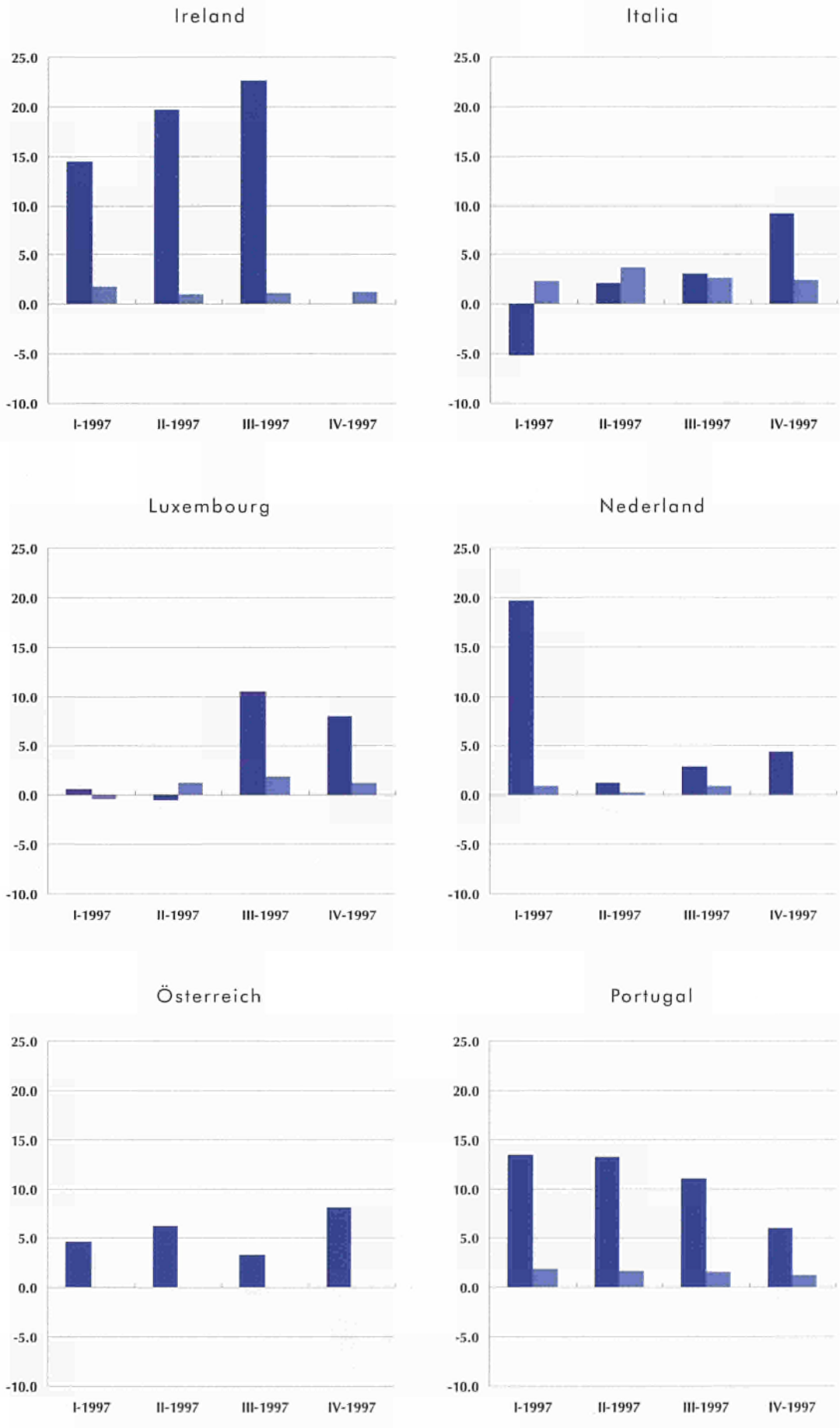


Production and producer price indices: growth rate, three months compared to the same three months of the previous year (%)

Source: eurostat

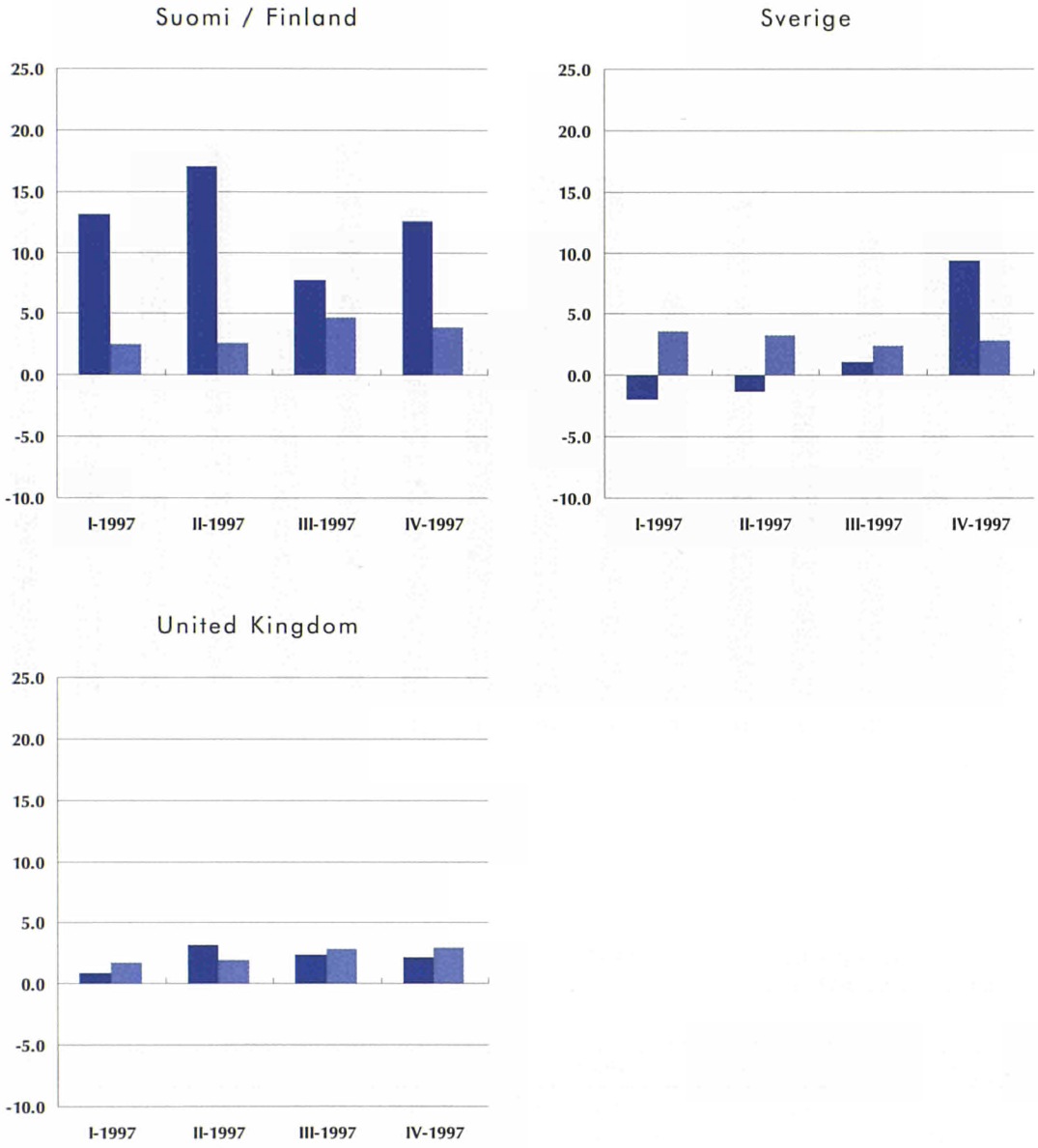
Figure 3.12

Production and producer price indices: growth rate, three months compared to the same three months of the previous year (%)



Source: eurostat

Figure 3.12



Production and producer price indices: growth rate, three months compared to the same three months of the previous year (%)

Production index

Producer price index

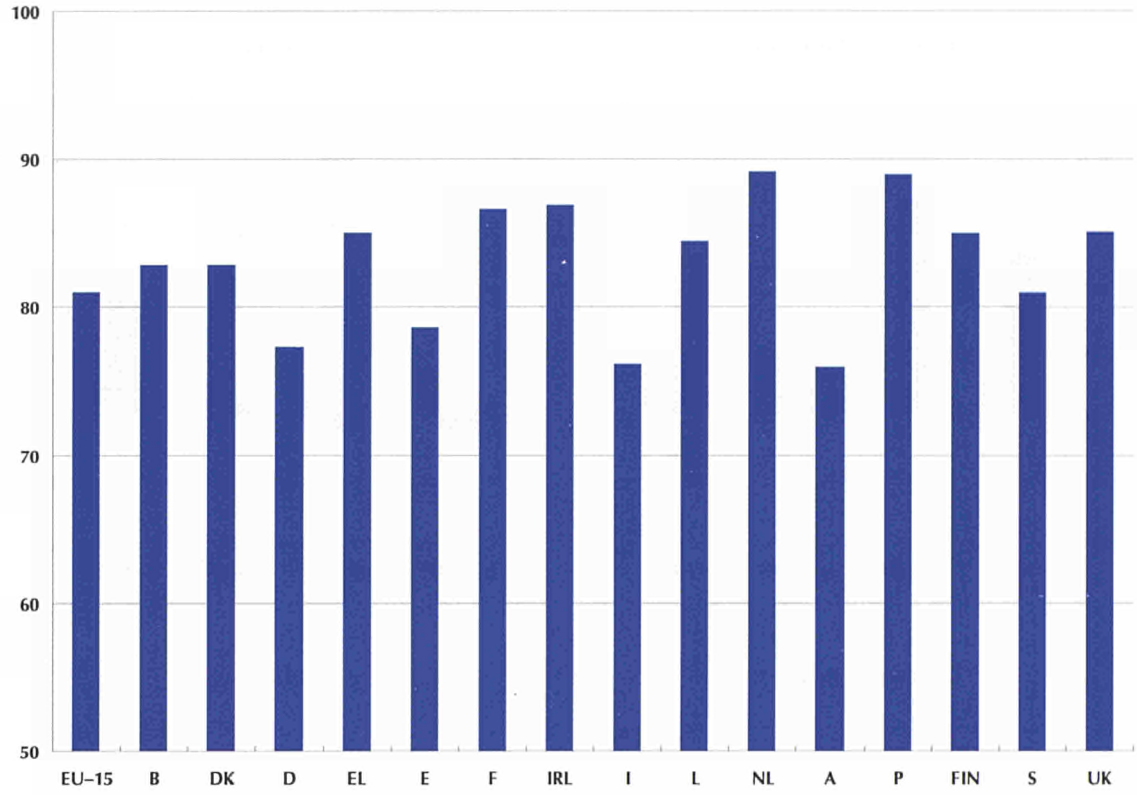
Further information - the production and producer price indices:

The indices of production are adjusted in two stages. Firstly, account is taken of the variation in the number of working days in the month. The national Statistical Offices provide Eurostat with these series (except Denmark, France and Spain). Secondly, for EU-15 and most of the Member States a correction is made using seasonal adjustment with TRAMO / SEATS, a method developed by Professor Maravall and V. Gomez. For France, Finland, Sweden and the United Kingdom, the indices are adjusted by the national statistical offices themselves. For Germany, the trend and seasonally adjusted figures are calculated by the German NSO.
The index of producer prices shows (in the national currency of the Member State in question) changes in the ex-works selling prices of all products sold on the domestic market. Since we deal with producer prices, imports are not included in these price indices. Producer price indices are not seasonally adjusted.
Full methodological notes may be found on page 73.

Source: eurostat

Figure 3.13

Capacity utilisation rates, 01-98 (%)



Source: DG II, Business Survey

Table 3.8

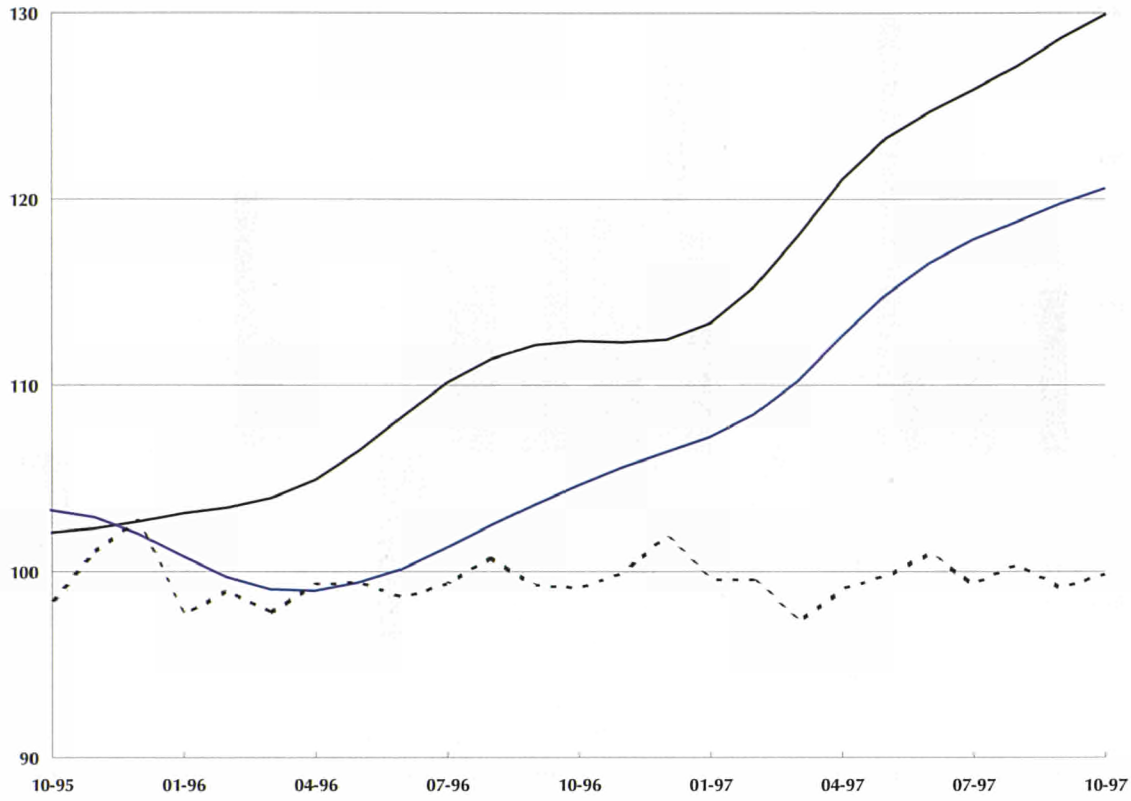
Capacity utilisation rates (%)

Growth rate: latest month, t / t-12 (%)	04-97	07-97	10-97	01-98
EU–15	3.8	78.6	80.4	80.5	81.0
B	5.2	79.0	81.8	88.9	82.9
DK	10.5	71.0	80.0	79.0	82.9
D	4.0	77.5	78.7	78.3	77.3
EL	1.6	81.3	93.8	83.5	85.0
E	4.0	75.2	75.7	75.3	78.6
F	8.1	81.0	85.4	84.3	86.6
IRL	1.2	86.3	88.9	81.7	86.9
I	2.3	72.8	76.7	76.3	76.2
L	3.0	84.4	87.3	84.9	84.5
NL	3.2	88.4	87.5	89.5	89.2
A	8.5	77.0	80.5	82.3	76.0
P	6.2	87.0	89.6	92.2	89.0
FIN	4.3	80.6	86.0	87.0	85.0
S	5.2	77.0	80.0	:	81.0
UK	1.1	85.3	82.6	84.2	85.1

Source: DG II, Business Survey

Foreign trade indices (trend cycle)

Figure 3.14



EU-15 foreign trade indices in ECU terms (1995 = 100)

Source: eurostat

Table 3.9

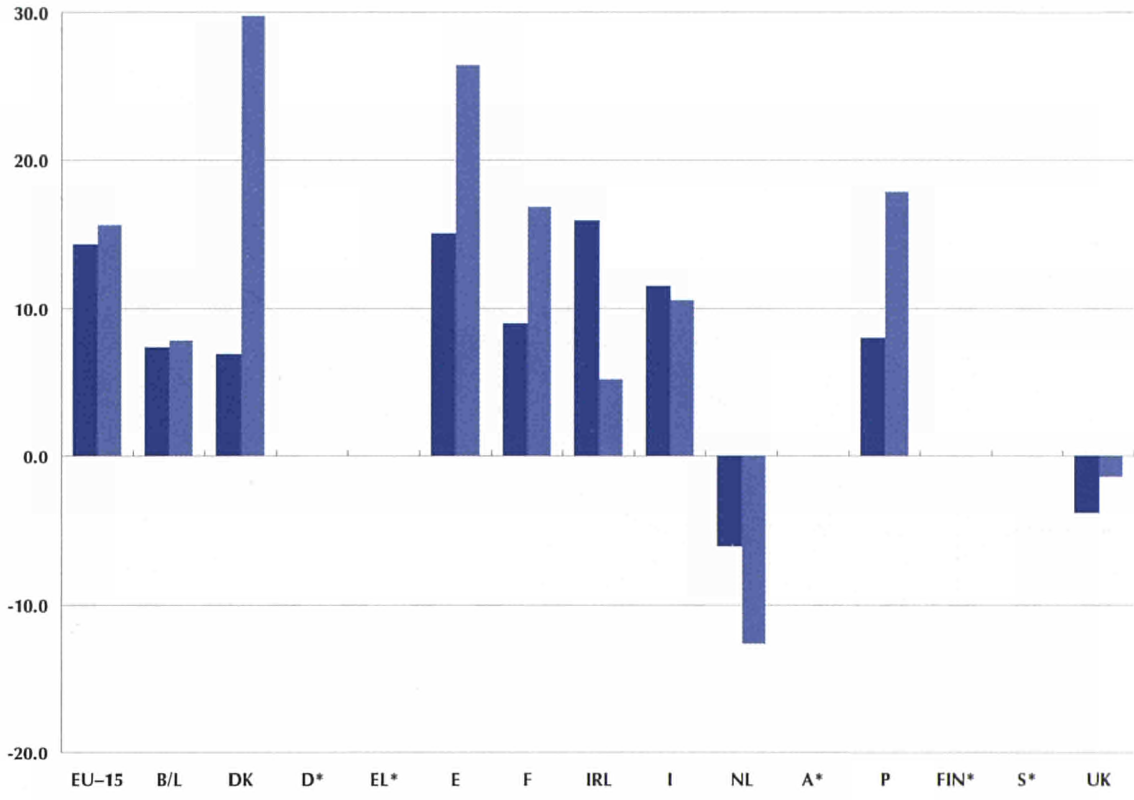
	Latest 3 months available			Exports Value	Exports Volume	Imports Value	Imports Volume	Terms of trade
EU–15	08-97	⇨	10-97	3.2	1.6	2.9	1.1	-0.2
B / L	09-97	⇨	11-97	-5.3	-7.7	-3.4	-5.4	0.5
DK	09-97	⇨	11-97	-8.9	-5.6	1.7	-2.1	-3.3
D	07-97	⇨	09-97	3.4	2.9	0.6	-0.8	-1.8
EL	07-97	⇨	09-97	2.1	0.9	-4.6	-3.1	4.6
E	09-97	⇨	11-97	3.7	2.8	9.2	8.8	2.6
F	09-97	⇨	11-97	1.4	1.1	4.1	4.2	-0.9
IRL	08-97	⇨	10-97	4.0	-0.8	1.7	-1.2	5.1
I	08-97	⇨	10-97	2.9	2.1	1.7	2.0	-2.6
NL	08-97	⇨	10-97	-1.8	-1.3	-3.6	-3.2	-3.5
A		⇨		:	:	:	:	:
P	08-97	⇨	10-97	2.2	1.2	4.9	3.8	-1.4
FIN		⇨		:	:	:	:	:
S		⇨		:	:	:	:	:
UK	09-97	⇨	11-97	0.0	-0.5	0.3	1.2	1.3

Foreign trade indices (value indices are in ECU terms): growth rate, three months compared to the previous three months (%)

Source: eurostat

Figure 3.15

Foreign trade indices in ECU terms: growth rate, three months compared to the same three months of the previous year, 08-97 to 10-97 (%)



Export value
Import value

Source: eurostat

Table 3.10

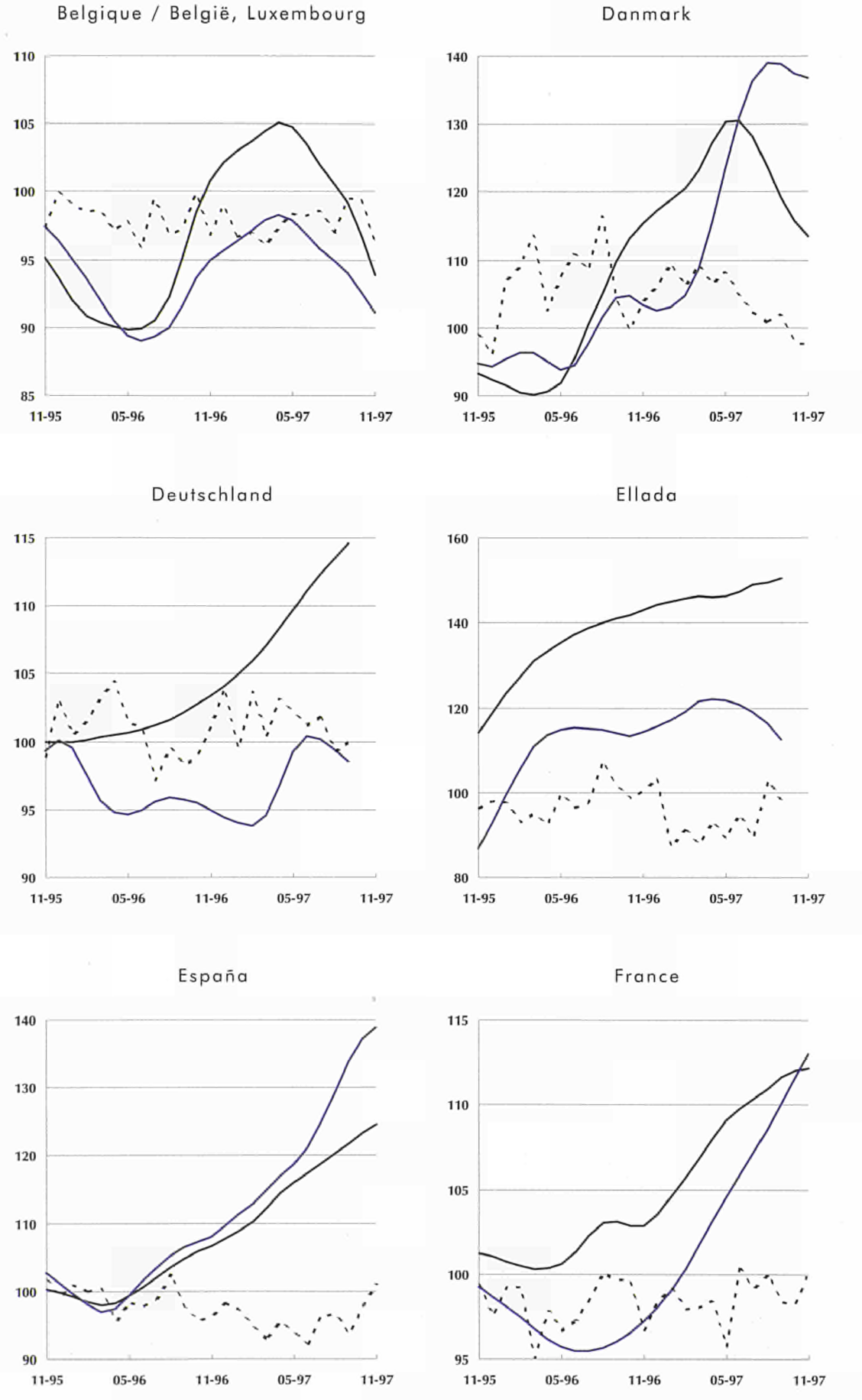
Foreign trade indices (value indices are in ECU terms): growth rates (%)

	Latest 3 months available			Exports Value	Exports Volume	Imports Value	Imports Volume	Terms of trade
EU-15	08-97	⇨	10-97	14.3	8.5	15.7	9.9	0.1
B / L	09-97	⇨	11-97	-2.7	-7.3	-3.6	-7.8	0.4
DK	09-97	⇨	11-97	-1.9	-10.2	29.9	15.0	-3.4
D	07-97	⇨	09-97	14.3	10.8	2.7	1.7	2.0
EL	07-97	⇨	09-97	17.1	1.0	8.5	-11.1	-5.3
E	09-97	⇨	11-97	16.5	13.6	29.1	27.3	0.9
F	09-97	⇨	11-97	10.1	9.7	16.9	16.6	0.3
IRL	08-97	⇨	10-97	15.9	-1.9	5.2	1.0	12.8
I	08-97	⇨	10-97	11.5	8.8	10.6	8.2	0.1
NL	08-97	⇨	10-97	-6.1	-7.7	-12.7	-18.8	-5.2
A		⇨		:	:	:	:	:
P	08-97	⇨	10-97	8.0	4.7	17.9	12.1	-2.8
FIN		⇨		:	:	:	:	:
S		⇨		:	:	:	:	:
UK	09-97	⇨	11-97	-1.5	-0.6	2.6	8.7	5.0

Source: eurostat

Figure 3.16

Foreign trade indices in ECU terms (1995 = 100)

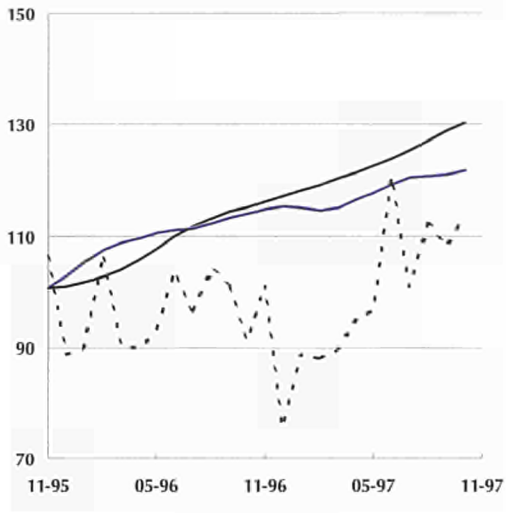


Source: eurostat

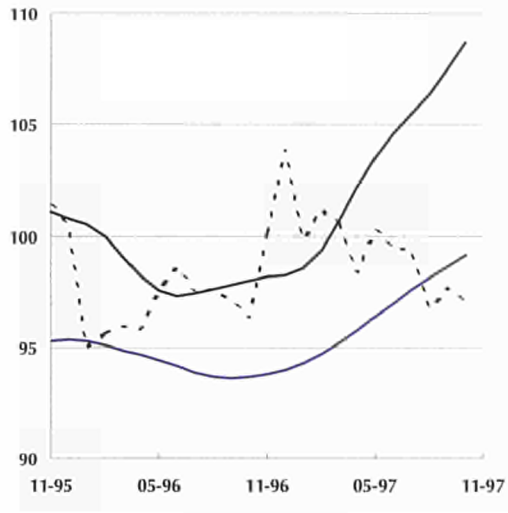
Figure 3.16

Foreign trade indices in ECU terms (1995 = 100)

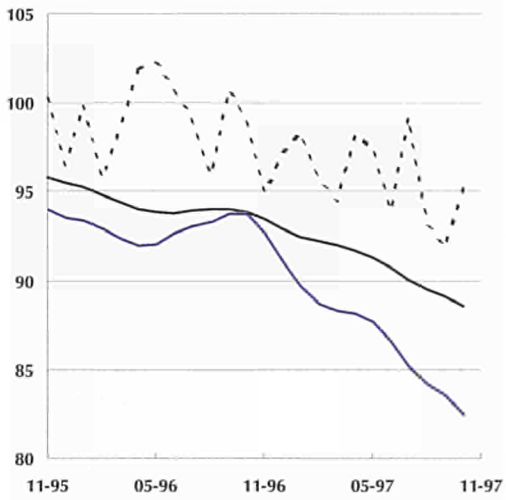
Ireland



Italia



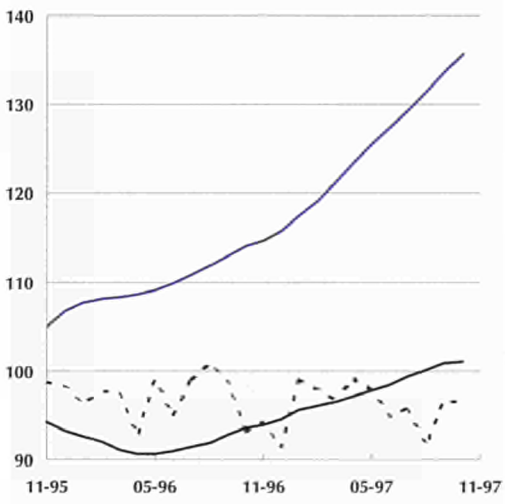
Nederland



Österreich

Not available

Portugal



Suomi / Finland

Not available

Export value index ——

Import value index ——

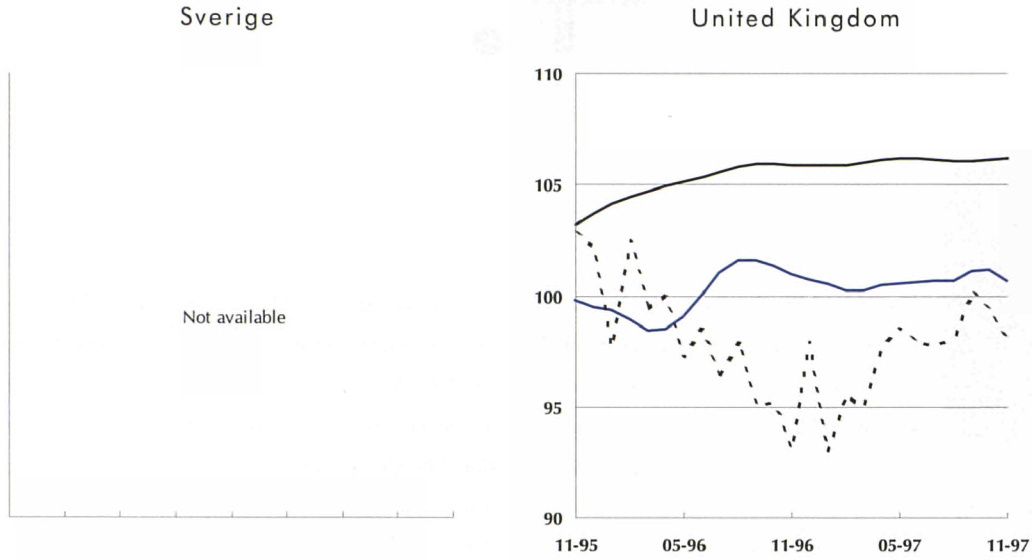
Terms of trade - - - - -

Source: eurostat

Foreign trade indices (trend cycle)

Figure 3.16

Foreign trade indices
in ECU terms
(1995 = 100)



Export value index

Import value index

Terms of trade

Further information - the foreign trade indices:

For the indices of imports and exports, foreign trade data of industrial products (following the nomenclature of the Harmonised System) were grouped according to the industrial NACE Rev.1 activity to which they belong. This grouping of products causes inevitably certain inaccuracies which can reduce the reliability of these foreign trade series. The indices for EU-15 refer only to extra-Union trade, the indices for Member States reflect also intra-Union trade.
For more extensive details of the methodology of short-term indicators please refer to the Eurostat publication "Methodology of Industrial Short-term Indicators" - CA-97-96-079-EN-C.
Full methodological notes for this publication may be found on page 73.

Source: eurostat

4. Data diskette

The files on the diskette are broken down by industrial branch. Each file contains all countries and indicators for a particular industry. The files have the following format: country, indicator, branch, periodicity, datatype, flag, data,

e.g. EF;PROD;B0020;M;S;*;85.14164...

Step by step guide to using the data on the diskette:

1. Copy the file MPEI1.EXE (English number format) or MPEI2.EXE (continental European number format) from the diskette to a directory on your hard disk (usually C:\....).

2. If in WINDOWS, switch to the File Manager and double-click on the file. The files will self-extract themselves (into the directory from which the program is run). You may need to perform WINDOW - REFRESH <F5> to see the files once the procedure has finished.

3. If in DOS move to the directory you placed the file in (for example, C:\DATA>) and then type the name of the file (MPEI1.EXE or MPEI2.EXE) and press <ENTER>, the files will self-extract and be placed in the same directory as the .EXE file.

4. The files are simple, plain text files, with the .TXT extension. The files are semi-colon separated (;) and use speech marks as a delimiter.

5. It should be easy to import/open the data-files into any standard spreadsheet or database package.

6. There is a file for each branch available at the NACE 2-digit level, codes are given in the README.TXT file supplied on the diskette.

7. Furthermore, there are two files called STRUCT1.EXE (English number format) and STRUCT2.EXE (continental European number format) with the structural data, for the industry covered in section 3 of the publication. It is also detailed in the README.TXT file.

If you would like to receive the data by e-mail as soon as it is extracted, please send a message to Raffaella Turci (raffaella.turci@eurostat.cec.be) requesting the data.

Divisions:

B0020	Total Industry excluding Construction
B0040	Intermediate Goods Industry
B0050	Capital Goods Industry
B0060	Durable Consumer Goods Industry
B0070	Non-Durable Consumer Goods Industry
B1000	Mining of Coal and Lignite; Extraction of Peat
B1100	Extraction of Crude Petroleum and Natural Gas; Service Activities Incidental to Oil and Gas Extraction, excluding Surveying
B1200	Mining of Uranium and Thorium Ores
B1500	Food and Drink Industry
B1600	Tobacco
B1700	Manufacture of Textiles
B1800	Clothing Industry
B1900	Leather and Shoe Industry
B2000	Manufacture of Wood and Products of Wood
B2100	Paper Industry
B2200	Publishing, Printing, Reproduction of Recorded Media
B2300	Manufacture of Coke, Refined Petroleum Products, Nuclear Fuel
B2400	Chemical Industry
B2500	Manufacture of Rubber and Plastic Products
B2600	Manufacture of other Non-Metallic Mineral Products
B2700	Manufacture of Basic Metals
B2800	Manufacture of Fabricated Metal Products
B2900	Mechanical Engineering
B3000	Manufacture of Office Machinery, Computers
B3100	Manufacture of Electrical Machinery
B3200	Manufacture of Radio, TV and Communication Equipment
B3300	Manufacture of Medical, Precision and Optical Instruments
B3400	Manufacture of Motor Vehicles
B3500	Manufacture of Other Transport Equipment
B3600	Manufacture of Furniture; Manufacturing not elsewhere classified
B4000	Electricity, Gas, Steam and Hot Water Supply
B4500	Construction

5. Methodological notes

Industry classification system

The economic activities used in this publication are defined in the revised Classification of Economic Activities within the European Communities, NACE Rev.1. This classification was laid down in a Council Regulation in 1990 (OJ L293 24th October 1990). It should be noted that many series before 1990 and a large amount of annual data even between 1990 and now had to be converted from the old classification NACE 1970. This estimation process can reduce the reliability of the data. Data have been based on 1995 = 100, using weights from the annual surveys of 1995.

Main industrial groupings that are used in Section 2 of this publication have the following definitions in terms of NACE Rev.1.

Total industry

C + D + E,
i.e. mining, manufacturing and energy supply

Intermediate goods industries

13.1, 13.2, 14.1-14.5, 15.6, 15.7, 17.1-17.3, 20.1-20.5, 21.1, 21.2, 24.1-24.3, 24.6, 24.7, 25.1, 25.2, 26.1-26.8, 27.1-27.5, 28.4-28.7, 31.2-31.6, 32.1, 34.3, 37.1, 37.2

Capital goods industries

28.1-28.3, 29.1-29.6, 30.0, 31.1, 32.2, 33.1-33.3, 34.1, 34.2, 35.1-35.3

Durable consumer goods industries

29.7, 32.3, 33.4, 33.5, 35.4, 35.5, 36.1-36.3

Non-durable consumer goods industries

15.1-15.5, 15.8-16.0, 17.4-17.7, 18.1-18.3, 19.1-19.3, 22.1-22.3, 24.4, 24.5, 36.4-36.6

If Member States dispose of more detailed data series at the 4 digit level of NACE Rev.1, a more elaborate definition at this level of disaggregation is used.

Statistical sources

Most of the data in this publication is harmonised data supplied to Eurostat by the EU Member States. The exceptions are:

1) the capacity utilisation series which come from the business surveys carried out on behalf of the Directorate General for Economic Affairs of the Commission (DG II);
2) the estimates for the latest years' structural data, which are supplied by sub-contractors to Eurostat;
3) the data for the USA and Japan, which are supplied by the OECD.

Every effort has been made to include data for the EU-15 Member States. The indices from 1991 onwards are on a post-unification basis and include East-Germany.

Short term indicators

The index of production measures changes in the volume of the gross value added created by industry, the branch indices being aggregated by means of a system of weighting according to gross value added at factor cost. The indices are adjusted to take account of the varying number of working days in the month.

The index of producer prices shows (in national currencies) the changes in the ex-works selling prices of all products sold on the domestic markets of the various countries. The EU indices refer to overall weighted price changes. There are not yet indices for Austria. No seasonal adjustment is carried out on these indices.

Sometimes statistics are collected at the product level. This may be the case for prices, production, imports and exports. Thus, data is not strictly speaking following an activity classification (NACE Rev.1) but a product classification (Classification of Products by Activity "CPA"). CPA, was laid down in a Council Regulation in 1993. It is a six digit classification which for the 2-digit, 3-digit and 4-digit level is identical to NACE Rev.1 in its coding.

For the indices of imports and exports, external trade data of 9,000 industrial products were grouped according to the industrial NACE Rev.1 activity to which they belong. This grouping can cause certain inaccuracies in the data, which may reduce the reliability of foreign trade series.

The value indices are all in ECU terms. The indices for the EU refer only to extra-Union trade, the indices for Member States reflect also intra-Union trade.

For further details of the methodology employed, please refer to the Eurostat publication "Methodology of Industrial Short-term Indicators" CA-97-96-079-EN-C.

Seasonal adjustment

All series, except prices and capacity utilisation, are seasonally adjusted with TRAMO / SEATS, a method developed by Professor Maravall and V. Gomez. For France, Finland, Sweden and the United Kingdom the indices are seasonally adjusted by the national statistical office. For Germany, the trend and seasonally adjusted figures for the production index are calculated by the national statistical office. Otherwise, Eurostat calculates the trend cycle, i.e. seasonally adjusted series, where additionally the irregular fluctuations have been excluded (using the program TRAMO / SEATS).

Growth rates

The changes which are given in the tables show three different growth rates. The first being for the latest three months data compared to the previous three months data - here the trend cycle is used. The second growth rate is for the latest three months data compared to the same three months of the previous year - here a series only adjusted for the number of working days is used. The third is a year on year growth rate for a particular month - here gross data for prices is used. Estimates are sometimes made to create a EU-15 or EUR11 total.

Graphs

The line graphs show the trend cycle. The bar graphs show the annual growth of the index, using a working day adjusted series. For Member States where just one month is missing (and not more), this missing value was estimated in order to bring the growth rate for all Member States up to the same date. This estimation is indicated by ** in the graph.

Structural data

Data for structural statistics are in current ECU unless otherwise stated. Data for value added at factor cost, production, labour costs and employment come from annual enquiries conducted by Member States involving all enterprises with 20 or more employees. The exceptions to this are Spain (local units of all sizes), Portugal (enterprises with 10 or more employees) and Finland (establishments employing 5 or more persons). The employment data relates to the number of persons employed, excluding home workers.

Estimates are not supplied to Eurostat by Member States for the smaller firms not covered by the enquiries, and hence the figures under-report the actual values. In certain industries this may be a serious problem in the interpretation of series, especially when comparing with other industries.

Gaps in Eurostat's data have been filled by estimates supplied by sub-contractors to Eurostat. Thus, EU-15 and EUR11 totals often contain estimates for missing countries. Estimates are shown in bold. Attention should be drawn to the fact that the data has switched to the NACE Rev.1 classification, this may result in revisions of data being made in the medium-term.

Annual foreign trade data comes from the COMEXT database. Statistical régime 4 (total trade) is used.

Signs and abbreviations

EUR11	Monetary union participating countries
B / L	Belgo-Luxembourg Economic Union
ECU	European currency unit
TRIAD	EU-15, Japan and the USA
Billion	thousand million
*	not available (in graphs)
:	not available (in tables)
**	estimation (in graphs)
data in bold	estimation (in tables)
1995 = 100	reference year

For more information on methodology, please contact Berthold Feldmann - tel: (352) 4301 34401 or e-mail: berthold.feldmann@eurostat.cec.be

6. The salt industry in Europe

6. The salt industry in Europe

The salt industry is represented at Community level by:

The European Salt Producers Association (ESPA)
M. Bernard Moinier
17, rue Daru
F - 75008 Paris
tel: (33) 1 47 66 52 90
fax: (33) 1 47 66 52 66
e-mail: bmoinier@eu-salt.com

Salt, a product with 14,000 uses

Sodium chloride is one salt among many, but because of the role of its two main functions, nutrition and preservation, have played in human development, it is now the salt. We consume some each day (a few grams), often without knowing it. We are familiar with it, it is on our table in all seasons and on the road in winter. Common, universal and cheap, salt has many properties. It lies at the heart of industrial development. In crystallised form, it serves not only to season food or make roads passable and safe in winter but also to produce chlorine and sodium. As a result, it is found in many applications downstream of electrolysis workshops, where saline solution is used in the manufacture of sodium carbonate. Because of its many and varied possible uses, salt is known in the United States "as a product with 14,000 uses". In these circumstances, it comes as no surprise that world production was above 180 million tonnes in 1996 (37 million tonnes for the European Union).

The product salt

The attributes of salt

As a mineral or electrolyte, salt has many attributes:

- ★ its properties (hygroscopic, bacteriostatic, soluble, good conductor) have long been known;
- ★ it is non-polluting and recyclable;
- ★ it is a low-cost product (in the selling price the cost of transport often exceeds the cost of the raw material);
- ★ it is an abundant and easily accessible resource.

Different ways of obtaining salt

Salt is of marine origin, whether harvested in salt marshes or extracted from deposits remaining from geological seas or lakes which have evaporated over the centuries. For this reason salt is classed as an aqueous rock alongside gypsum and sylvinite. It appears in three crystallised forms:

- ★ solar salt;
- ★ rock salt;
- ★ vacuum salt.

Enquiries regarding the purchase of data should be directed to:

Eurostat Data-Shop
4, rue Alphonse Weicker
L - 2014 Luxembourg
tel: (352) 4335 2251
fax: (352) 4335 22221
e-mail: agnesn@eurostat.datashop.lu

Rock salt and vacuum salt are obtained through mining (dry mining or solution mining). When the salt is easily accessible and of sufficiently high quality the deposits of rock salt (or halite) are exploited in situ. There are substantial reserves which permit low-yield recovery methods, the most widespread being that of stripping chambers and domes. In other cases, fresh water is injected to dissolve the salt. The resulting brine is pumped out and evaporated on the surface in a salt works equipped with cascade evaporators or using thermocompression (heat pumps). In both cases, closed chamber evaporation processes are involved, hence the expressions "evaporated salt" or "vacuum salt" to designate this type of salt.

In the past, brine from commercial salt sources (with an adequate concentration of salt) was evaporated in pans heated over a continuous live fire (vacuum or igneous salt, from ignis meaning fire in Latin), where it crystallised in coils as the water evaporated slowly. The pans were circular or rectangular basins of steel plate. This work was very labour-intensive and the provision of wood as fuel meant extensive felling, with the consequent devastation of forests bordering salt works, to the great detriment of local populations.

In the case of sylvinite, which is mined to obtain the potassium needed to manufacture fertilisers, floatation or heat treatment is used to separate the sodium chloride from the potassium chloride.

The main salt deposits date from the Permian and Triassic periods, geological periods which were favourable to complete evaporation cycles. Salt deposits are found almost everywhere in Europe, apart from the Scandinavian countries. This explains why these countries are net importers. Another reason is that climate conditions in these countries do not permit the production of solar salt.

Sea water evaporates under the action of the sun and the wind. The optimal conditions of concentration and crystallisation are combined on the shores of the Mediterranean. During evaporation, various salts form and create deposits, including sodium chloride. Crystallisation is halted voluntarily when the brine reaches a certain level of density so that the magnesia salts do not give the salt a bitter flavour. About 37 kilograms of sea water is required to produce one kilogram of salt. Some 90% evaporates during the concentration phase. Salt crystals form on the salting slabs in a crust between 8 and 15 centimetres thick. In the past salt was harvested by spade. Nowadays, the advent of increasingly efficient machinery has speeded up production operations and has reduced the risk posed to salt by end-of-summer storms. The salt is stored in heaps or salt piles or transported to a washing station to remove the impurities which give it a grey colour.

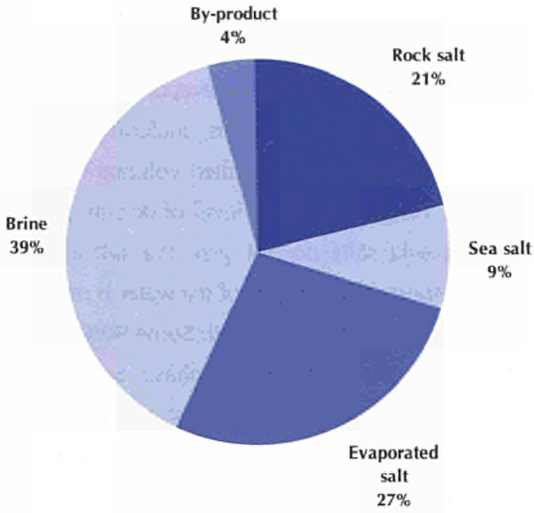
Traditional salt marshes on the Atlantic coast, both in France and in Portugal, still produce salt daily using archaic methods. The absence of a dry season makes production very random and obliges producers to harvest the salt between two rainy periods.

The production of rock salt and solar salt is therefore influenced by meteorological and climatic conditions. The Mediterranean climate is more favourable to crystallised salt production than the climate on the Atlantic coast.

Lastly, it should be noted that salt can appear in different colours in nature depending on the levels of ferrous salts it contains.

Figure 6.1

Breakdown of EU production in volume by type of salt, 1996[1]



1) except IRL, L, FIN and S where there is no salt production

Source : ESPA

Data pertaining to the salt industry

Germany is the leading salt producer in Europe

In 1996 the total production of salt in the EU (excluding Finland, Ireland, Luxembourg and Sweden, which are not producers) was 37.1 million tonnes, an increase of 1.0% over the previous year. The rate of increase in 1996 was higher than in 1995 (+ 0.3%). This was due to the higher demand for road salt owing to the harsh winter, since demand fluctuates depending on winter conditions.

Tonnage distribution based on production methods shows that in 1996 saline solution accounted for 39.4% of the total, down 2.4% over three years; this was followed by vacuum salt with 26.7% (an increase of 1.2% between 1993 and 1996), rock salt with 21.2% (+2.1%) and solar salt (down 1.4% to 8.7%). With a mediocre harvest, however, 1996 was not a typical year for solar salt.

Table 6.1

Breakdown of salt production by type (thousand tonnes)

		Rock salt	Sea salt	Evaporated salt	Brine	By-product	Total
Northern area (1)	1993	5,330	:	7,462	8,496	:	21,288
Southern area (2)	1993	1,604	4,970	1,990	6,540	1,234	16,338
Europe (3)	1993	6,934	4,970	9,452	15,036	1,234	37,626
Northern area (1)	1994	5,491	:	7,691	8,487	:	21,669
Southern area (2)	1994	1,693	5,047	2,266	6,401	1,198	16,605
Europe (3)	1994	7,184	5,047	9,957	14,888	1,198	38,274
Northern area (1)	1995	5,419	:	8,019	8,733	:	22,171
Southern area (2)	1995	1,559	5,149	2,275	6,155	1,302	16,440
Europe (3)	1995	6,978	5,149	10,294	14,888	1,302	38,611
Northern area (1)	1996	6,291	:	8,180	8,558	:	23,029
Southern area (2)	1996	1,647	5,217	2,225	6,095	1,483	16,667
Europe (3)	1996	7,938	5,217	10,405	14,653	1,483	39,696

1) A, B, DK, D, NL, UK and Switzerland
2) F, EL, I, P, S and Turkey
3) northern area and southern area

Source : ESPA

In 1996 the value of salt production (NACE Rev.1 14.40) was ECU 1,100 million for EU-15, an 18.4% increase on the previous year, which is a sharp upswing compared with the moderate increase of 3.2% in 1995 and, in particular, the 2.3% drop in 1994. Germany is the leading Community producer, accounting for 38.5% of the total value of Community production in 1996, followed by France with 15.6%, while for purposes of comparison, the United Kingdom, Italy, Portugal and Spain produced 9.4%, 9.2%, 6.0% and 5.6% respectively. For the most part, the Netherlands produces vacuum salt, Germany produces both rock salt and vacuum salt and the United Kingdom produces rock salt and vacuum salt in equal proportions.

Despite a global surplus, some countries, such as Japan, are net importers of salt

Salt supply exceeds demand at world level and most countries are salt producers. However, there are two major exceptions of note. Firstly, Japan is a net importer since its production does not meet its needs. Indeed, its production, which was 1.4 million tonnes in 1996, satisfies the demand only for food grade salt, with the result that Japan imports salt, mainly from China, Australia and Mexico. Secondly, in Western Europe Norway, Sweden and Finland do not produce salt. Hungary also imports salt, mainly from Austria.

Supply exceeds demand owing to the very nature of salt, which may be termed an inexhaustible resource. Thus, it is present in the sea which covers two-thirds of the globe. The three main world producers of crystallised salt are, in ascending order, the European Union, the United States and China.

Table 6.2

Production by type: evolution in the EU[1] (thousand tonnes)

	1993	1994	1995	1996
Rock salt	6,870	7,111	6,906	7,861
Sea salt	3,644	3,799	3,802	3,246
Evaporated salt	9,176	9,646	9,872	9,907
Brine	15,004	14,852	14,850	14,620
By-product	1,234	1,198	1,302	1,483
Total	35,928	36,606	36,732	37,117

1) except IRL, L, FIN, and S where there is no salt production

Source : ESPA

Table 6.3

EU production of salt in value (million ECU)

	1993	1994	1995	1996
EU-15	934.6	913.4	942.4	1,115.5
D	196.9	250.3	252.2	429.5
EL	21.8	21.8	24.7	25.6
E	69.7	64.4	76.4	62.9
F	246.3	178.7	176.6	174.1
I	108.5	99.9	90.6	103.0
P	55.0	51.8	62.8	66.4
UK	89.4	115.9	113.9	104.9

Source : eurostat

Table 6.4

Net imports of salt by outlet, 1995[1] (thousand tonnes)

	Ireland	Suomi/ Finland	Sverige
Total	75.9	496.8	982.5
Chemical industry	2.2	157.4	293.7
Other industries	18.1	78.3	1.3
Food grade salt	25.3	29.4	32.2
Non specified	20.8	156.0	650.7
Sea water	9.5	75.7	4.6

1) only for the Member States where no salt is produced; excl. L as trade data is combined with B

Source : ESPA

Industry structure

Producers of crystallised salt display a very wide structural diversity. In Europe, enterprises can be split into five categories:

- ★ the large chemical groups such as Solvay (B) and Akzo Nobel (NL), where salt activities are in integral part of inorganic chemical processes; part of the salt produced is used as a raw material in electrolysis workshops;
- ★ the specialised subsidiaries of chemical groups such as Kali and Salz for BASF (D);
- ★ large companies specialising in salt such as British Salt (UK), Italkali (I), and the Salins group (F, E), which uses all three production technologies;
- ★ small and medium-sized firms such as Levin Saline Luisenhall (D) or Saline d'Einville (F);
- ★ traditional producers who still survive on the Atlantic coast (F, P).

Table 6.5

Main salt producers in western Europe crystallised salt production[1]

	Country	Rock salt	Vacuum salt	Sea salt
Azko Nobel International B.V.	NL		x	
Azko Nobel Salz GmbH	D		x	
Amministrazione Autonoma dei Monopoli di Stato	I		x	x
Aragonesas Industrias y Energia S.A.	E			x
British Salt Ltd.	UK		x	
Cleveland Potash Ltd.	UK	x		
Compagnie des Salins du Midi et des Salines de l'Est	F	x	x	x
Dansk Salt A/S	DK		x	
General Directorate of Tobacco, Salt and Alcohol Enterprise	TR	x	x	x
Hellenic Saltworks SA	EL			x
Irish Salt Mining Ltd.	UK	x		
Italkali Società Italiana Sali Alcanini S.p.A.	I	x		
Kali und Salz GmbH	D	x	x	
Mines de Potasse d'Alsace	F	x		
New Cheshire Salt Works Ltd.	UK		x	
Österreichische Salinen AG	A	x	x	
Saline d'Einville	F		x	
Salinera Española S.A.	E			x
Salt Union Ltd.	UK	x	x	
Société Vaudoise des Mines et Salines de Bex	CH	x	x	
Solvay S.A.	B		x	
Solvay S.A.	F		x	
Solvay Salz GmbH	D	x	x	
S.p.A. Ing. Luigi Conti-Vecchi	I		x	x
Südsalz AG	D	x	x	
Südwestdeutsche Salzwerke AG	D	x		
Union Salinera de España S.A.	E			x
Vereinigte Schweizerische Rheinsalinen	CH		x	
Wacker-Chemie GmbH	D	x		

1) crystallised salt includes rock salt, sea salt and evaporated salt

Source: ESPA, "Sel et société, une affaire de métier", B. Moinier (Nathan 1997)

Germany and France account for more than half of Community employment in the salt industry

In 1996 the salt industry employed 7,801 workers compared with 8,539 three years earlier, i.e. an average annual fall of 3.0% over the period. The main Community employer is France, with a quarter of the Community workforce, ahead of Germany with 19.2% and Spain with 14.5%.

In addition, for the same production level of about 600,000 tonnes, Portugal has a work force of 3,000 while in Denmark the figure is 150 persons, reflecting the extent of the difference between a modern salt works and archaic production methods applied to family holdings.

Table 6.6

Employment in the salt industry (units)

	1993	1994	1995	1996
EU-15	8,539	7,611	7,904	7,801
D	1,285	1,416	1,511	1,500
EL	330	322	311	:
E	941	800	1,009	1,131
F	2,220	1,936	2,019	1,976
I	1,593	914	868	831
P	648	648	614	588
UK	661	754	751	724

Source: eurostat

Trade is mainly intra-Community

The salt trade suffers from two major handicaps. Firstly, although salt is an inexpensive product, transport costs weigh heavily in its global price. Secondly, many countries produce salt. Nonetheless, if salt is sold in bulk for non-food purposes, its added value increases when it is supplemented with iodine or fluoride, or when intended for specific uses such as the distribution of special water softening and dish-washing salts.

In 1997, total salt imports at EU-15 level were 9.4 million tonnes. Salt imports destined for the chemical industry accounted for more than half, or 55.6% of total imports and 58.2% of intra-Community imports. Food grade salt accounts for about 10% of trade. In 1997, EU exports of salt were equal to 8.3 million tonnes. The EU had a positive extra-Community trade balance of 886.6 thousand tonnes expressed in volume and ECU 41.4 million in value terms.

Table 6.7

EU-15 total trade by type of salt in volume[1] (thousand tonnes)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Imports										
Chemical industry	1,001.0	1,021.5	970.8	850.0	1,135.8	1,197.0	1,716.6	3,109.8	4,622.1	5,212.7
Food grade salt	376.4	458.8	587.1	530.6	462.4	616.7	655.0	578.6	963.4	940.0
Sea water	2.0	3.1	2.7	10.9	12.1	24.4	29.2	109.6	63.1	76.0
Salt (total)	3,615.6	3,408.5	3,542.8	3,860.5	4,049.0	3,717.8	4,820.7	7,042.2	9,699.7	9,373.8
Exports										
Chemical industry	1,527.0	1,563.2	1,770.5	1,613.2	1,738.2	1,047.0	1,343.4	1,210.6	1,261.3	1,162.6
Food grade salt	628.7	712.9	809.0	702.8	578.7	846.4	902.1	983.6	1,146.7	1,326.9
Sea water	1.8	2.0	4.3	4.9	6.0	6.8	7.5	11.1	39.5	49.1
Salt (total)	6,724.6	6,429.1	6,752.5	8,071.9	7,795.5	6,576.7	7,683.2	8,360.7	9,531.0	8,257.2

1) excl. A, FIN, and S before 1995

Source: eurostat

Table 6.8

Total trade of salt in value (million ECU)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Imports										
EU-15 (1)	56.1	58.8	46.6	36.6	38.8	44.4	22.7	23.2	24.2	24.5
B / L	34.7	36.5	33.4	34.3	37.4	46.1	46.0	56.5	74.7	59.9
DK	6.8	6.4	6.2	7.7	7.3	10.2	14.7	14.5	17.4	12.8
D	24.9	23.6	25.9	36.3	44.4	39.4	42.7	63.4	57.5	63.1
EL	1.2	2.2	2.2	2.3	1.6	2.8	2.8	3.2	5.1	4.9
E	0.7	3.1	6.3	3.7	3.0	2.2	2.3	3.4	3.7	4.0
F	14.0	13.5	14.5	16.9	19.3	20.4	26.5	28.4	33.3	39.2
IRL	8.8	8.3	9.4	9.4	8.8	5.9	7.9	7.4	8.5	8.1
I	27.0	24.1	26.9	25.1	24.0	20.8	29.7	22.9	25.4	31.3
NL	9.1	9.0	10.2	15.8	16.1	14.1	25.8	17.2	19.0	15.7
A	0.1	0.1	0.1	0.2	0.2	0.5	0.2	6.1	13.1	6.9
P	3.2	2.7	3.9	2.8	3.3	3.6	5.0	3.5	4.7	4.5
FIN	21.0	24.3	22.0	16.7	15.4	13.8	16.8	17.1	14.5	15.2
S	44.9	40.4	32.5	34.4	37.2	38.1	44.0	42.7	43.8	35.8
UK	6.5	6.1	7.8	8.2	9.2	9.6	13.3	11.1	15.8	16.2
Exports										
EU-15 (1)	33.5	37.1	34.5	46.4	78.8	70.3	70.8	59.7	71.4	65.9
B / L	10.1	9.6	9.9	10.7	9.6	12.8	10.4	9.8	13.8	16.6
DK	9.5	10.2	10.2	10.6	11.2	12.4	23.6	14.3	15.6	12.7
D	41.9	46.4	50.3	78.0	77.2	71.3	86.4	92.3	99.9	84.5
EL	0.0	0.1	0.1	0.3	0.5	1.7	1.2	1.4	1.8	1.8
E	6.0	5.7	3.5	3.9	5.5	11.2	13.7	17.4	22.7	19.3
F	18.6	19.0	26.1	30.4	27.0	27.7	30.6	31.4	43.8	37.4
IRL	0.1	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0.0
I	5.7	3.7	5.2	5.9	6.4	4.8	5.7	6.5	10.4	9.3
NL	84.6	89.1	83.8	100.7	90.9	87.9	98.3	107.2	125.6	108.2
A	1.4	1.1	1.5	3.3	5.2	9.1	9.3	4.4	4.9	5.3
P	1.5	2.0	2.5	1.3	1.3	0.6	0.8	0.5	1.2	1.5
FIN	1.2	0.7	0.1	0.1	0.1	0.0	0.1	0.2	0.6	0.4
S	2.1	2.3	2.0	1.7	2.3	1.5	1.6	3.3	1.8	1.4
UK	19.2	17.9	15.0	17.2	15.4	20.7	24.2	26.5	26.9	25.1
Trade balance										
EU-15 (1)	-22.5	-21.6	-12.0	9.8	40.0	25.9	48.1	36.5	47.2	41.4
B / L	-24.6	-26.9	-23.5	-23.6	-27.8	-33.4	-35.6	-46.7	-60.9	-43.3
DK	2.8	3.7	4.1	2.9	3.9	2.2	8.8	-0.2	-1.8	-0.1
D	17.0	22.8	24.5	41.7	32.8	31.9	43.7	28.9	42.4	21.5
EL	-1.2	-2.1	-2.2	-2.0	-1.1	-1.1	-1.6	-1.8	-3.2	-3.0
E	5.3	2.6	-2.7	0.3	2.5	9.0	11.4	14.0	18.9	15.2
F	4.7	5.5	11.6	13.5	7.6	7.3	4.2	3.1	10.5	-1.8
IRL	-8.7	-8.1	-9.1	-9.2	-8.7	-5.9	-7.8	-7.4	-8.4	-8.1
I	-21.2	-20.4	-21.8	-19.1	-17.6	-16.1	-24.0	-16.4	-15.0	-22.0
NL	75.5	80.1	73.7	84.9	74.8	73.8	72.4	90.0	106.7	92.4
A	1.3	1.0	1.4	3.1	5.0	8.6	9.1	-1.7	-8.2	-1.6
P	-1.7	-0.7	-1.4	-1.4	-2.0	-2.9	-4.2	-3.0	-3.5	-3.0
FIN	-19.8	-23.6	-21.9	-16.6	-15.3	-13.8	-16.7	-16.9	-13.9	-14.8
S	-42.8	-38.1	-30.5	-32.7	-34.9	-36.6	-42.4	-39.4	-42.0	-34.5
UK	12.7	11.9	7.2	9.0	6.2	11.1	10.9	15.4	11.1	8.9

1) for EU-15 extra-EU trade flows are taken

Source: eurostat

eurostat

Table 6.9

Total trade of salt in volume (thousand tonnes)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Imports										
EU-15 (1)	1,812.0	1,839.7	1,526.6	1,016.1	1,018.2	1,166.5	1,160.9	547.3	521.6	473.4
B / L	1,056.5	1,114.7	960.3	998.7	1,151.0	1,032.4	1,284.7	1,517.3	3,584.4	3,608.8
DK	171.8	132.1	128.2	193.4	133.3	213.5	382.4	351.4	458.4	273.2
D	723.6	628.6	660.2	929.8	1,141.4	1,041.9	1,142.2	1,813.1	1,735.0	1,792.5
EL	40.6	74.2	75.3	71.3	45.7	91.1	100.0	92.1	133.2	158.3
E	7.3	76.8	198.4	97.3	29.0	22.2	20.0	20.6	21.4	24.7
F	181.2	169.2	182.4	198.2	226.4	208.2	312.4	362.9	456.8	596.9
IRL	94.9	107.8	122.2	130.3	106.1	63.3	61.3	76.1	94.7	95.0
I	706.1	649.6	680.0	576.4	567.9	539.6	729.9	518.3	655.0	673.5
NL	354.5	220.4	264.6	425.0	400.5	268.5	430.1	433.5	499.6	382.1
A	0.2	1.7	2.2	2.5	2.9	33.7	0.9	71.3	209.9	88.0
P	117.1	95.0	104.4	75.9	76.2	71.9	122.3	73.0	90.6	75.1
FIN	645.8	710.1	686.4	477.6	432.5	377.1	425.5	419.8	342.3	413.0
S	1,342.5	1,098.9	931.2	894.2	958.7	1,018.0	1,171.6	1,059.5	1,104.9	904.6
UK	161.9	140.0	166.9	164.1	171.5	165.2	235.3	233.1	313.6	234.0
Exports										
EU-15 (1)	663.1	658.9	800.7	1,123.2	2,314.5	1,851.9	1,755.9	1,354.3	1,667.9	1,360.0
B / L	77.6	80.8	81.4	89.2	72.5	212.3	189.0	165.8	247.8	422.9
DK	301.7	311.9	305.0	301.9	312.9	332.8	373.4	325.7	332.6	327.3
D	2,061.3	2,001.7	2,167.3	3,315.4	3,107.8	2,379.3	2,839.9	2,698.1	3,020.9	2,576.7
EL	0.3	0.4	0.2	2.3	4.5	17.1	8.4	15.3	25.6	21.6
E	311.2	302.3	76.0	109.2	209.2	308.8	605.2	742.6	931.9	671.2
F	514.1	529.3	936.1	799.5	486.0	466.4	598.7	609.5	798.3	668.9
IRL	0.8	1.6	1.6	1.7	0.5	0.1	0.3	0.3	0.1	0.1
I	358.3	77.8	154.6	224.3	374.2	244.3	333.7	328.5	292.8	186.0
NL	2,786.0	2,815.9	2,676.4	3,011.4	3,026.0	2,325.2	2,501.2	2,909.1	3,340.2	3,043.9
A	17.7	13.7	17.1	36.8	68.9	118.3	125.1	55.5	63.4	71.6
P	19.9	22.1	28.4	18.4	19.2	8.3	11.2	5.7	21.1	24.9
FIN	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.3	0.7	0.6
S	1.8	1.9	2.0	1.5	1.6	1.1	2.3	54.2	1.7	2.0
UK	293.4	285.3	325.5	198.6	182.6	282.2	222.2	450.1	454.0	239.7
Trade balance										
EU-15 (1)	-1,148.9	-1,180.8	-725.9	107.1	1,296.3	685.4	594.9	807.0	1,146.3	886.6
B / L	-978.9	-1,033.9	-878.8	-909.6	-1,078.5	-820.1	-1,095.7	-1,351.5	-3,336.5	-3,185.9
DK	129.9	179.8	176.9	108.5	179.7	119.3	-9.0	-25.7	-125.8	54.1
D	1,337.7	1,373.0	1,507.1	2,385.6	1,966.4	1,337.4	1,697.6	885.0	1,285.9	784.1
EL	-40.3	-73.8	-75.1	-69.0	-41.2	-73.9	-91.6	-76.9	-107.6	-136.6
E	303.9	225.4	-122.5	11.9	180.2	286.6	585.2	721.9	910.5	646.5
F	332.8	360.1	753.6	601.3	259.6	258.2	286.4	246.6	341.5	72.0
IRL	-94.2	-106.2	-120.6	-128.6	-105.5	-63.3	-61.0	-75.9	-94.6	-94.9
I	-347.8	-571.8	-525.4	-352.1	-193.7	-295.4	-396.2	-189.8	-362.1	-487.5
NL	2,431.6	2,595.5	2,411.9	2,586.4	2,625.5	2,056.7	2,071.1	2,475.7	2,840.5	2,661.8
A	17.5	12.0	14.9	34.3	66.0	84.6	124.2	-15.8	-146.5	-16.4
P	-97.2	-72.9	-76.0	-57.5	-57.0	-63.6	-111.1	-67.3	-69.5	-50.3
FIN	-645.3	-709.8	-686.4	-477.6	-432.5	-377.0	-425.4	-419.5	-341.7	-412.4
S	-1,340.7	-1,097.0	-929.2	-892.7	-957.1	-1,016.9	-1,169.3	-1,005.3	-1,103.2	-902.6
UK	131.5	145.3	158.7	34.5	11.0	117.1	-13.1	217.0	140.4	5.7

1) for EU-15 extra-EU trade flows are taken

Source: eurostat

Table 6.10

EU-15 trade by type of salt, 1997

		Imports		Exports	
		Value (million ECU)	Quantity (thousand tonnes)	Value (million ECU)	Quantity (thousand tonnes)
Chemical industry	Extra EU-15	1.2	35.4	2.7	87.2
	Intra EU-15	88.7	5,177.2	13.9	1,075.4
	Total	89.9	5,212.7	16.6	1,162.6
Others industries	Extra EU-15	2.9	105.9	10.3	249.3
	Intra EU-15	44.6	916.5	41.1	864.7
	Total	47.5	1,022.4	51.4	1,114.0
Food grade salt	Extra EU-15	5.6	91.9	24.6	308.7
	Intra EU-15	60.7	848.1	61.8	1,018.2
	Total	66.4	940.0	86.4	1,326.9
Sea water	Extra EU-15	1.4	24.7	1.8	20.8
	Intra EU-15	6.8	51.3	8.2	28.3
	Total	8.2	76.0	10.0	49.1
Non specified	Extra EU-15	13.4	215.3	26.5	694.0
	Intra EU-15	95.3	1,907.3	132.5	3,910.7
	Total	108.7	2,122.6	159.0	4,604.7
Total salt	Extra EU-15	24.5	473.4	65.9	1,360.0
	Intra EU-15	296.1	8,900.4	257.5	6,897.2
	Total	320.6	9,373.8	323.4	8,257.2

Source: eurostat

The applications of salt

Among the many applications of salt, there are three main ones:

- ★ the inorganic chemicals industry, where salt is the raw material used to produce chlorine and sodium by electrolysis;
- ★ winter road maintenance, where salt is used as a road de-icer;
- ★ in food, since salt intake is essential to balance the organism in humans and animals.

Firstly, it must be pointed out that salt consumption, and consequently sales figures, depend primarily on the chemicals industry (about 45%), and in particular on the chlorine and sodium producing sectors, since salt is a molecule formed of atoms - or rather ions - of chlorine and sodium. Secondly, sales figures depend on winter climatic conditions, since road salt requirements can vary between 2 and 6 million tonnes from one year to the next. The share of food grade salt in total sales has been falling for the last fifty years and now rarely exceeds 10%. Clearly, we have come a long way since Roman times when food consumption made up about 90% of salt demand.

Nonetheless, supply is continuously adjusting to demand. The salt industry has not been taken unawares either by the industrial revolution or the demographic explosion. Present capacity far outstrips stated needs.

Table 6.11

Crystallised salt sales by outlets[1] (thousand tonnes)

		Chemical industry	Other industries	Food	Highways	Total
Northern area (2)	1993	4,890	1,601	1,022	3,052	10,565
Southern area (3)	1993	4,572	1,954	1,286	620	8,432
Europe (4)	1993	9,462	3,555	2,308	3,672	18,997
Northern area (2)	1994	4,877	1,563	1,017	3,588	11,045
Southern area (3)	1994	5,065	1,729	1,319	664	8,777
Europe (4)	1994	9,942	3,292	2,336	4,252	19,822
Northern area (2)	1995	4,163	1,616	1,017	4,508	11,304
Southern area (3)	1995	5,161	1,801	1,338	1,015	9,315
Europe (4)	1995	9,324	3,417	2,355	5,523	20,619
Northern area (2)	1996	4,260	1,620	1,003	5,797	12,680
Southern area (3)	1996	5,294	1,874	1,339	1,453	9,960
Europe (4)	1996	9,554	3,494	2,342	7,250	22,640

1) crystallised salt includes rock salt, sea salt and evaporated salt
2) B, DK, D, NL, A, UK and Switzerland
3) EL, E, F, I, and Turkey
(4) northern area and southern area

Source : ESPA

Inorganic chemicals industry

Three segments of this sector are important users:

- ★ sodium chloride electrolysis;
- ★ sodium carbonate production;
- ★ sodium sulphate production.

Chlorine and sodium are obtained via sodium chloride electrolysis using three technologies which differ according to workshop equipment:

- ★ mercury cathode cells (64%);
- ★ diaphragm cells (24%);
- ★ membrane cells (12%).

These technologies require crystallised salt, except in the case of diaphragm cells which use saline solution. Electric current is used to decompose the salt in the cells. Chlorine is released in the anode, and sodium is released in the cathode where it reacts on the water to produce caustic soda, with the release of hydrogen. However, membrane cell technology is not gaining ground as quickly in Europe as in the United States and Japan (more than 80%).

Table 6.12

Evolution of crystallised salt sales by outlets in the EU[1] (thousand tonnes)

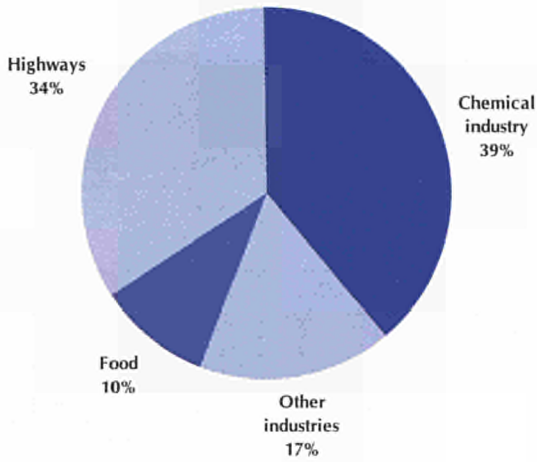
	1993	1994	1995	1996
Chemical industry	8,344	8,767	7,960	7,955
Other industries	3,405	3,189	3,321	3,388
Food	2,033	2,060	2,075	2,041
Highways	3,531	4,149	5,338	7,026
Total	17,313	18,165	18,694	20,410

1) crystallised salt includes rock salt, sea salt and evaporated salt; except IRL, L, FIN and S where there is no salt production; excluding P

Source : ESPA, "Sel et société, une affaire de métier", B. Moinier (Nathan 1997)

Figure 6.2

Breakdown of EU sales in volume by type of crystallised salt, 1996[1]



1) crystallised salt includes rock salt, sea salt and evaporated salt; except FIN, IRL, L and S where there is no salt production; excluding P

Source: ESPA

Chlorine, with European production of about 9.4 million tonnes, is mainly used to manufacture plastics, including polyvinyl chloride (PVC) for which numerous applications have developed (construction, automobile and packing industries), and to prepare disinfectants and solvents. Sodium is an intermediary product and the balance between the chlorine and the sodium depends on user demand in the light of the main applications of these substances and respective market trends. PVC accounts for more that one third of world chlorine use. Consequently, while chlorine has lost some ground in pulp bleaching, it continues to advance in the PVC sector owing to its reliability and versatility.

Sodium carbonate is obtained from saline solution and calcium. It is used as a basic product in the chemicals and glass-making industries and as concentrated washing soda in households.

Lastly, it is interesting to note that one tonne of salt produces 580 kilos of chlorine or 630 kilos of caustic soda. Since chlorine is difficult to store and transport, caustic soda tends to take precedence. However, salt is not only the main source of chlorine but also the most accessible, in terms both of its price and its harvesting. Indeed, less than 1% of chlorine is derived from potassium chloride.

Winter road maintenance

As was pointed out in the context of solar salt production, the climate considerably affects the salt industry. This is true also in this sector. If winter conditions, and in particular snow, ice and freezing fog adversely affect the normal flow of road traffic, likewise strong demand for salt has an immediate impact on the mining of rock salt deposits. In winter, salt, one property of which is to lower the freezing point of water, is used as a de-icer by highway departments, motorway operators and regional and local authorities. It is used in two ways: as a means of prevention and as a means of correction. In Continental Europe the use of wet salt and salt slurries is more effective. When combined with preventive treatment and the correct adjustment of salt spreaders, it makes it possible to reduce the quantities spread on the carriageway.

The quantities of salt used in this way vary, from 5 to 8 grams per m^2 for preventive treatment to 10 to 15 grams per m^2 for correction. The frequency with which salt spreaders are used depends on the meteorological conditions. Owing to improved weather forecasting, preventive treatment is now preferred. In both the United States and Europe, various studies have shown that preventive salting can quickly cut the number and seriousness of road accidents, with attendant substantial savings in social costs.

A choice has to be made between salt and the abrasives and various chemicals used as de-icers. As with gravel, sand (alone or mixed with salt) is not without problems. Large grains become coated with ice and behave like marbles. In addition, there is the dust created by passing vehicles in dry weather. Lastly, when carried off by rain water, abrasives risk blocking conduits. The related road maintenance costs militate against their use. In the case of slag, there is a risk that heavy metals will migrate into the ground water. In addition, for an equivalent area, seven times less salt than sand is required to treat a snow-covered or icy road. Moreover, while calcium chlorine and magnesium chlorine are better at lower temperatures than salt (brine, slurry),

other chemical products (urea, glycol) are useful only for localised intervention.

Supplied generally in bulk, road salt is also available in bags for households, although ordinary kitchen salt can also be used. This explains the obvious link between sales of kitchen salt and road salt consumption.

Food salt

Man ingests 7-8 grams of salt each day in his food (salt either naturally present or introduced in industrial food processing or domestic preparation) but does not consume all the salt used in the kitchen. In the long term, consumption (ingested sodium) is shrinking as a result of changing eating patterns and preservation methods. Since the beginning of the century, researchers have remained alert to a possible causal link between ingested sodium and high blood pressure. Population or intervention studies produce conflicting results and primarily highlight the many factors involved in hypertension. For example, there is evidence of the negative effects of restricting sodium ingestion, particularly in the elderly. Inadequate salt intake may in fact lead to a higher proportion of bad cholesterol in total cholesterol, a decline in intellectual faculties and certain deficiencies arising from the fact that insipid food can predispose towards anorexia.

Other uses of salt

Salt has other, more marginal, uses apart from those mentioned above. For example, it is used in leather and skin preservation to prevent the decomposition which could be caused by proliferation of bacteria. In the textile industry it is used to fix dye baths. It is also used to soften water. This technology is vital in certain regions of Europe where the water is very hard. Water softening involves exchanging the calcium and magnesium ions for the sodium ions provided by salt. The ion exchange takes place on a base of resin initially charged with sodium. The regenerating salts benefit households who want a good quality water supply (thereby reducing expenditure on energy and detergents), especially for washing dishes.

Salt is also used in ceramics manufacture (salted earthenware), in secondary aluminium processing and in the production of fats.

However, the decline in the use of chlorine in the pulp bleaching process, owing to the risk of pollution and environmental damage, has changed the structure of salt sales. The bleaching process without chlorine, introduced in northern Europe, has led to a decline in the demand for chlorine, and therefore for salt, and added to structural overcapacity.

Outlook: despite the multiple uses of salt, the industry is dependent on the chemicals sector and also on climatic conditions

In spite of the multiple uses of salt, producers are dependent on factors which make the market unstable. The inorganic chemicals industry absorbs about 45% of crystallised salt production and certain developments have had a negative structural impact on this market. Thus, the abandonment of pulp chlorine bleaching in Scandinavia has led to a 25% drop in demand, with no prospect of recovery. In the second sector of salt use, winter road maintenance, climatic conditions create a degree of uncertainty which is further exacerbated by the fact that, on average, this sector accounts for 25% of crystallised salt sales. Finally, endemic overcapacity is prompting producers to question the future of the salt industry in Europe.

The opening of Eastern Europe to the market economy will add about 25 million tonnes to the existing potential in the West (45 million tonnes) and the EU enlargement planned for the beginning of the next century will increase EU capacity by at least 12 million tonnes. Restructuring measures have been introduced but changes are likely.

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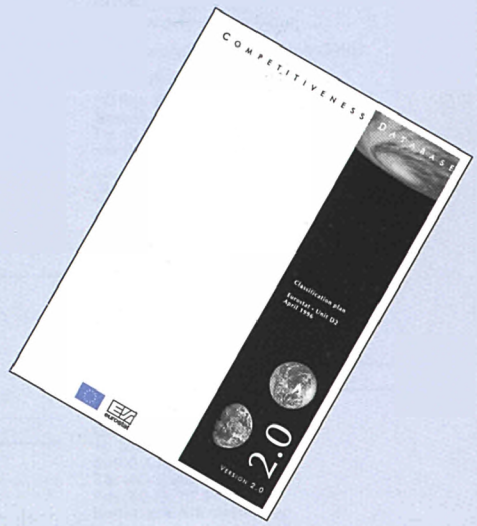

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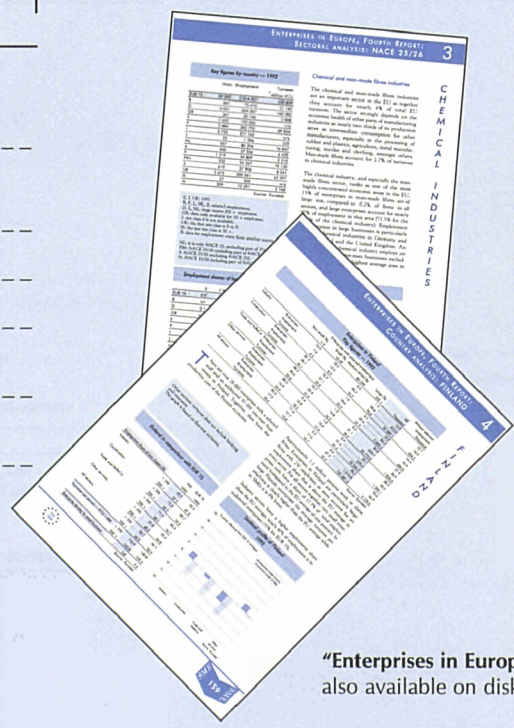

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