COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 11.12.2002
SEC(2002) 1340

COMMISSION STAFF WORKING PAPER

Statistical elements in support of the Communication on Industrial Policy in an enlarged Europe

{COM(2002)714 final}

COMMISSION STAFF WORKING PAPER

Statistical elements in support of the Communication on Industrial Policy in an enlarged Europe

INDEX OF TABLES AND GRAPHS

1. Services and Manufacturing 5

Graph 1.1: Share of total services and manufacturing in value added, 1970-2001 5

Graph 1.2: Shares in total civil employment in the EU, c. 1900-1998 (in per cent) 5

Table 1.1: Share of total manufacturing and Business Service sector in value added and in employment, EU, US. 6

Graph 1.3: Business Services - Value added at basic prices by economic sectors; EU 15 (2000) 6

Graph 1.4: Share of knowledge-based services in total intermediate demand from manufacturing 7

2. External Competitiveness 8

Graph 2.1: Net exports at current prices (National accounts) 8

Graph 2.2: EU exports of goods as percent of GDP (data for 2001 and 2002 are forecasts) 9

Table 2.1: Share of exports in world exports, EU, US and Japan (in percent; data for 2002 are forecasts) 9

Graph 2.3: Share in world trade of goods (excl. intra-EU) 10

Table 2.2: Export market shares of total OECD exports for Research Intensive Sectors. 11

Graph 2.4: Export market shares of total OECD exports for research intensive sectors (2000) 12

Table 2.3: Contribution to the manufacturing trade balance 13

Graphs 2.5: Contribution to the manufacturing trade balance - 1999 15

Table 2.4: EU-15 external trade with non-Community countries in manufacturing, 2000 (million EUR) 17

Graph 2.6: EU-15 Comparative Advantage for manufacturing sectors (2000) 17

Graph 2.7: Share of high-technology products in total exports, 2001 18

Table 2.5: Recent Trends in Real Exchange Rates and Unit Labour Costs for the EU and for the EU Manufacturing Sector, EU – 15 (data for 2002 and 2003 are forecasts) 19

Graph 2.8: Import penetration and export ratio of the EU, 1998 20

3. Internal specialisation 21

Graph 3.1: Share of selected manufacturing and business service sectors in EU (*) Value Added 21

Graph 3.2: Share of selected manufacturing and business service sectors in EU (*) employment 21

4. Productivity developments 22

Table 4.1: Labour productivity in EU Member States, US and Japan in 1975-2001 22

Table 4.2: Productivity growth in manufacturing 23

Graph 4.1: Productivity growth by type of industry in the EU 24

5. ICT spending 25

Graph 5.1: ICT expenditure as a % of GDP 25

6. Human capital 26

Graph 6.1: Average years of education of the working population, 1971-1999 (Average years of US education = 100) 26

Graph 6.2: Distribution of educational attainment of employees by economic activity; EU-15, 2000 27

Table 6.1: Total expenditure on education as percentage of GDP 27

7. SMEs and Entrepreneurship 28

Table 7.1: Employment, productivity and export propensity by enterprise size[1] 28

Graph 7.1: Major business constraint 2001, by size of enterprise (% of SMEs) 28

Graph 7.2: Net- and gross-birth rates of enterprises 29

Graph 7.3: Propensity towards entrepreneurship, 2000 and 2001 30

8. Innovation 31

Graph 8.1: R&D expenditure as percentage of GDP (latest year available) 31

Graph 8.2: Number of patents/ high tech patents per million inhabitants, 2000 32

Graph 8.4: Innovation capacity index 33

Graph 8.5: Share of firms with innovative activity 34

9. Environmental Performance 35

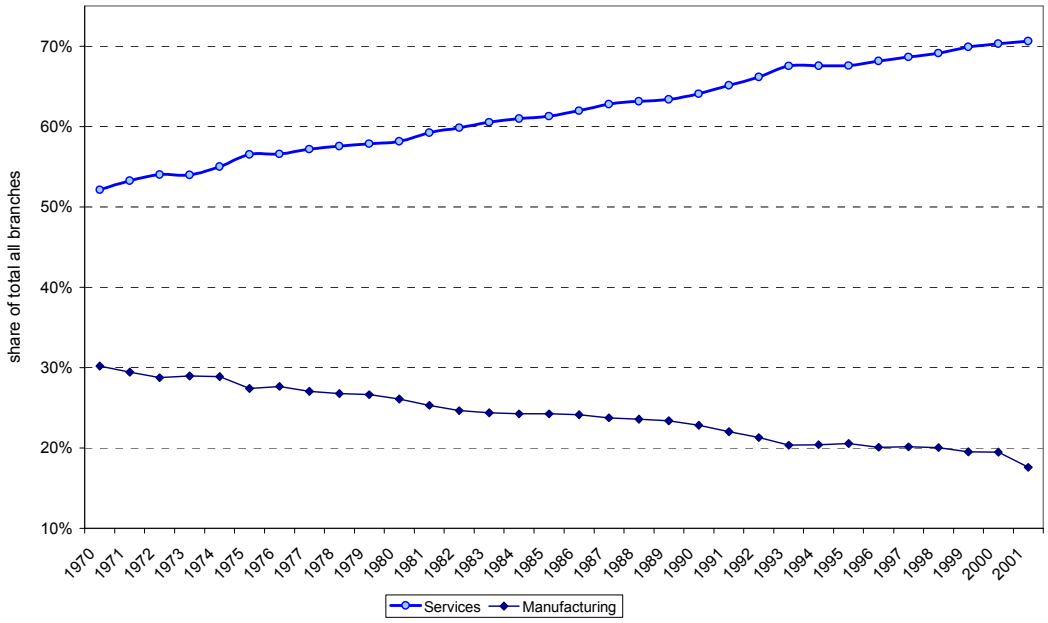
Graph 9.1: Comparison of Eco-efficiency of manufacturing: EU vs. US: Energy Inputs million € per 1000TOE 35

Graph 9.2: Comparison of Eco-efficiency of manufacturing: EU vs. US: Energy Inputs million € per 1000TOE 36

Graph 9.3: Eco-efficiency of EU Manufacturing Industry: CO2 Emissions Index 1985 = 100 37

1. SERVICES AND MANUFACTURING

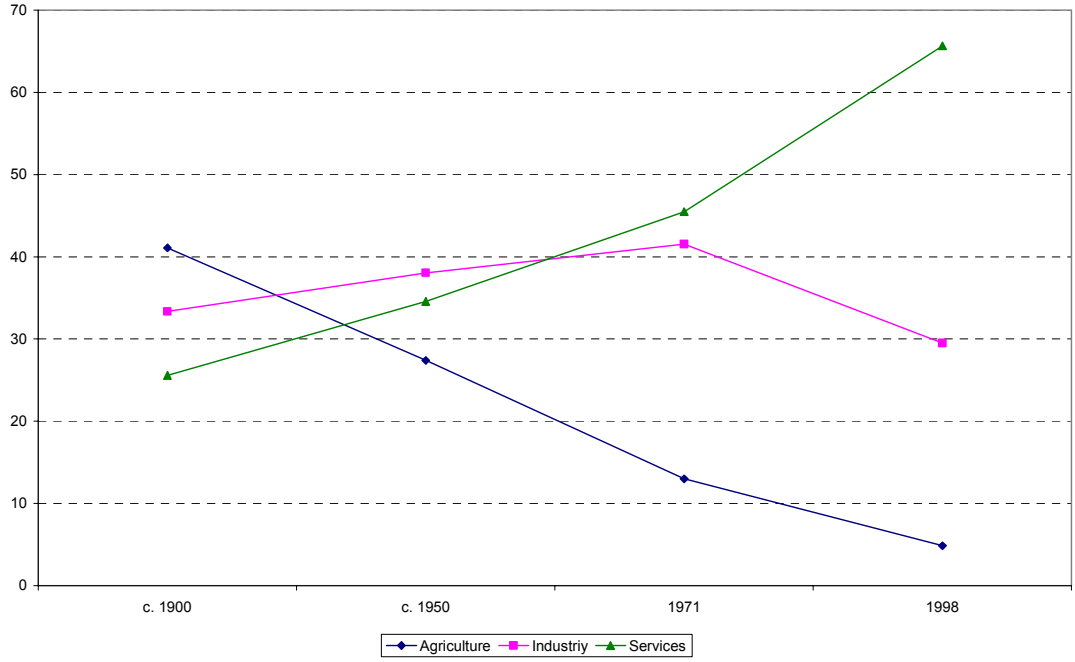
Graph 1.1: Share of total services and manufacturing in value added, 1970-2001



Note: For manufacturing: E 1980-99; IRL 1990-99; L since 1995; P since 1977; 2001: B, D, EL, A and FIN missing. For services: E since 1980; IRL 1990-99; L since 1995; P since 1977.

Source: AMECO database, update 01/10/02.

Graph 1.2: Shares in total civil employment in the EU, c. 1900-1998 (in per cent)



Source: Feinstein, C., "Structural change in the developed countries during the twentieth century", Oxford Review of Economic Policy, 15(4), 1999.

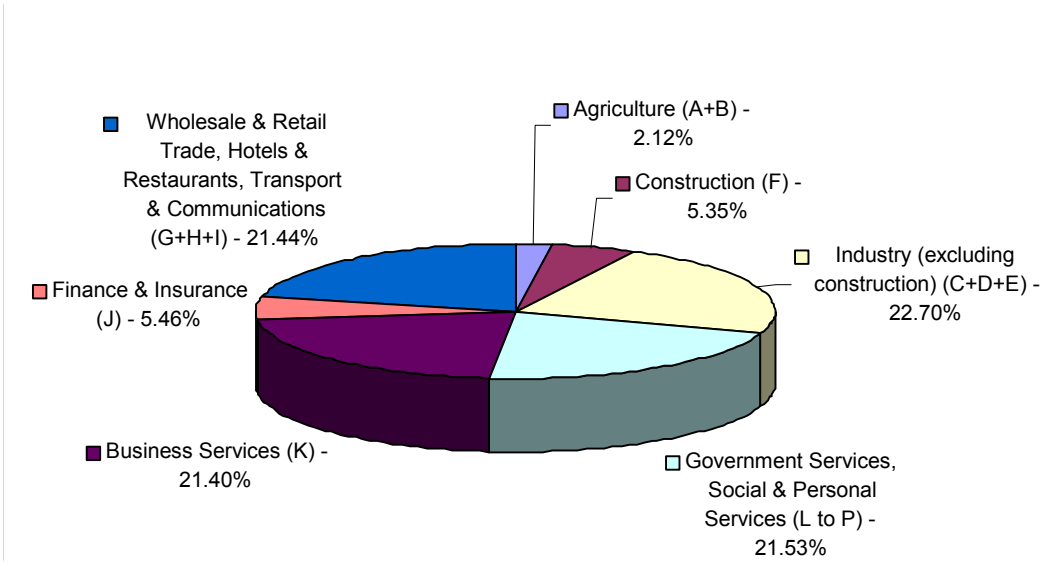
Table 1.1: Share of total manufacturing and Business Service sector in value added and in employment, EU, US.

	Value Added				*Employment*			
	*EU**		*US*		*EU***		*US*	
	1991	**1999**	**1991**	**1999**	**1991**	**1999**	**1991**	**1999**
Manufacturing	22.3	19.7	17.4	16.1	21.8	18.8	14.9	13.0
Business Related Services	44.1	48.3	49.1	53.9	36.1	39.6	43.8	46.3
	* EU-15 excl. EL, IRL, L, PT				** EU-15 excl. EL, IRL, L, NL, PT			

Note: Business Related Services (NACE sections I to K) is total services after exclusion of public administration, community and personal services.

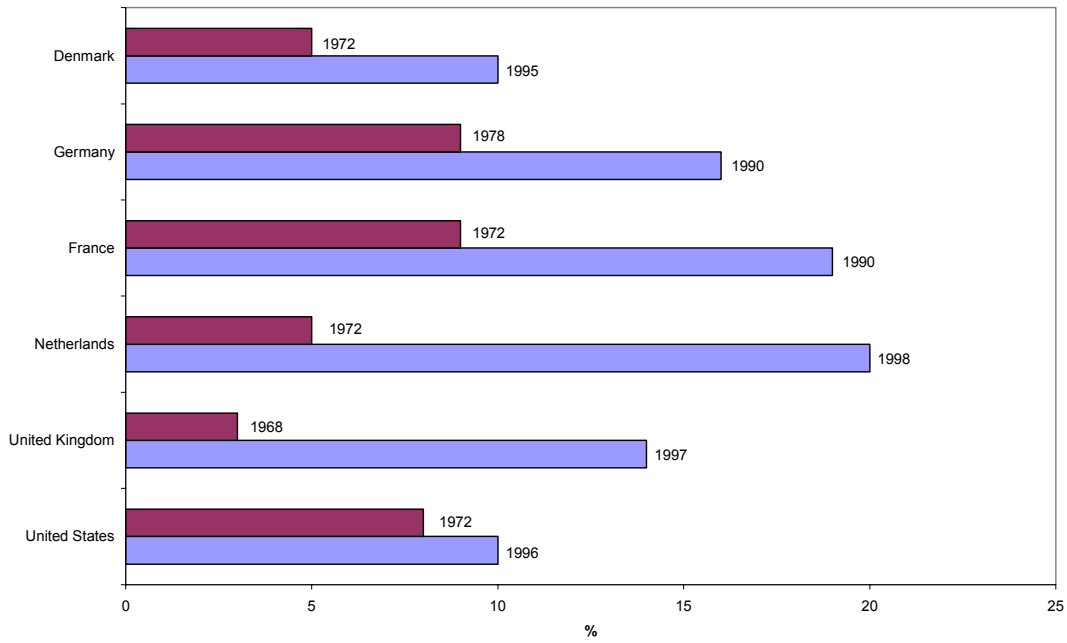
Source: OECD, STAN database 2001, 2002.

Graph 1.3: Business Services - Value added at basic prices by economic sectors; EU 15 (2000)



Source: National Accounts – Breakdowns by branch of activity

Graph 1.4: Share of knowledge-based services in total intermediate demand from manufacturing

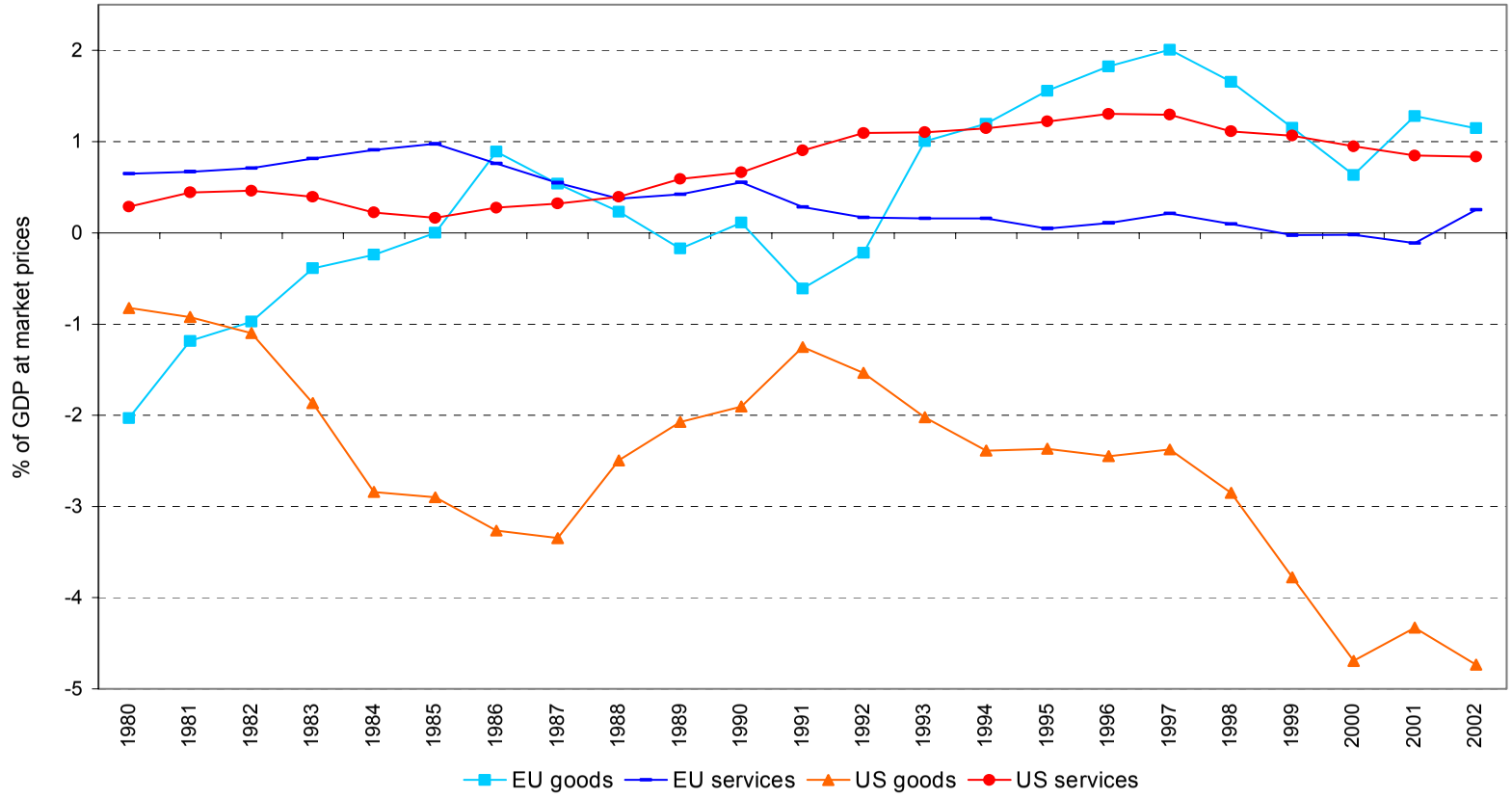


Note: Knowledge-based services comprise communication, financial services, real estate and business services (ISIC 72, 81, 82 and 83).

Source: WIFO calculations using OECD, National Statistical Offices; in European Commission (2000).

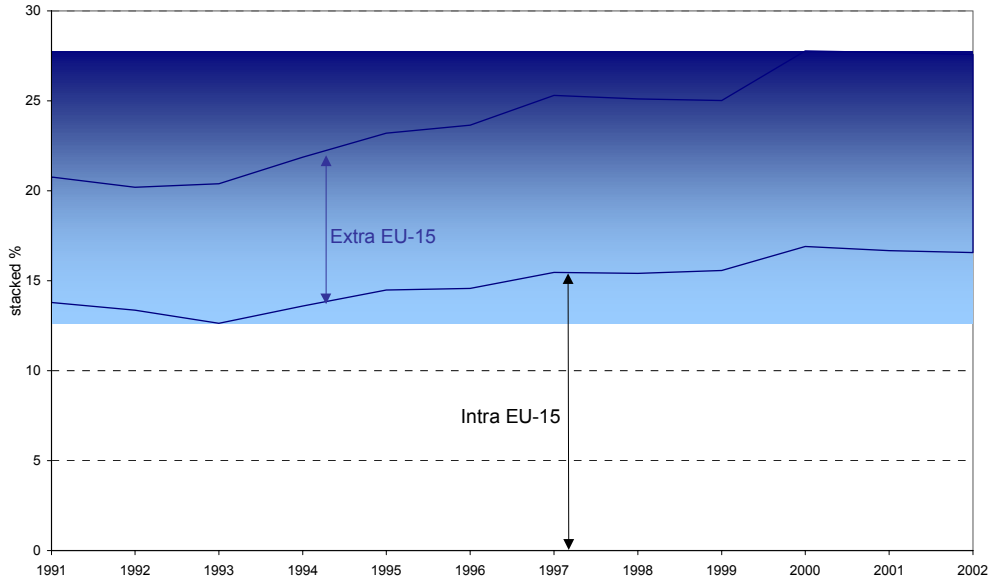
2. EXTERNAL COMPETITIVENESS

Graph 2.1: Net exports at current prices (National accounts)



Source: AMECO data bank (*) incl. Only West Germany instead of FDR before 1991

Graph 2.2: EU exports of goods as percent of GDP
(data for 2001 and 2002 are forecasts)



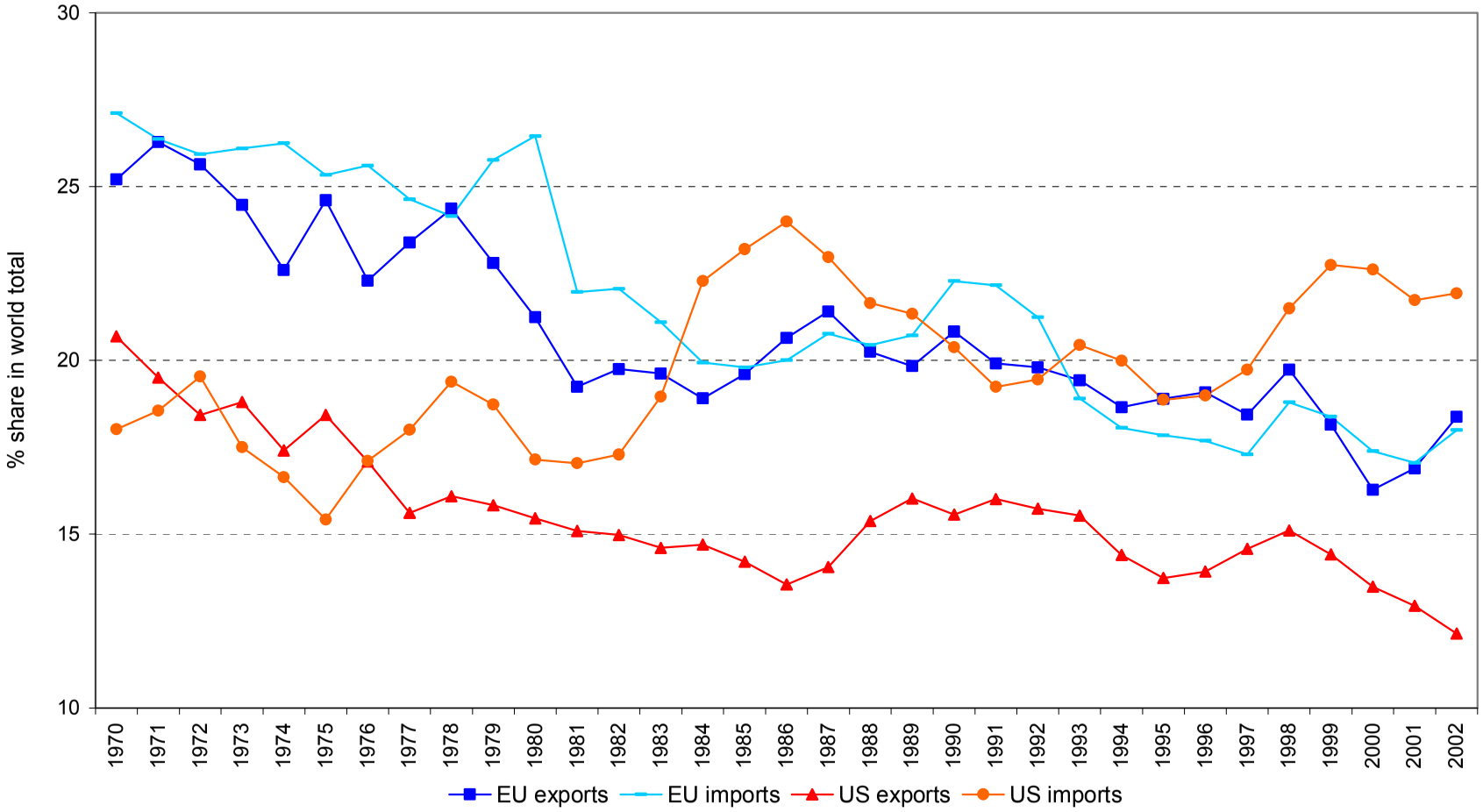
Source: Eurostat.

Table 2.1: Share of exports in world exports, EU, US and Japan
(in percent; data for 2002 are forecasts)

	Including intra-EU exports			**Excluding intra-EU exports**		
	EU	**US**	**Japan**	**EU**	**US**	**Japan**
1991-1995	39.9	11.2	9.1	**19.3**	**15.1**	**12.2**
1996-2000	36.8	11.1	7.3	18.3	14.3	9.4
1999	37	11.7	7.2	18.2	14.4	9.4
2000	33.2	10.8	7.2	16.3	13.5	9.1
2001	33.8	10.3	6.2	16.9	12.9	7.8
2002	36.1	9.5	6.4	**18.4**	**12.1**	**8.2**

Source: Commission services, AMECO data bank

Graph 2.3: Share in world trade of goods (excl. intra-EU)



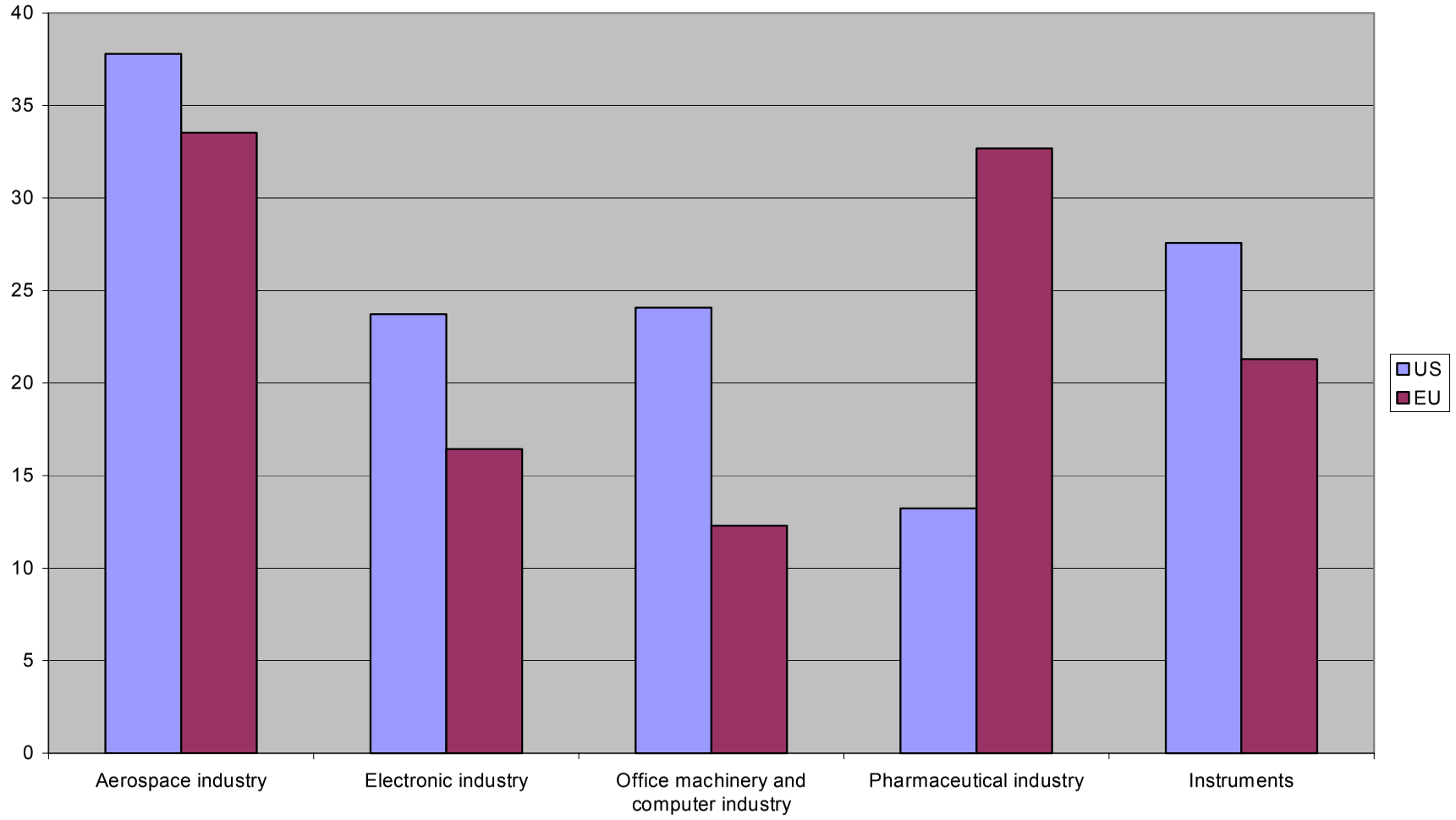
Source: AMECO data bank (*) incl. Only West Germany instead of FDR before 1991

Table 2.2: Export market shares of total OECD exports for Research Intensive Sectors.

European Union	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
70. Export market share: Aerospace industry	30,0	29,7	30,7	30,9	29,1	37,7	34,0	29,9	27,2	25,8	33,5
71. Export market share: Electronic industry	15,6	15,8	16,1	17,1	15,9	14,9	17,6	17,2	16,9	16,2	16,4
72. Export market share: Office machinery and computer industry	10,5	10,9	11,1	12,3	12,1	12,1	12,1	11,8	12,2	12,3	12,3
73. Export market share: Pharmaceutical industry	34,4	34,4	33,6	34,8	34,5	34,2	33,9	35,0	34,1	33,1	32,7
74. Export market share: Instruments	21,1	19,8	19,9	20,5	19,9	22,5	23,1	23,1	23,0	21,6	21,3
United States	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
70. Export market share: Aerospace industry	44,1	44,7	44,9	45,3	44,6	35,9	41,0	42,1	45,3	43,6	37,8
71. Export market share: Electronic industry	20,0	19,8	19,6	20,8	19,6	18,1	19,2	20,9	23,1	23,7	23,7
72. Export market share: Office machinery and computer industry	25,6	26,0	25,6	24,5	24,1	22,0	23,0	22,9	24,1	23,1	24,1
73. Export market share: Pharmaceutical industry	12,4	12,5	11,9	12,2	11,5	10,2	10,6	11,4	11,2	12,0	13,2
74. Export market share: Instruments	18,7	20,0	19,7	20,6	20,1	21,7	22,9	24,7	25,9	25,8	27,6

Source: OECD Main Science and Technology indicators (OLISNET)

Graph 2.4: Export market shares of total OECD exports for research intensive sectors (2000)



Note: The graph represents data from table 2.2. Source: OECD Main Science and Technology indicators (OLISNET)

Table 2.3: Contribution to the manufacturing trade balance

High-technology industries

	Total manufacturing		**Total**		Aircraft and spacecraft		Pharmaceuticals		Office, accounting and computing machinery		Radio, television and communication equipment		Medical, precision and optical instruments	
	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999
European Union	0,0	0,0	-1,4	-1,2	0,0	0,0	0,2	0,3	-0,8	-1,2	-0,7	-0,3	-0,1	-0,1
United States	0,0	0,0	5,3	5,0	4,2	3,3	0,3	0,1	0,7	-0,9	-0,9	1,2	1,1	1,2
Total OECD[2]	0,0	0,0	0,4	0,1	0,4	0,4	0,1	0,1	-0,3	-0,9	-0,1	0,2	0,2	0,2

Medium-high-technology industries

			Total		Electrical machinery and apparatus, n.e.c.		Motor vehicles, trailers and semi-trailers		Chemicals excluding pharmaceuticals		Railroad equipment and transport equipment, n.e.c		Machinery and equipment, n.e.c.	
			1990	1999	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999
European Union			2,3	1,8	0,2	0,1	0,7	0,2	-0,1	0,2		-0,1	1,5	1,4
United States			1,4	0,4	0,0	-0,1	-3,9	-3,3	3,2	2,1	-0,1	-0,1	2,2	1,8
Total OECD[2]			2,8	2,0	0,2	0,1	0,7	0,4	0,5	0,4	0,0	0,0	1,5	1,1

Medium-low-technology industries

	Total		Coke, refined petroleum products and nuclear fuel		Rubber and plastic products		Other non-metallic mineral products		Building and repairing of ships and boats		Basic metals		Fabricated metal products, except machinery and equipment	
	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999
European Union	-0,2	0,1	-0,3	0,0	0,0	0,1	0,2	0,2	0,1	0,1	-0,5	-0,4	0,2	0,1
United States	-2,2	-0,9	-1,1	-0,4	0,0	0,3	-0,2	-0,2	0,2	0,1	-0,8	-0,6	-0,2	0,0
Total OECD[2]	-0,8	-0,1	-0,7	-0,2	0,0	0,0	0,0	0,0	0,2	0,3	-0,3	-0,2	0,1	0,0

Low-technology industries														
			Total		Manufacturing, n.e.c. and recycling		Wood and products of wood and cork		Pulp, paper, paper products, printing and publishing		Food products, beverages and tobacco		Textiles, textile products, leather and footwear	
			1990	1999	1990	1999	1990	1999	1990	1999	1990	1999	1990	1999
European Union			-0,9	-0,9	0,0	-0,1	-0,2	-0,1	0,0	0,1	0,0	0,0	-0,7	-0,7
United States			-4,6	-4,5	-1,9	-1,8	-0,1	-0,5	0,4	0,5	1,0	0,6	-4,0	-3,3
Total OECD[2]			-2,6	-2,1	-0,6	-0,6	-0,2	-0,2	0,1	0,1	-0,3	-0,2	-1,6	-1,3

Note: The contribution to manufacturing trade balance indicates whether an industry trade balance performs relatively better or worse than the manufacturing total. This, for an industry *j,* is defined as

$$\left(X_j - M_j\right) - \left(X - M\right)\frac{\left(X_j + M_j\right)}{\left(X + M\right)}$$

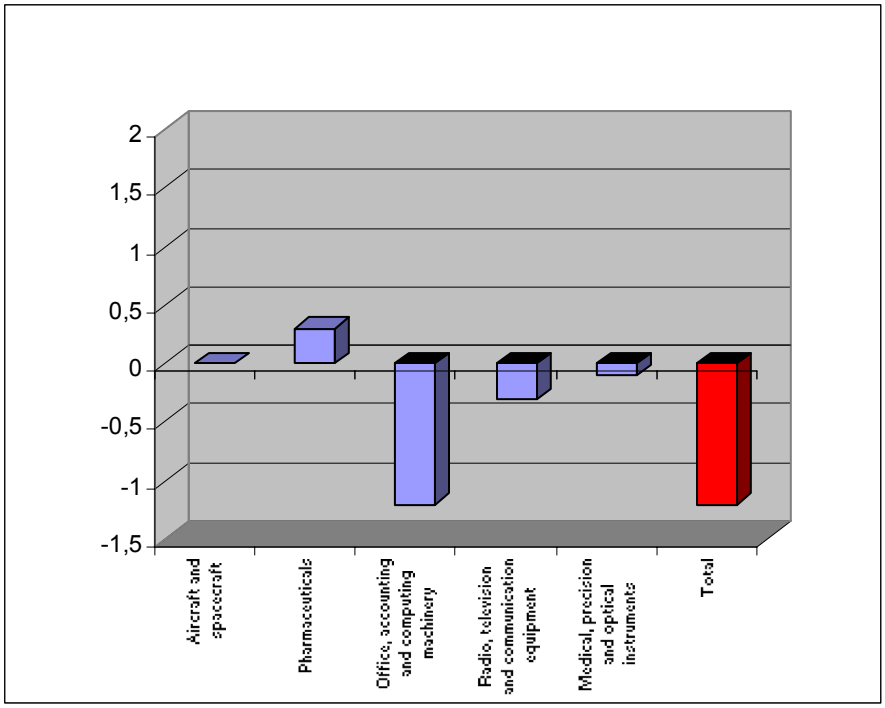
If there were no comparative advantage or disadvantage for any industry *j*, a country's total manufacturing trade balance should be distributed across industries according to their shares of total goods trade. The contribution to trade balance is the difference between the actual (the first term) and this theoretical balance (the second term). Cycle variations are dissipated by comparing an industry's trade balance with the overall manufacturing trade, hence a positive value for an industry indicates a structural surplus and a negative value a structural deficit.

Total OECD excludes Korea, Czech Republic, Hungary, Poland and Slovak Republic in 1990.

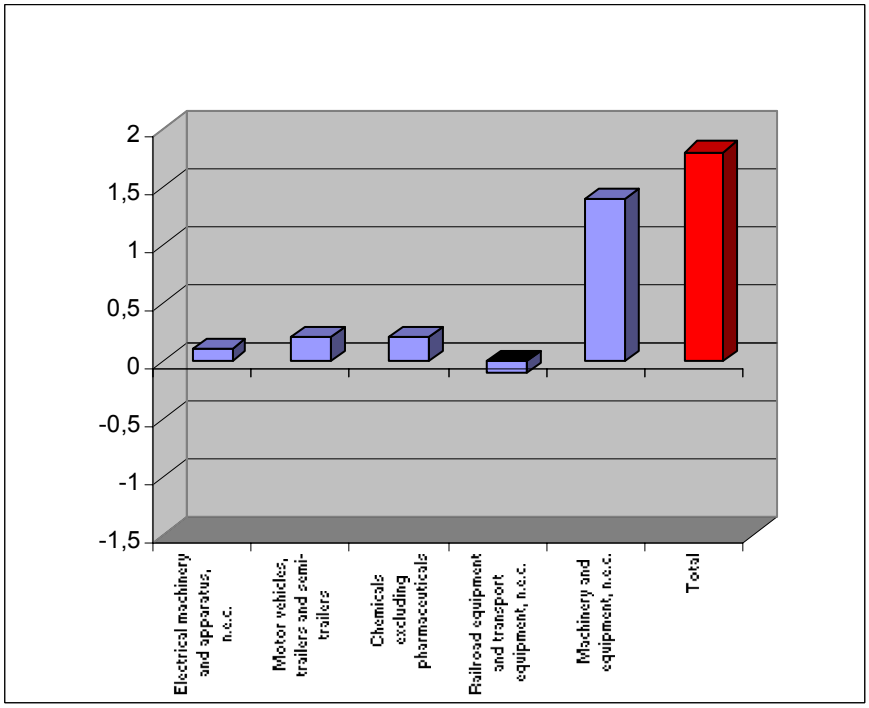
Source: OECD, STAN database, May 2001.

Graphs 2.5: Contribution to the manufacturing trade balance - 1999

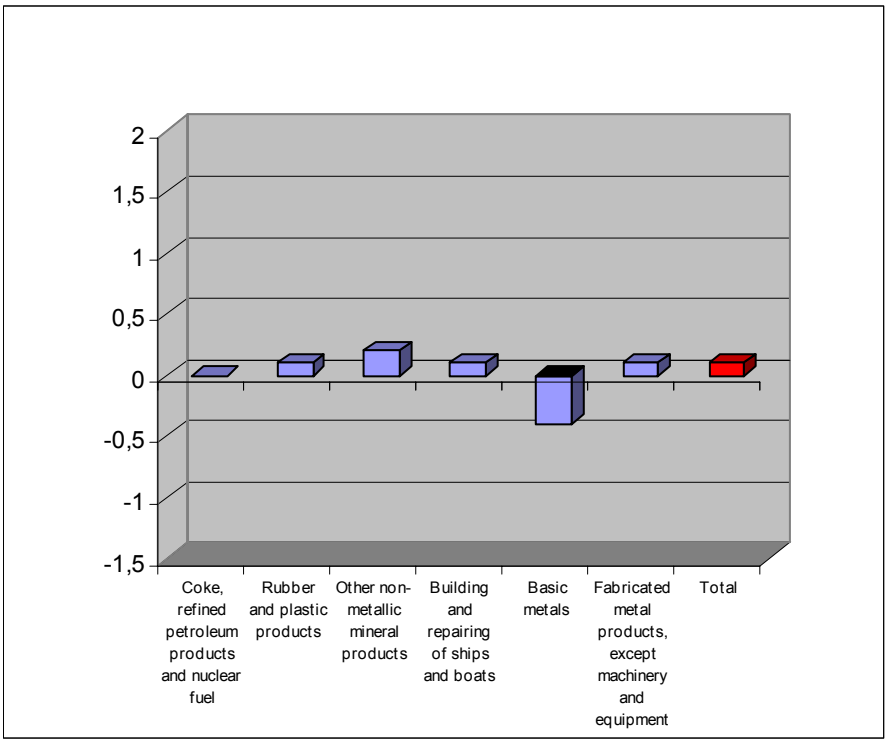
High Technology Industries



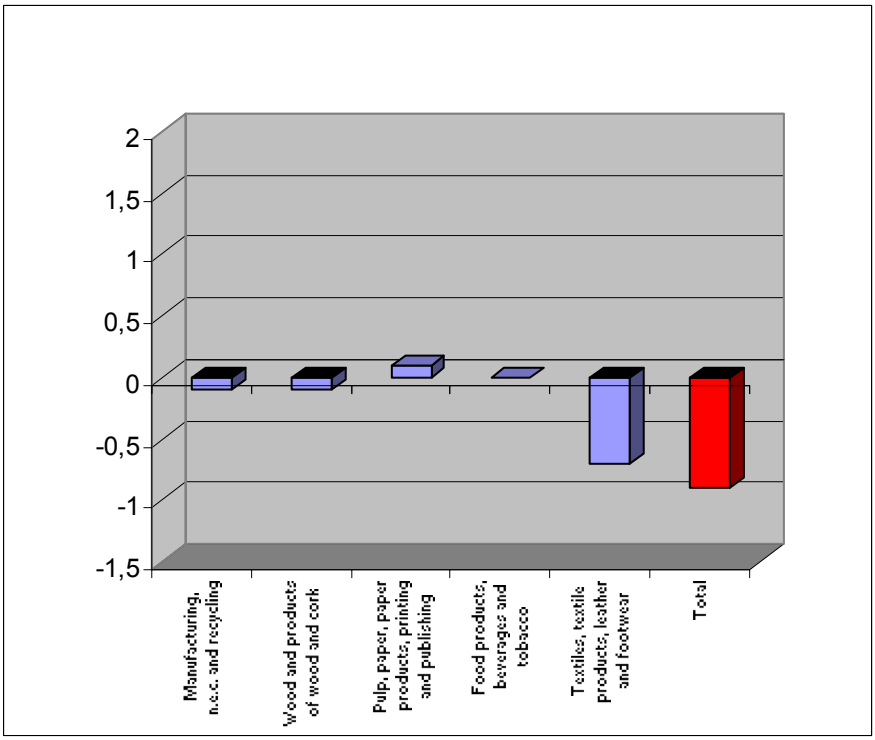
Medium-high-technology industries



Medium-low-technology industries



Low-technology industries



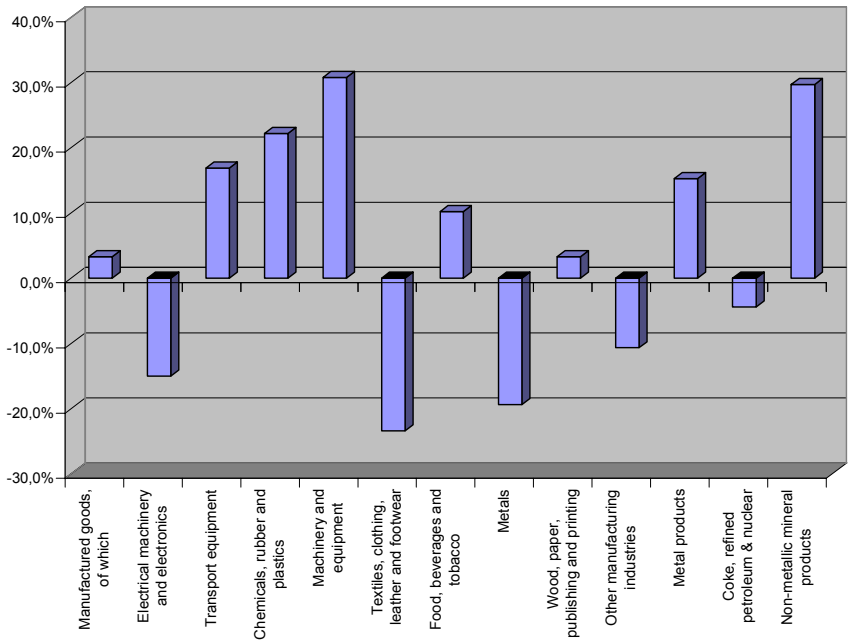
Note: The graphs represents data from table 2.3. Source: OECD Main Science and Technology indicators (OLISNET)

Table 2.4: EU-15 external trade with non-Community countries in manufacturing, 2000 (million EUR)

	Exports	*Imports*	*Trade balance*
Manufactured goods, of which	859,793	804,889	54,904
Electrical machinery and electronics	183,319	248,154	- 64,835
Transport equipment	150,614	107,157	43,457
Chemicals, rubber and plastics	142,869	91,044	51,825
Machinery and equipment	124,795	66,067	58,728
Textiles, clothing, leather and footwear	52,500	84,598	- 32,098
Food, beverages and tobacco	46,475	37,868	8,608
Metals	37,008	54,787	- 17,779
Wood, paper, publishing and printing	31,844	29,811	2,033
Other manufacturing industries	29,262	36,256	- 6,994
Metal products	24,098	17,725	6,373
Coke, refined petroleum & nuclear	20,656	22,559	- 1,904
Non-metallic mineral products	16,352	8,863	7,490
	859,793	804,889	54,904

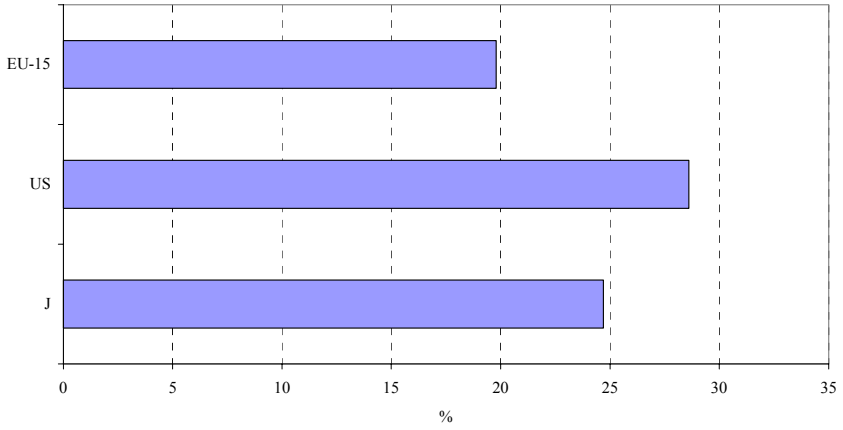
Source: Eurostat, Comext

Graph 2.6: EU-15 Comparative Advantage for manufacturing sectors (2000)



Note: The index of comparative advantage used is defined as net exports as a percentage of exports plus imports, for every industry *i*. It is defined between –1 and 1. Negative values are associated with a trade deficit, and positive values with a trade surplus. The graph is based on data from table 2.3.
Source: OECD Main Science and Technology indicators (OLISNET)

Graph 2.7: Share of high-technology products in total exports, 2001

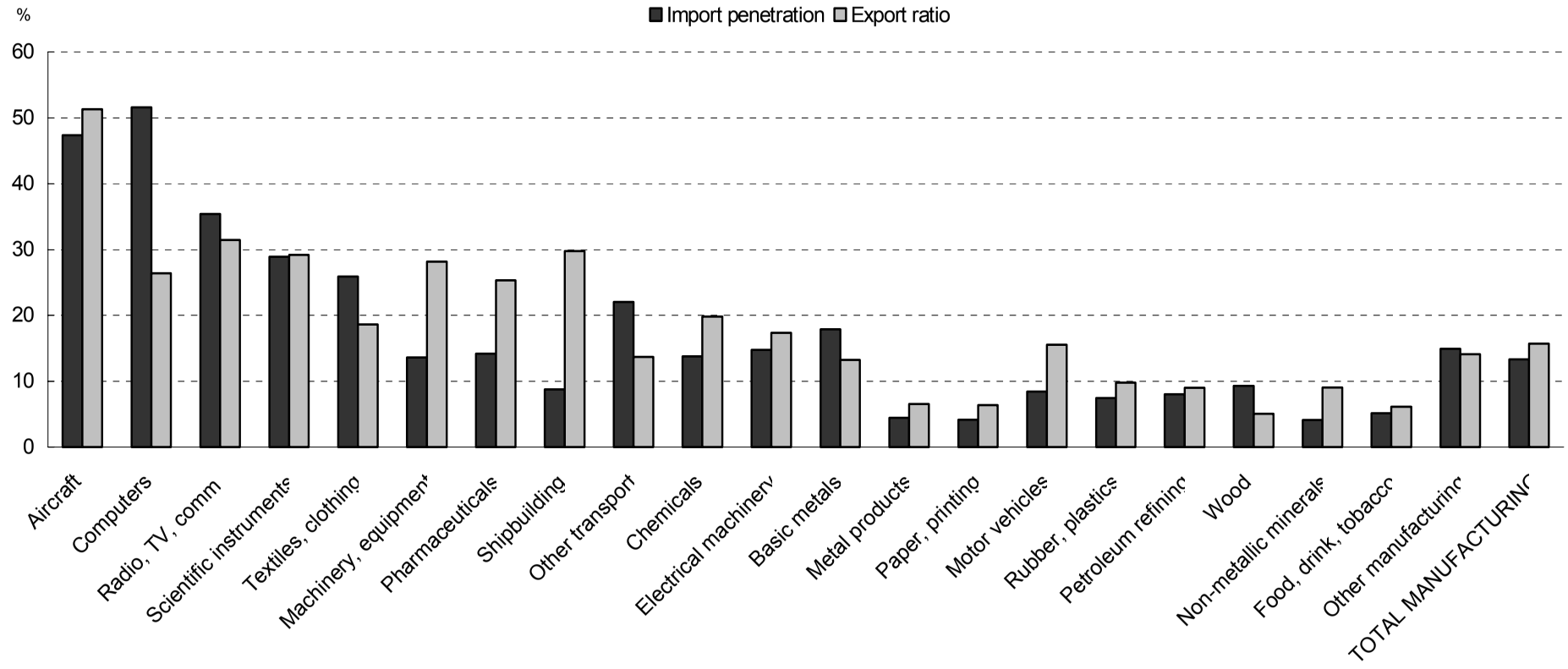


Source : Eurostat, New Cronos.

Index of global EU export performance : exports of goods and services divided by an index of market growth ; percentage change over preceding year; intra- and extra-EU trade Source: Commission Economic Forecasts (Spring 2002)	**2000: 0.7%** **2001: 1.3%** **2002: –0.5%** **2003: 0.1%**

Table 2.5: Recent Trends in Real Exchange Rates and Unit Labour Costs for the EU and for the EU Manufacturing Sector, EU – 15 ***(data for 2002 and 2003 are forecasts)***	
Real exchange rates	
Real exchange rate based on relative unit labour costs, total economy, EU against 24 industrial countries (index 1995 = 100)[1]	1995 = 100 2000: 81.3 2001: 82.0 2002:Q1: 81.0 2002:Q2: 82.5
Real exchange rate based on relative unit labour costs, manufacturing, EU against 24 industrial countries (index 1995 = 100)[1]	1995 = 100 2000: 84.6 2001: 86.0 2002:Q1: 85.0 2002:Q2: 86.9
Real exchange rate based on relative export prices, EU against 24 industrial countries (index 1995 = 100)[1]	1995 = 100 2000: 86.3 2001: 84.7 2002:Q1: 82.4 2002:Q2: 83.7
Real exchange rate against US based on relative unit labour costs, manufacturing, (percentage change over previous period)[1]	1980 – 2000 = 100 2000: 95.3 (–4.7%) 2001: 94.0 (–6.0%) 2002:Q1: 93.7 (–6.3%) 2002:Q2: 98.0 (–2.0%) 2002:Q3: 104.7 (4.7%)
Unit Labour Costs	
Unit labour costs, total economy (percentage change over previous period)[2]	1996 – 2000 average: 1.4% 2000: 1.8% 2001: 3% 2002: 2.5% 2003: 1.7%
Real unit labour costs, total economy (deflated by the GDP deflator; percentage change over previous period)[2]	1996 – 2000 average: -0.4% 2000: 0.3% 2001: 0.7% 2002: 0.2% 2003: -0.3%
Unit labour costs in manufacturing, EU–14[3] (excluding Ireland; index 1996–2000 = 100 and percentage change)	1996—2000: 100 2000: 99.3 2001: 101.6 2002: 103.2 2003: 103.8
Notes: 1 = AMECO data bank and *Quarterly Data on Price and Cost Competitiveness of the European Union and its Member States*, DG ECFIN**;** 2 = DG ECFIN *Economic Forecasts*, Autumn 2002; 3 = *European Competitiveness Report 2001*, Table IV.1 for the average, otherwise source 2;	

Graph 2.8: Import penetration and export ratio of the EU, 1998

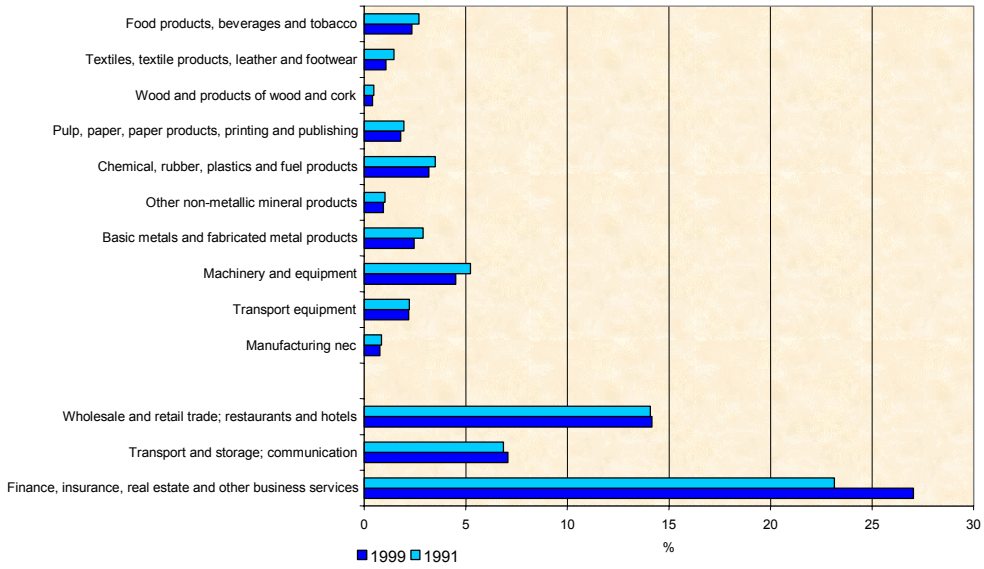


Note: Data refer only to Germany, France, UK, Italy, Spain, Sweden, Denmark and Finland. Intra-EU trade is excluded. *The export ratio* for industry *i* is defined as the ratio between production of goods in industry *i* and exports from industry *i*. *The import penetration ratio* for industry *i* is defined as the ratio between imports and domestic consumption, consumption being defined as total output minus net exports.

Source: OECD, STAN database, May 2001

3. INTERNAL SPECIALISATION

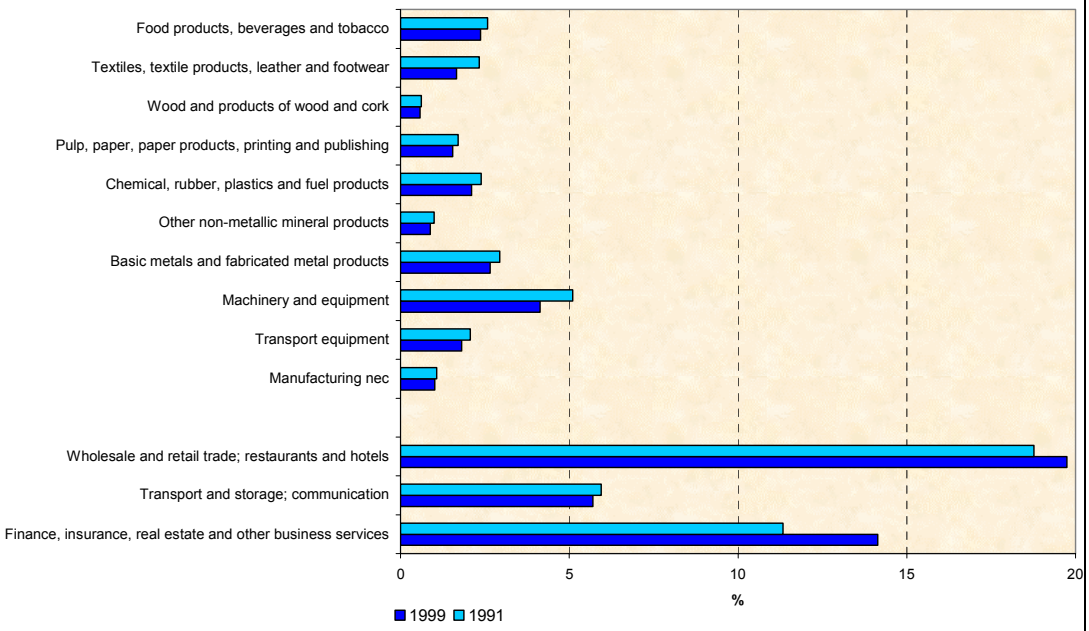
Graph 3.1: Share of selected manufacturing and business service sectors in EU (*) Value Added



(*) EU-15 excl. EL, IRL, L, P.

Source: OECD, STAN database, 2001,2002.

Graph 3.2: Share of selected manufacturing and business service sectors in EU (*) employment



(*) EU-15 excl. EL, IRL, L, NL, P.

Source: OECD, STAN database, 2001,2002.

4. PRODUCTIVITY DEVELOPMENTS

Table 4.1: Labour productivity in EU Member States, US and Japan in 1975-2001

(average annual growth of GDP/employed person in per cent, ranked according to performance in 1995-2001)

	1975-1985	1985-1990	1990-1995	1995-2001	2001	Labour productivity in 2001 (US=100)
Ireland	3,5	3,5	2,7	4,0	4,1	90
Greece	1,0	0,5	0,7	3,0	3,0	64
Portugal	3,3	4,6	2,3	2,9	0,2	49
Finland	2,4	3,0	3,2	2,1	- 0,8	77
Austria	2,4	2,6	2,1	1,7	1,1	89
Sweden	1,1	1,4	2,8	1,7	- 0,4	69
United Kingdom	2,1	1,5	2,7	1,5	1,6	73
Luxembourg	2,2	3,1	1,2	1,5	- 1,4	108
Belgium	2,5	2,2	1,6	1,4	0,1	92
Denmark	1,6	1,2	2,2	1,4	0,9	78
France	2,4	2,4	1,5	1,2	- 0,2	87
Germany	2,0	1,9	1,5	1,0	0,4	74
Italy	2,1	2,1	2,1	0,9	0,3	83
Spain	3,2	1,2	2,0	0,7	0,4	73
Netherlands	2,0	1,1	1,2	0,7	- 0,4	94
EU-15	**2,2**	**1,9**	**1,9**	**1,2**	**0,5**	**78**
United States	**1,2**	**1,0**	**1,2**	**1,9**	**1,2**	**100**
Japan	**2,9**	**3,8**	**0,6**	**1,2**	**- 0,3**	**67**

Note: Growth rates were calculated on the basis of GDP at constant 1995 prices and national currencies, while the 2001 productivity levels are based on GDP at current market prices and PPS

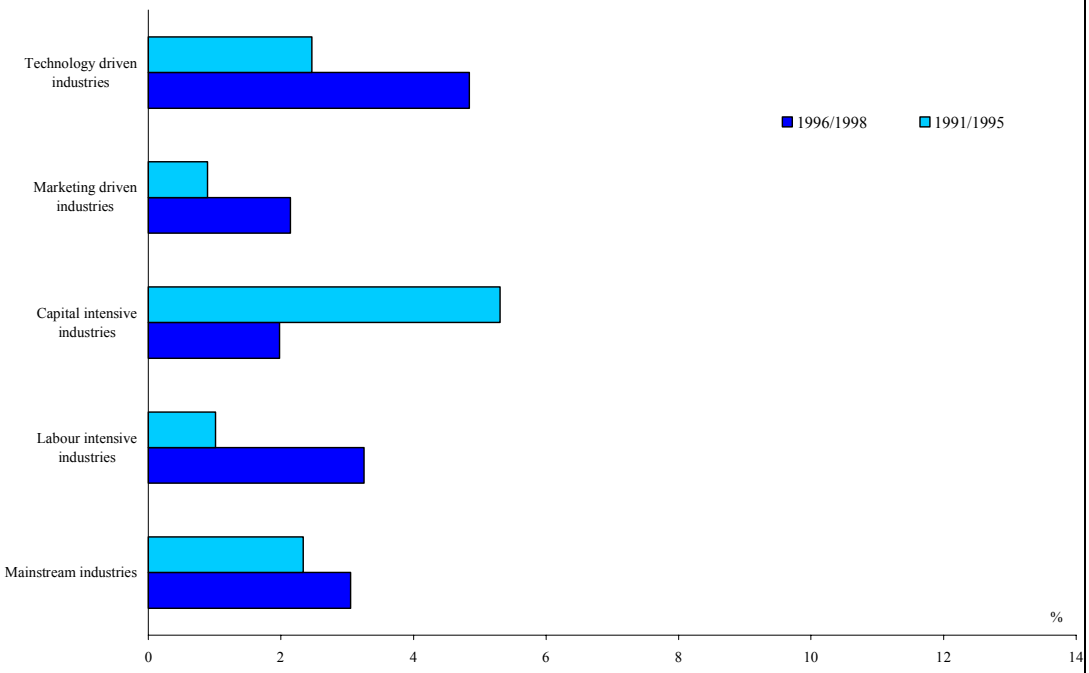
Source: European Competitiveness Report 2002.

Table 4.2: Productivity growth in manufacturing					
	Growth p.a. in per cent				**Acceleration Second half of the 1990s minus first half**
	1986/1990	1991/1995	1996/2000	1991/2000	
Belgium	3,4	3,9	3,9	3,9	0,0
Denmark	2,6	1,5	3,3	2,4	1,8
Germany	2,0	2,6	4,9	3,8	2,3
Greece	0,5	3,6	4,2	3,9	0,6
Spain	2,1	4,2	- 1,4	1,3	- 5,6
France	3,8	0,7	3,2	1,9	2,5
Ireland	7,7	6,8	9,2	8,0	2,3
Italy	3,8	3,1	1,2	2,2	- 2,0
Netherlands	0,0	2,7	2,9	2,8	0,3
Austria	5,8	4,8	6,1	5,4	1,3
Portugal	5,0	0,5	1,8	1,2	1,3
Finland	4,6	4,9	8,8	6,8	3,9
Sweden	2,1	7,2	3,4	5,3	- 3,8
United Kingdom	3,5	4,3	3,0	3,7	- 1,3
EU	**3,0**	**3,0**	**3,2**	**3,1**	**0,1**
Japan	4,0	1,0	3,0	2,0	2,1
US	**2,3**	**3,1**	**5,5**	**4,3**	**2,3**
Standard deviation EU countries	2,05	2,00	2,78	2,04	
Standard deviation Triad	0,86	1,22	1,37	1,15	

Source: WIFO calculations using EUROSTAT data (New Cronos); 1999-2000 estimate, Economic Forecasts 2000-2002 (European Commission).

Labour productivity growth, manufacturing **(percentage change over previous period)** Source: Commission Economic Forecasts (Spring 2002)	**1996 – 2001: 3.2%** **2000: 4.4%** **2001: 0.9%** **2002: 1.4%** **2003: 2.5%**

Graph 4.1: Productivity growth by type of industry in the EU

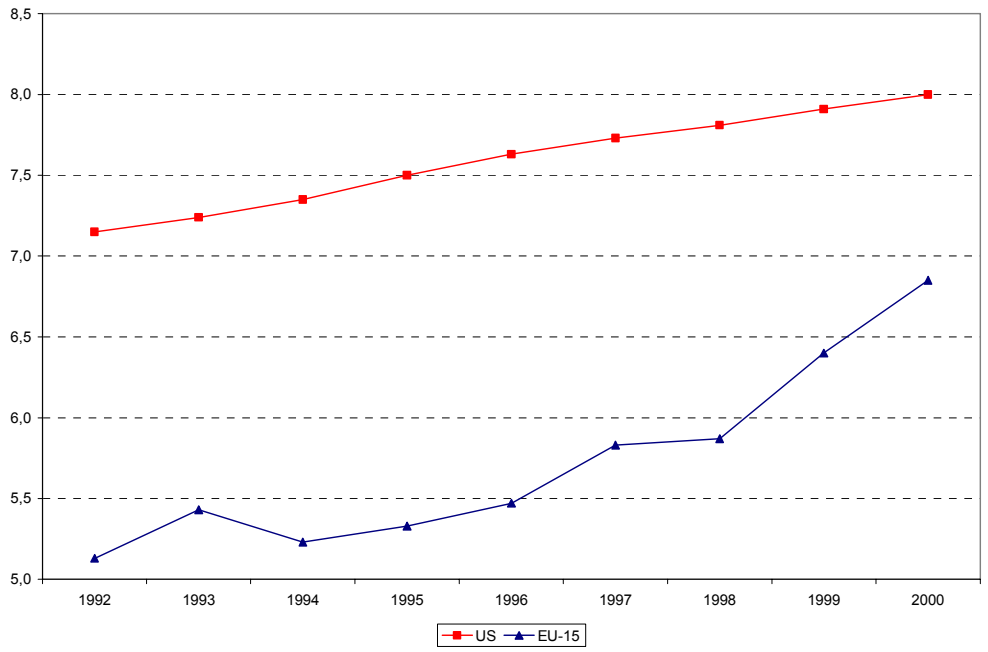


Note: Productivity is measured ad real value added per employee.

Source: WIFO calculations using Eurostat (New Cronos).

5. ICT SPENDING

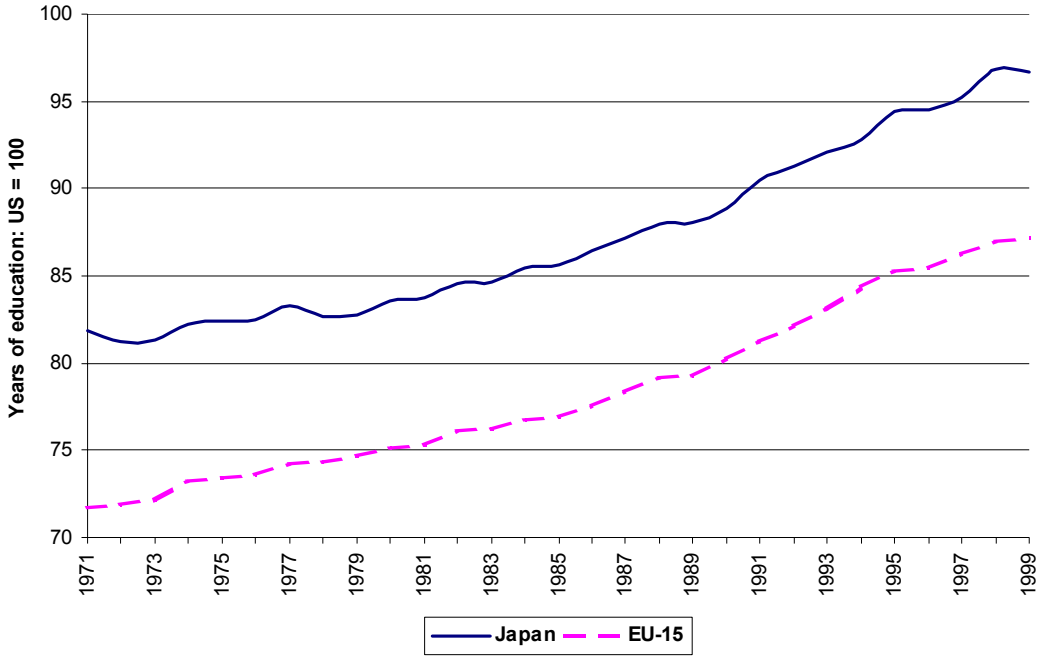
Graph 5.1: ICT expenditure as a % of GDP



Source: Eurostat, Structural Indicators.

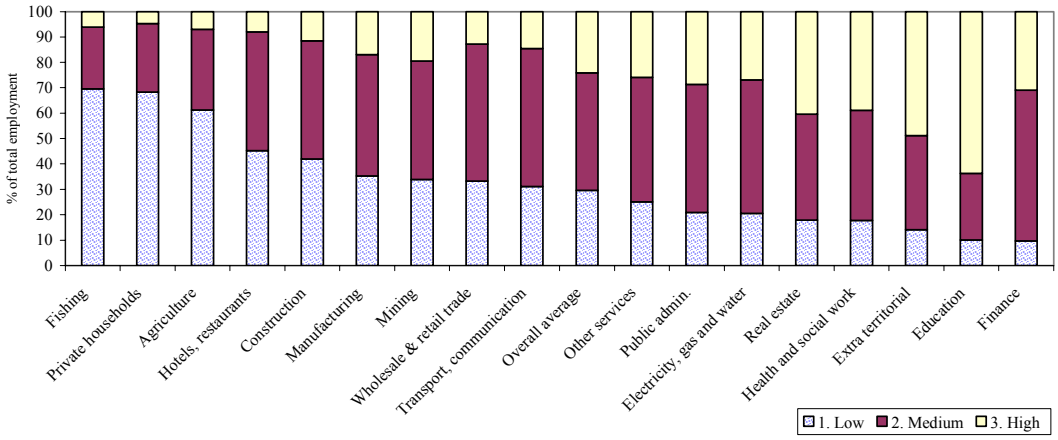
6. HUMAN CAPITAL

Graph 6.1: Average years of education of the working population, 1971-1999
(Average years of US education = 100)



Source: Calculated from de la Fuente and Domenech (2001) and extended using OECD (2001) data and de la Fuente and Domenech's (2001) perpetual inventory method and graduation weights

Graph 6.2: Distribution of educational attainment of employees by economic activity; EU-15, 2000



Note: Low education: lower secondary education or less; medium: upper secondary education; high: tertiary education. NACE 1-digit sectors.

Source: European Commission, European Competitiveness Report 2002.

Table 6.1: Total expenditure on education as percentage of GDP

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Belgium	:	:	:	:				5,2%	5,6%	:	:
Denmark	:	:	:	:	7, 7%	8,1%	7,9%	8,2%	8,0%	:	:
Germany	:	:	:	:	4,7%	4,8%	4,7%	4,7%	:	:	:
Greece	:	:	2,7%	3,0%	2,9%	3,1%	3,4%	3,5%	3,7%	3,5%	3,5%
Spain	:	4,8%	4,9%	4,7%	4,7%	4,7%	4,5%	4,5%	4,5%	4,5%	4,5%
France	5,4%	5,6%	5,9%	5,9%	6,0%	6,0%	6,0%	5, 9%	5,9%	5,8%	5,8%
Ireland	6,0%	6,0%	6,1%	6,1%	5,7%	5,9%	5,7%	5,3%	5,0%	4, 8%	:
Italy	5,4%	5,4%	5,4%	5,0%	4,9%	4,9%	4,6%	4,6%	4,6%	4,6%	4,5%
Luxembourg	:	:	:	:	4,3%	4,0%	4,1%	:	:	:	:
Netherlands	5,1%	5,4%	5,2%	5,1%	5,0%	5,0%	4,8%	4,9%	4,8%	4,9%	4,9%
Austria	:	:	:	:	6,5%	6,4%	6,3%	6,3%	6,3%	:	:
Portugal	:	:	:	:	5,4%	5,5%	5,6%	5,6%	5,7%	:	:
Finland	7,3%	7,3%	6,9%	6,7%	6,9%	7,0%	6,5%	6,2%	6,2%	6,0%	:
Sweden	:	:	7,6%	7,5%	7,5%	7,6%	7,9%	8,0%	7,7%	8,4%	8,3%
United Kingdom	5,0%	5,2%	5,2%	5,2%	5,0%	4,8%	4,7%	4,6%	4,6%	4,9%	4,8%
EU	**5,7%**	**5,7%**	**5,5%**	**5,4%**	**5,4%**	**5,4%**	**5,3%**	**5,4%**	**5,2%**	**5,2%**	**5,0%**

Source: Eurostat

7. SMEs AND ENTREPRENEURSHIP

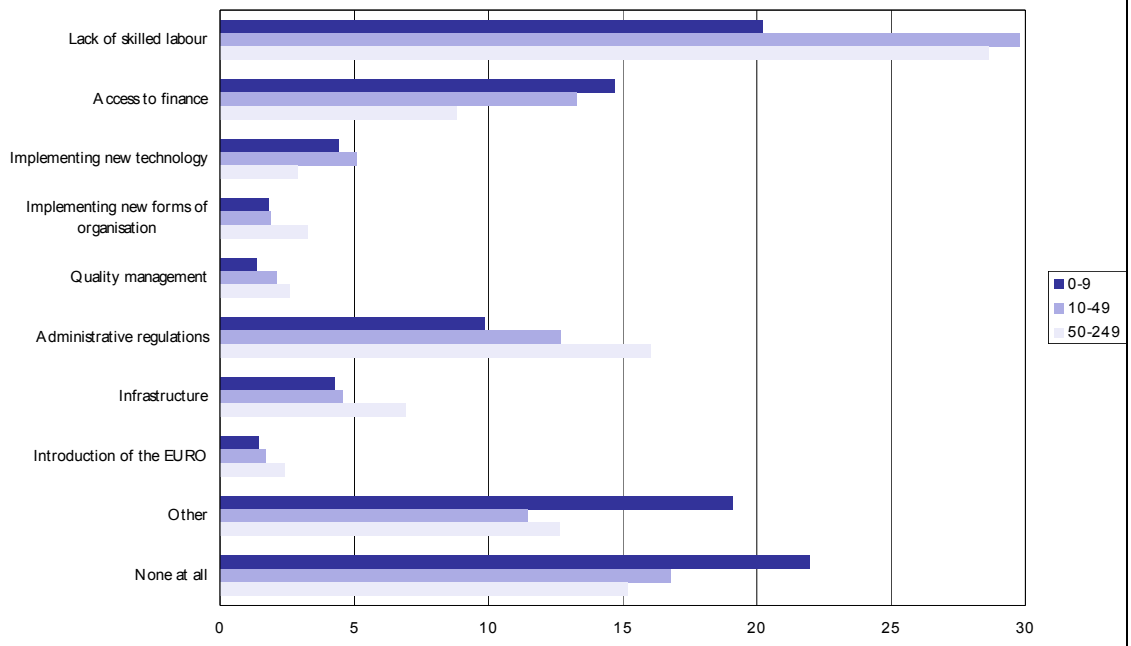
Table 7.1: Employment, productivity and export propensity by enterprise size[1]

	Micro: <10 employees	Small: 10-49 employees	Medium: 50-249 employees	Total SMEs	Large: 250- employees
Europe-19[2] (2001)					
Share in total employment (%)	34	19	13	66	34
Labour productivity (€ 1000)[3]	40	75	105	65	115
Share of exports in turnover (%)	7	14	17	13	21
Share of value added (EU15, 2000)	21	20	19	60	40
Candidate countries[4] (1999)					
Share in total employment (%)	40	15	17	72	28

Source: European Commission (2002): SMEs in Europe, including a first glance at EU candidate countries. Observatory of European SMEs, No. 2. For value added: Structural Business Statistics (Eurostat), based on incomplete country data.

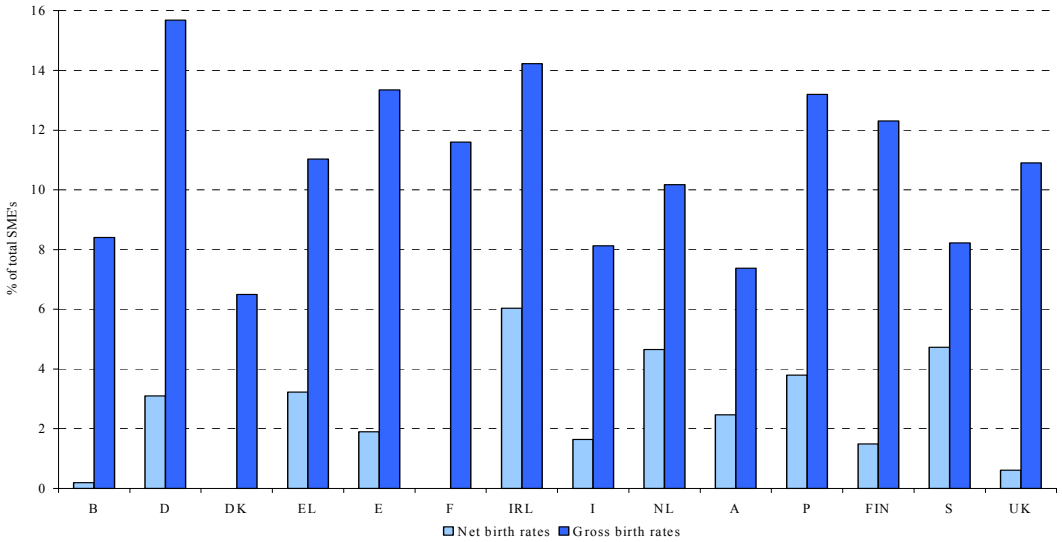
Notes:
1 Private enterprises (excl. the primary sector)
2 Euroupe-19 refers to EU-15, Iceland, Liechtenstein, Norway and Switzerland
3 Labour productivity defined as value added per occupied person
4 Candidate countries: Estonia, Czech Republic, Lithuania, Latvia, Slovenia, Poland, Hungary, Bulgaria, Slovakia, Romania, Turkey, Cyprus, Malta

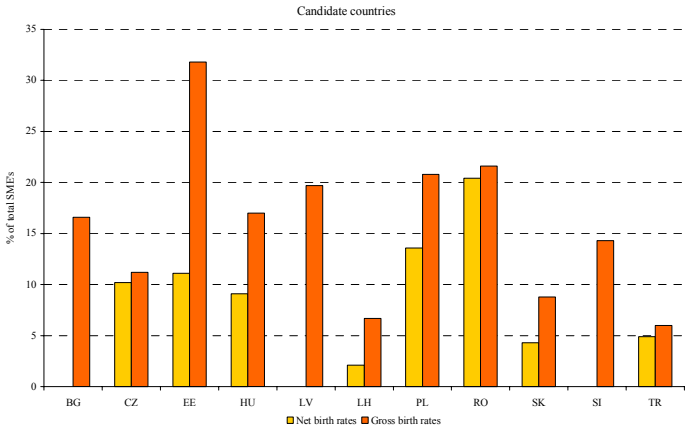
Graph 7.1: Major business constraint 2001, by size of enterprise (% of SMEs)

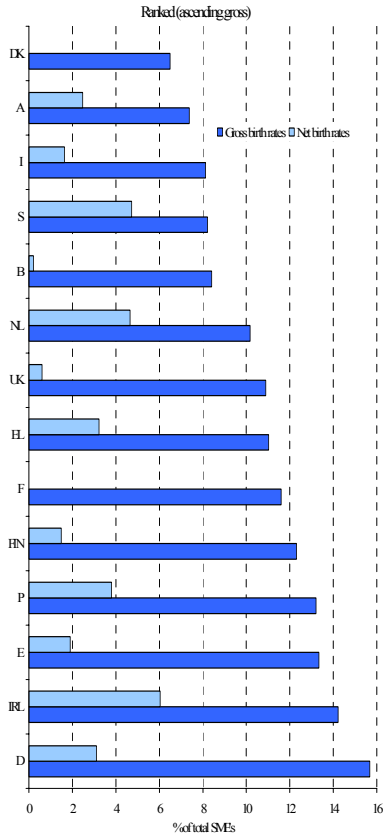


Source: Weighted data 2001 ENSR Survey on SMEs. From *Observatory of European, SMEs 2002*, No 1, Highlights from the 2001 Survey, European Commission.

Graph 7.2: Net- and gross-birth rates of enterprises



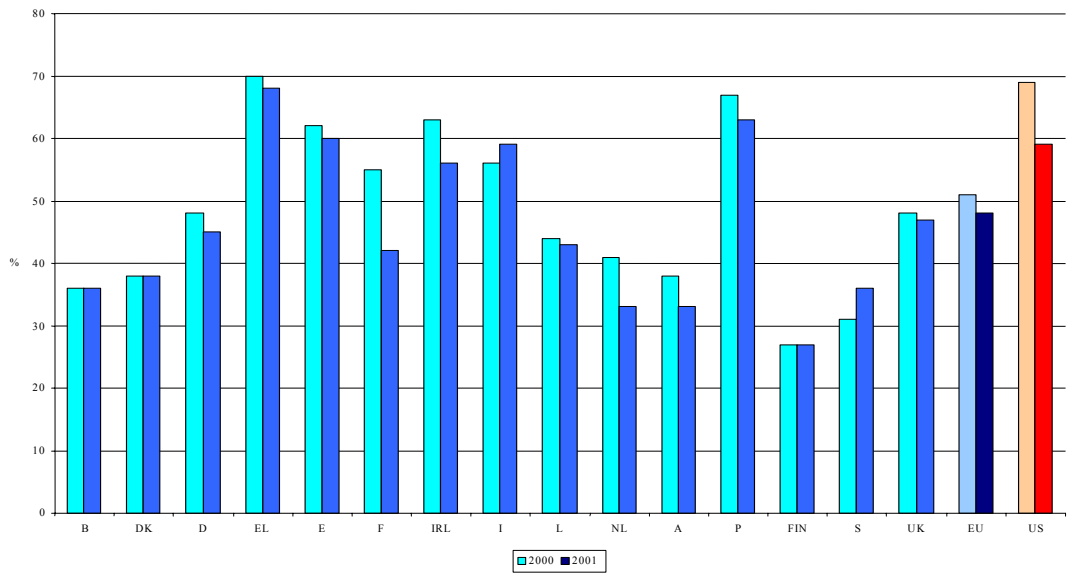




Comment on data: Data are based on national sources, which differ in definitions. They represent an average of the years 1995 to 2000, however, for most of the countries only fewer years are available (Spain, Sweden, Portugal, Ireland, Greece, Germany and Finland). Only Gross-birth rates are available for Denmark (6.4 %) and France (11.8 %), no data are available for Luxembourg.

Source: European Commission (2002): Business Demography in Europe", *Observatory of European SMEs*, 2002/5, Enterprise Directorate-General.

Graph 7.3: Propensity towards entrepreneurship, 2000 and 2001

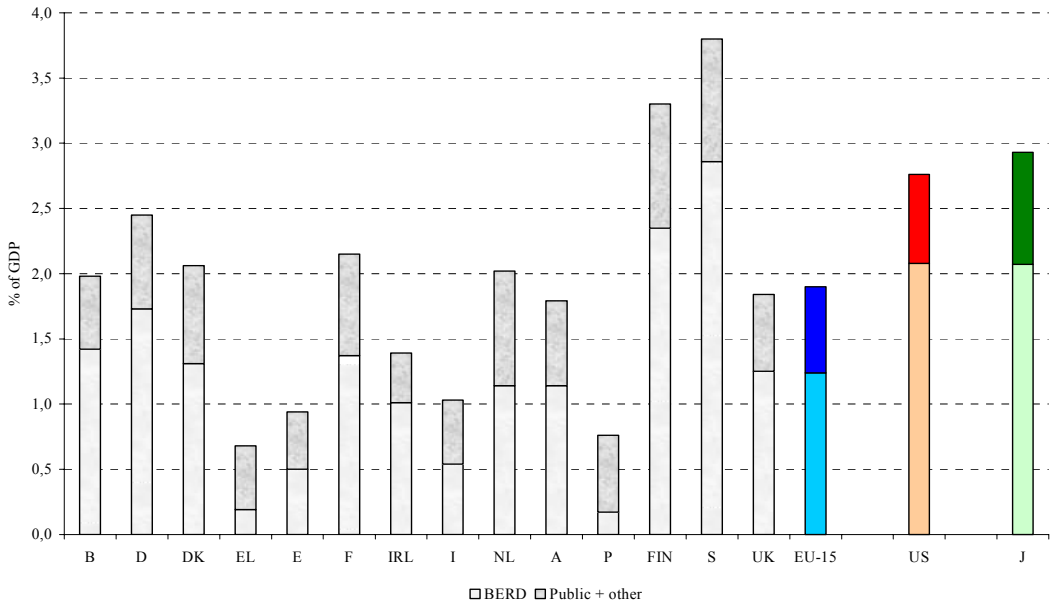


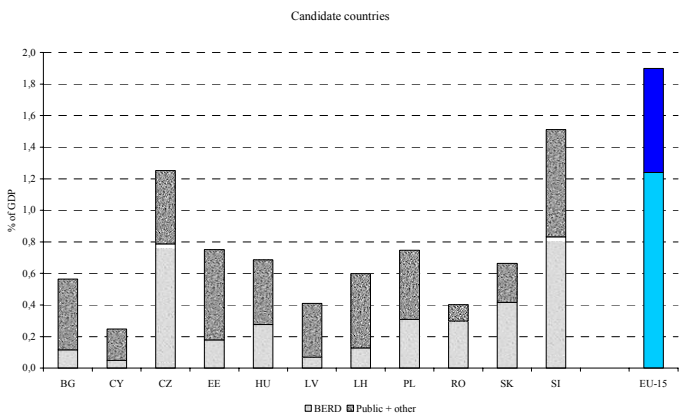
Source: European Commission (2002): *Flash-Eurobarometer* no 107; and European Commission (2001), *Flash Eurobarometer* no 83

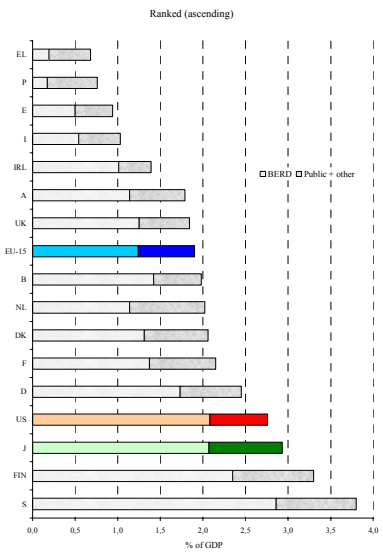
Note: The index represents the percentage of people polled in the Flash-Eurobarometer survey who would consider becoming self-employed.

8. INNOVATION

Graph 8.1: R&D expenditure as percentage of GDP (latest year available)







Definition: BERD = R&D performed in the business enterprise sector, regardless of the origin of funding. Public spending on R&D includes government, higher education, non profit, etc.

Years: 2001: UK

2000: D, ES, F, FIN, US, LT

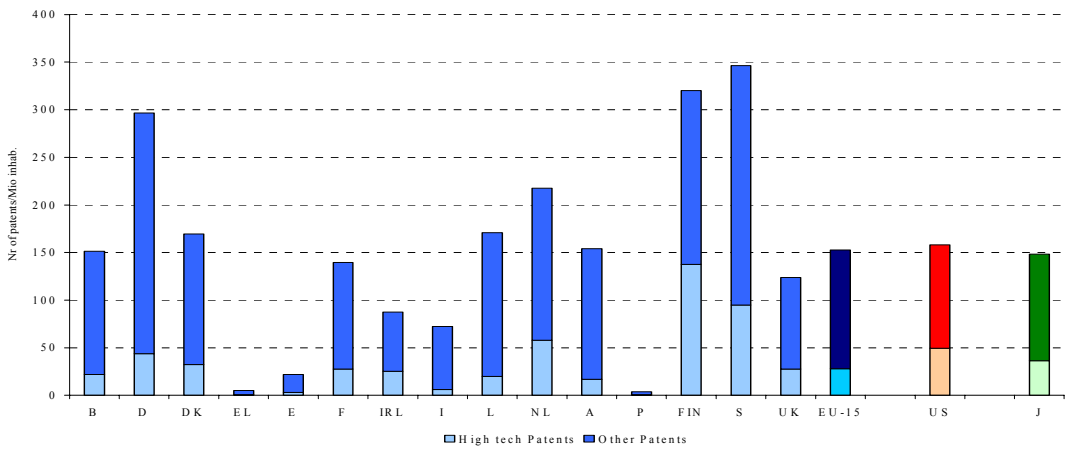
1999: B, EL, I , NL, P, S, J, BG, CY, EE, HU, LV, PL, RO, SL, SK

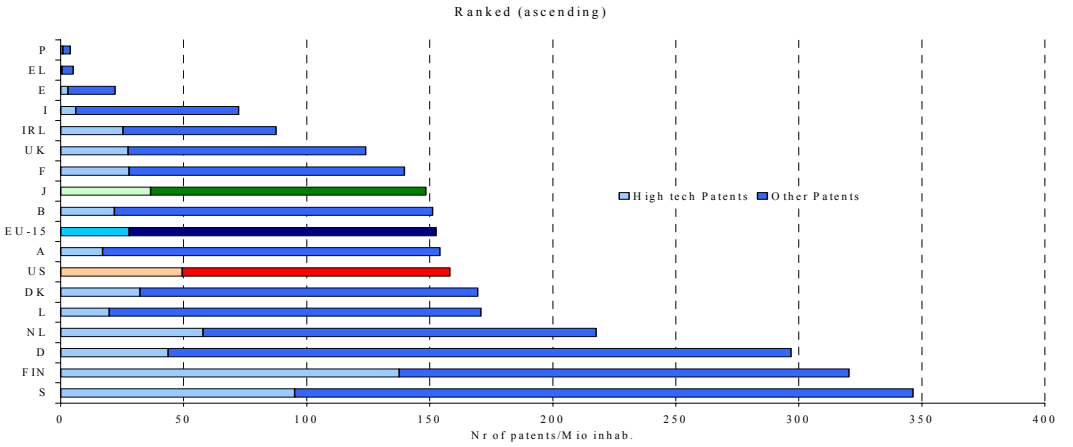
1998: A

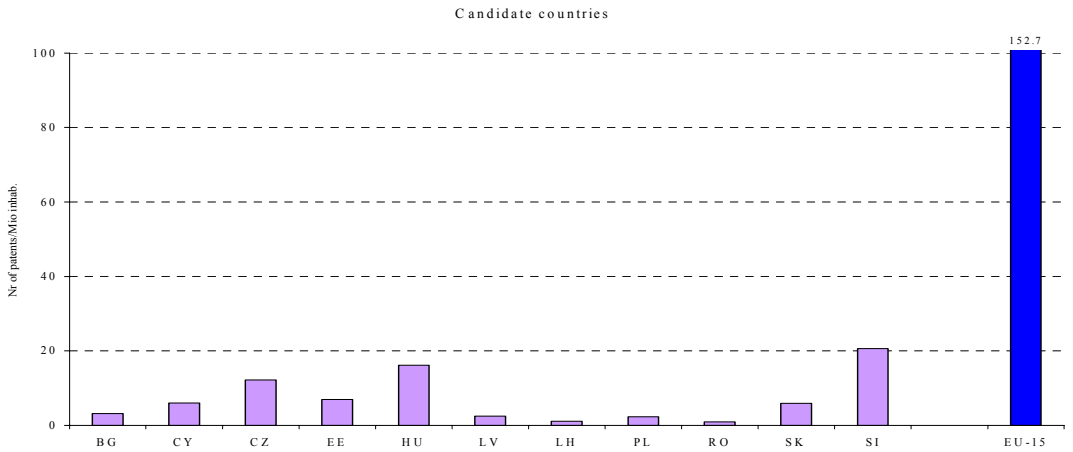
1997: IRL

Source: ESTAT (2002): *Structural Indicators*.

Graph 8.2: Number of patents/ high tech patents per million inhabitants, 2000





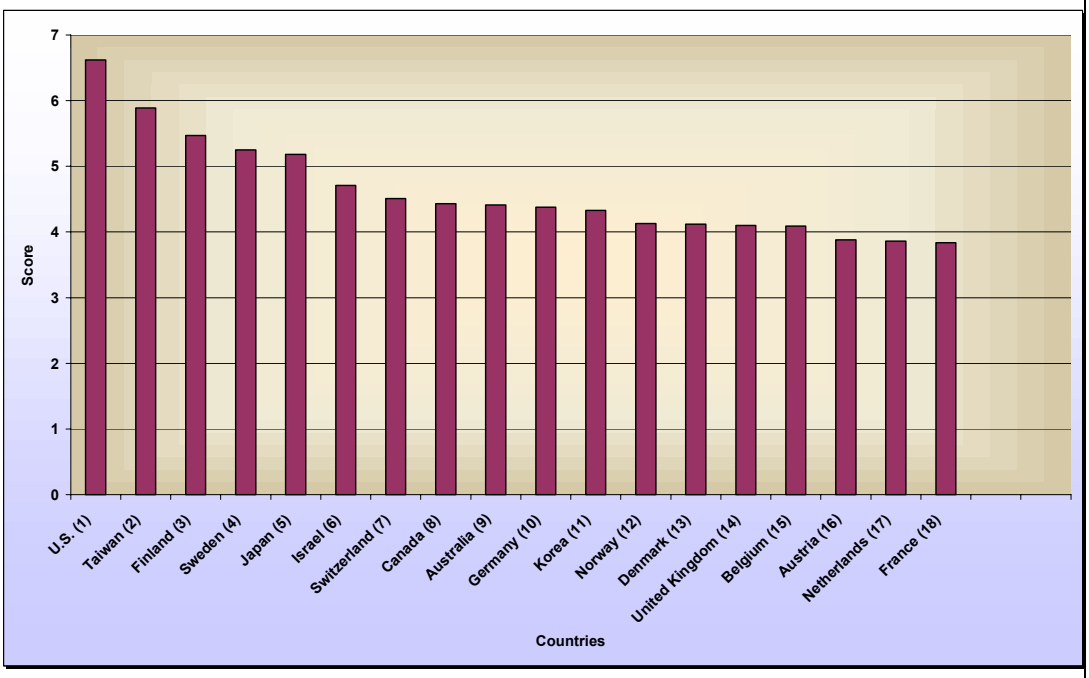


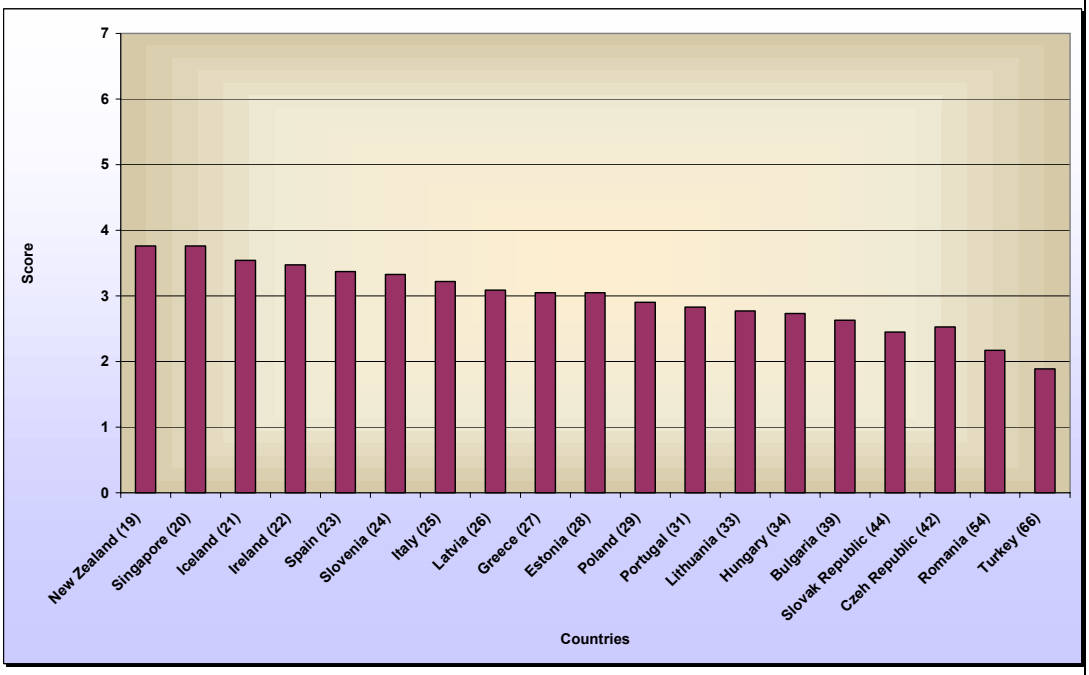
Note on data: The use of EPO data might underestimate the US and Japan performance.

Definition: Patent application rates in the high technology patent classes (pharmaceuticals, aerospace, biotechnology and information technology).

Source: ESTAT (2002): *Structural Indicators* (European Patent Office data

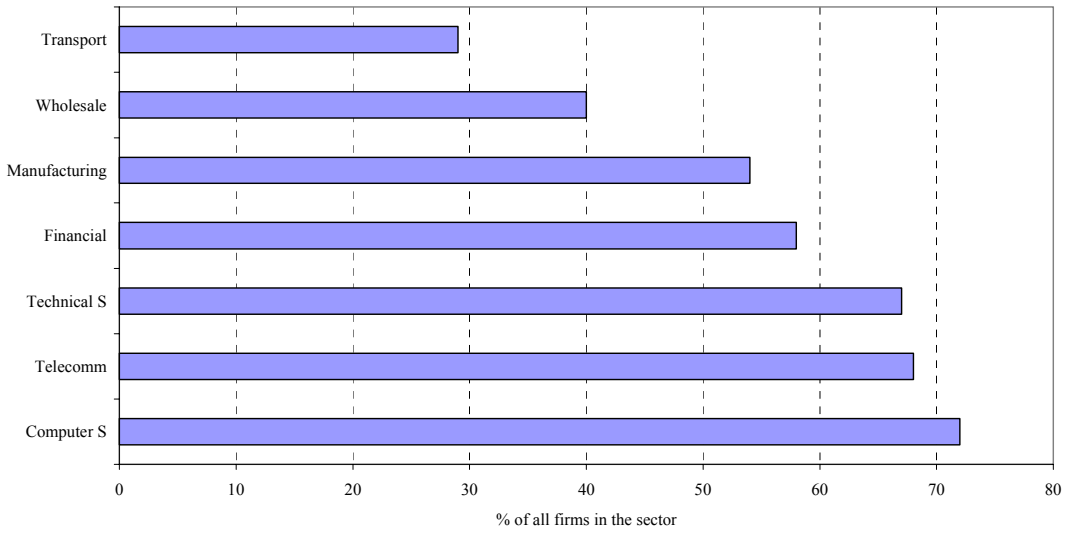
Graph 8.4: Innovation capacity index





Source: World Competitiveness Report 2002/03

Graph 8.5: Share of firms with innovative activity

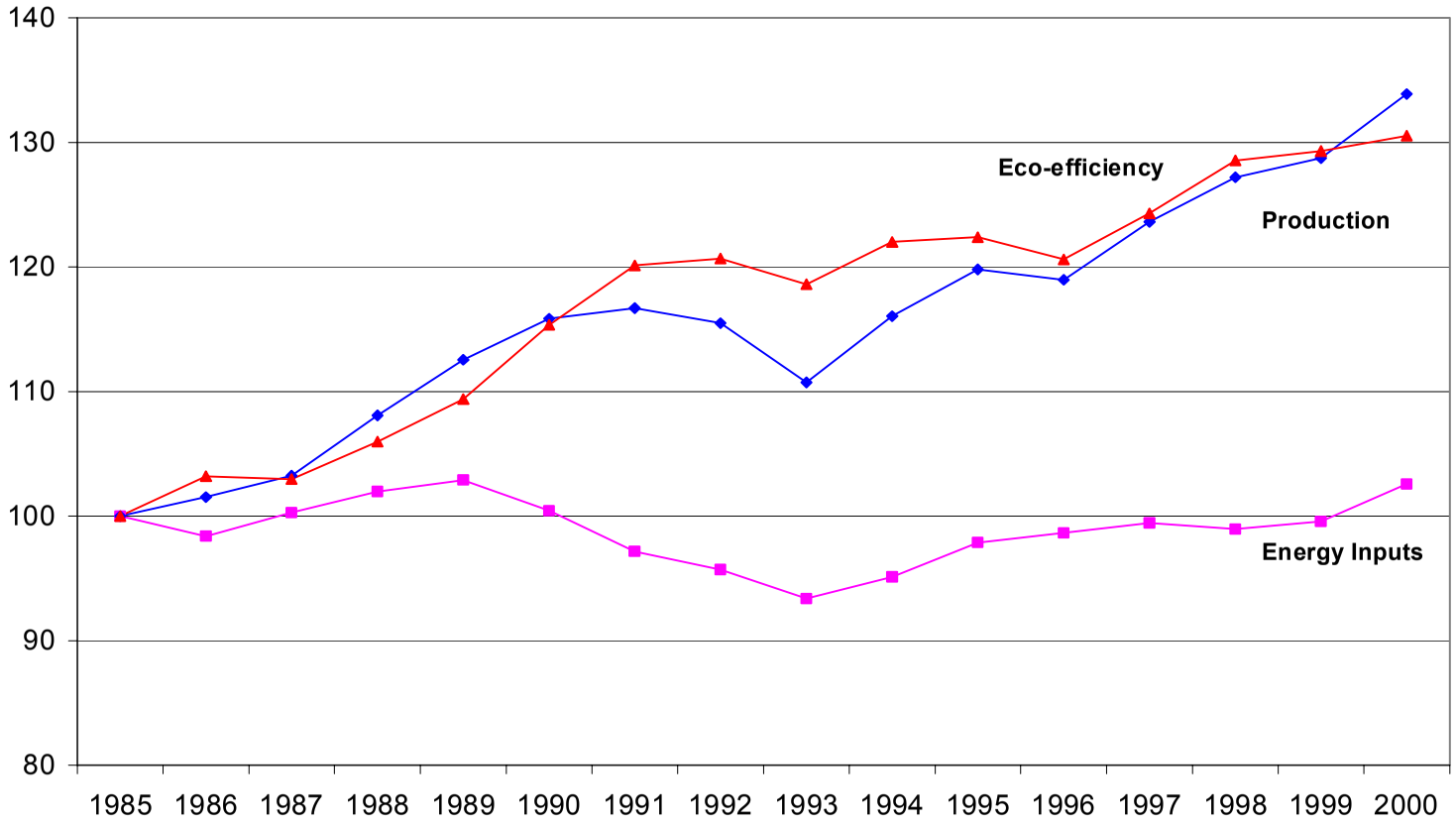


Note: The data are for 1996 and cover the EU Member States except Greece, Spain and Italy; in addition, Norway is included.

Source: EIMS (2001): Analysis of the CIS-2 data on innovation in the service sector, final report.

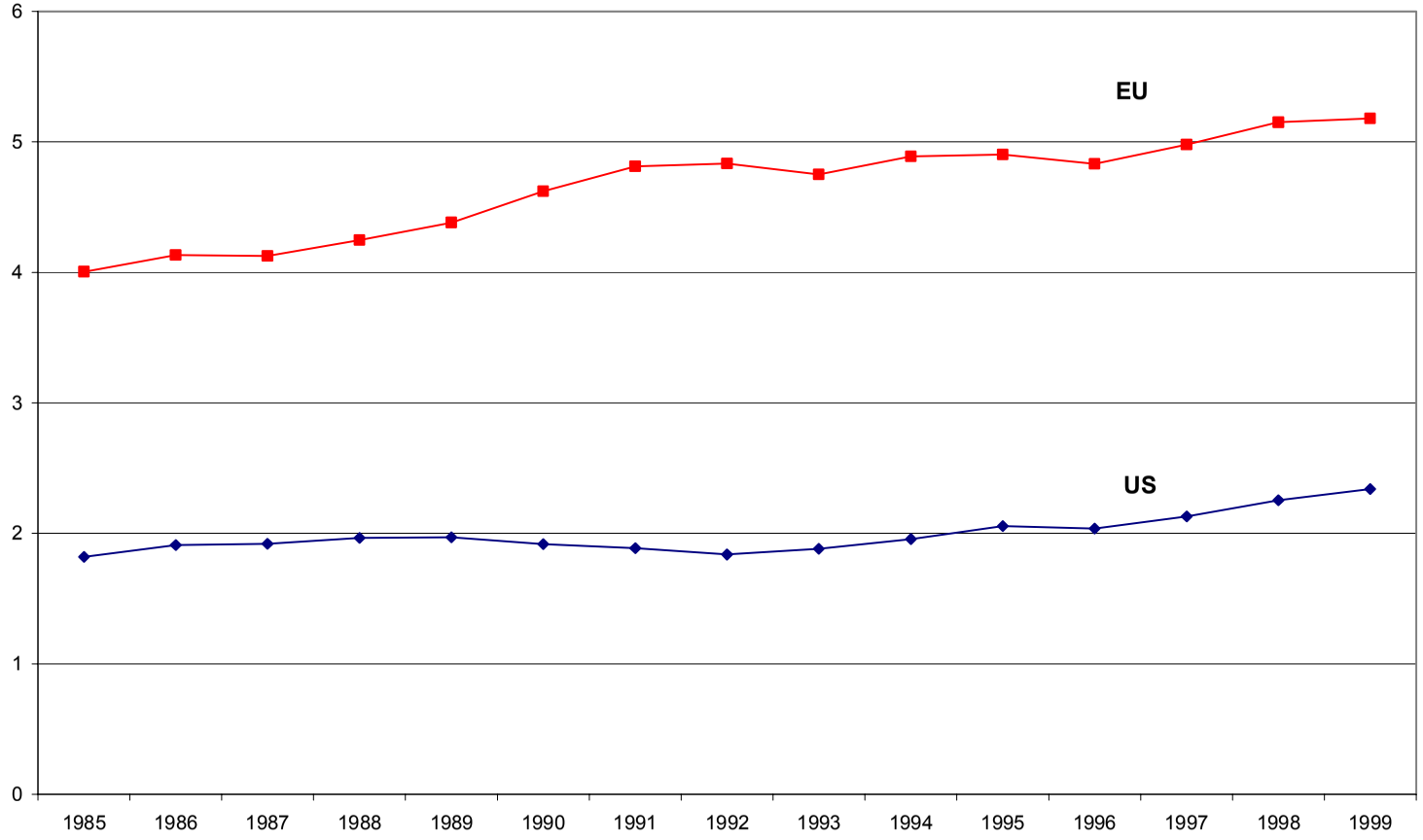
9. ENVIRONMENTAL PERFORMANCE

Graph 9.1: Energy efficiency of manufacturing. Index 1985=100



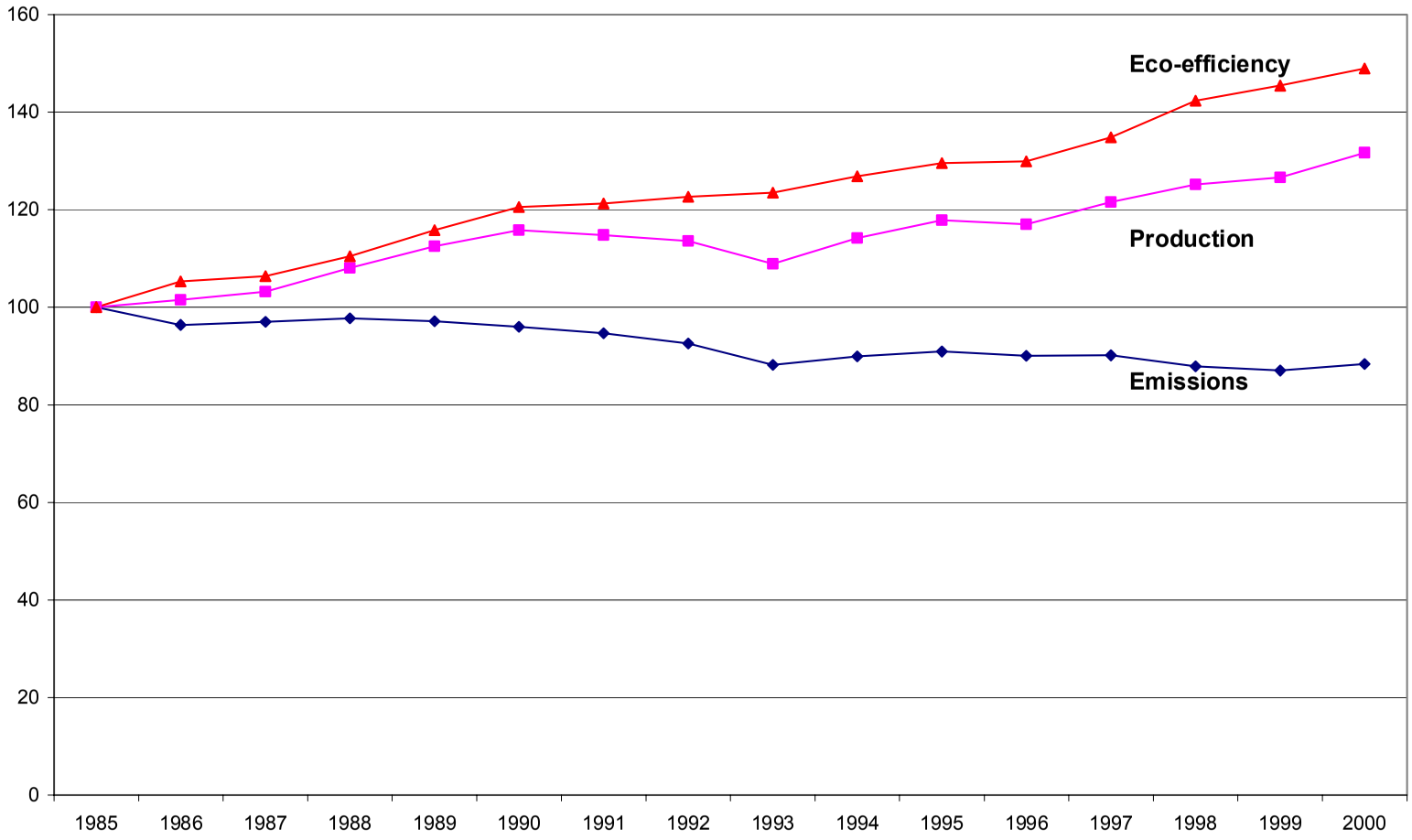
Note: **Energy-efficiency** is defined as production divided by energy inputs. **Production**: Value added in manufacturing output ESA 95 (National accounts definition NACE rev.1, section D) in EUR millions at 95 constant prices. (Source: ESTAT, New Cronos and Commission Services). **Energy Inputs**: Final energy consumption (all products) by industry in ktonnes of oil equivalent. (Source: ESTAT, New Cronos).

Graph 9.2: Comparison of Energy-efficiency of manufacturing: EU vs. US (million € per 1000TOE)



Note: Energy efficiency is defined as production divided by energy inputs. **EU Data** sources and definitions are the same as for Graph IV.1. **Production (US data)**: Value added in Manufacturing output (National accounts definition) at constant prices of 1995 converted to EUR millions at 1995 purchasing power parity exchange rates. (Source: 1987-1999, United States Bureau of Economic Analysis; 1980-1987, Federal Reserve Board, http://w3.access.gpo.gov/usbudget/fy2003/erp.html#erp3). **Energy Inputs (US Data)**: Primary Energy consumption by industry in ktonnes of Oil Equivalent. (Source: United States Energy Information Administration: http://www.eia.doe.gov/emeu/international/total.html#IntlConsumption)

Graph 9.3: Eco-efficiency of EU Manufacturing Industry: CO2 Emissions Index 1985 = 100



Note: **Eco-efficiency** is defined as production divided by CO_2 emissions. **Production**: Value added in manufacturing output ESA 95 (National accounts definition NACE rev.1, section D) in EUR millions at 95 constant prices. (Source: ESTAT, New Cronos and Commission Services). **Carbon Dioxide emissions:** ktonnes CO_2. (Source: New Chronos database, Eurostat, updated).