



Statistics in focus

INDUSTRY, TRADE AND SERVICES

THEME 4 – 18/2003

Contents

A variable source of employment and value-added across the EU2

A source of job growth in most countries3

SMEs of varying importance in the sector4

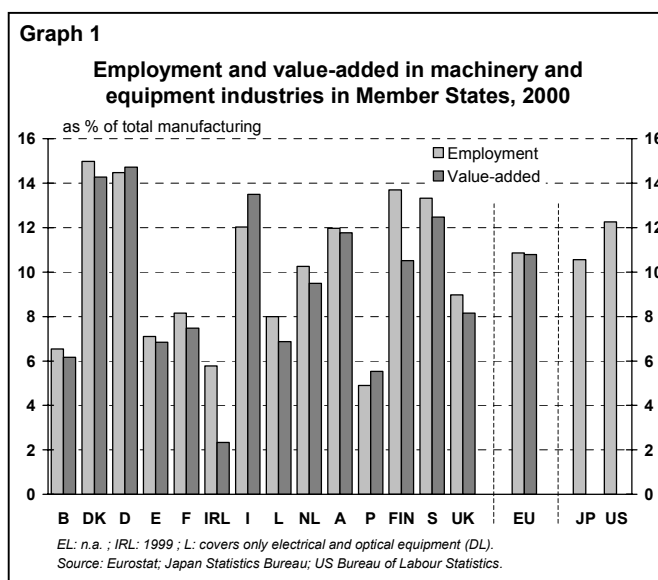
A sector with few women employed and slightly higher than average skill levels5

A major contributor to EU net exports.....5

Machinery and equipment industries in the EU

Walter Sura

The machinery and equipment sector (NACE Rev.1, division 29) covers industries producing all types of machinery and tools, both those for general use and those specific to a particular manufacturing process. The sector includes manufacturers of domestic appliances, agricultural machinery and armaments as well as of machine tools (see "methodological notes" for the complete list of industries covered). Many of the products of the sector are intermediate goods which enter into the manufacture of other goods or are capital equipment used by other industries. The industries included in the sector are particularly vulnerable to cyclical fluctuations in economic activity. Not only are their main customers other manufacturers but a large part of their sales is directly linked to investment which tends to vary much more than in proportion to activity.



According to the Structural Business Statistics (SBS), Machinery and equipment industries employed just over 3 million people in the European Union in 2000, or some 11% of the total working in manufacturing, and were responsible for a similar proportion of manufacturing value-added (Graph 1). The relative importance of the sector in the EU in terms of employment was much the same as in the US and Japan. Germany was both the main contributor to the value-added produced by the sector in the EU and the Member State specialising most in machinery and equipment (Table 1).

Table 1: Importance of machinery and equipment industries in the EU and Member States, 2000

Sector	Total EU employment (in 1000)	Total EU value-added (EUR billion)	Main contributor to EU value-added	Most specialised Member State	Least specialised Member State
General purpose ind. machinery (29.1+29.2)	1 524.0	77.9	Germany	Denmark	Luxembourg
Agricultural and forestry machinery (29.3)	170.7	7.8	Germany	Denmark	Luxembourg
Machine tools (29.4)	277.1	15.0	Germany	Germany	Ireland
Special purpose and machinery (29.5)	803.0	41.4	Germany	Finland	Ireland
Weapons and ammunition (29.6)	52.4	2.9	UK	Sweden	Ireland
Domestic appliances n.e.c. (29.7)	236.9	11.5	Germany	Italy	Belgium
Machinery ind. equipment industries (DK)	3 069.6	156.7	Germany	Germany	Ireland
Total manufacturing (D)	28 253.0	1 453.1	---	---	---

Notes: EL: n.a.; IRL: 1999. The most specialised Member State is the country for which the share of total manufacturing value-added accounted for by machinery and equipment industries is highest in relation to the average share in the EU. The least specialised Member State is the country where this ratio is the lowest.
Source: Eurostat, unless otherwise mentioned.

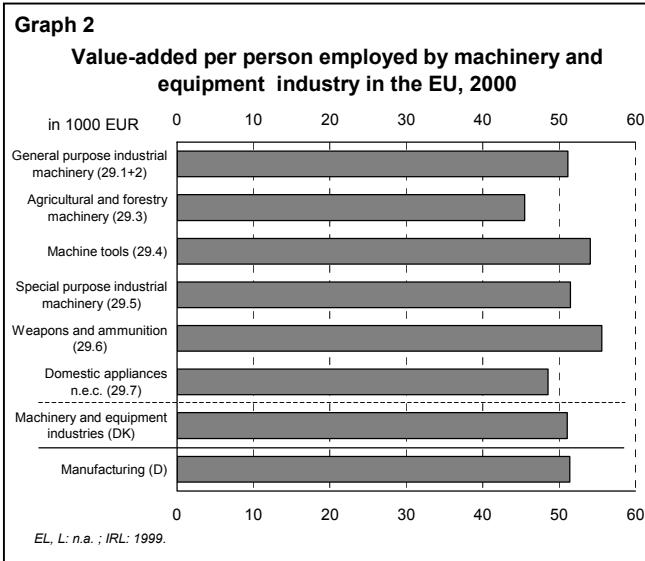


A variable source of employment and value-added across the EU

The importance of the machinery and equipment industries varies across the Union, accounting for around 14-15% of both manufacturing employment and value-added in Denmark and Germany, but for only around 8% in France, 6-7% in Belgium, Spain and around 5% in Portugal. Within the machinery and equipment sector, enterprises producing general purpose industrial machines (i.e. NACE Rev.1 groups 29.1 and 29.2) were responsible for around half of employment and value-added in the sector as a whole in the EU and those producing special purpose industrial machines, other than machine tools, for another quarter (Table 2). The remainder of employment and value-added was divided between firms producing agricultural machinery, machine tools, domestic appliances and armaments. The last made up only some 2% of the sector as a whole (in terms of both employment and value-added), though its importance may be understated given the tendency to under-record arms sales. The division of the sector between industries was relatively similar across the Union, though machine tools were particularly important in Germany, domestic appliances in Ireland and armaments in Sweden and the UK.

As a corollary of the similarity in the relative importance of the sector for both employment and value-added, value-added per person employed in machinery and equipment (a reasonable estimate of labour productivity given the limited extent of part-time working) was much

the same as the average for manufacturing as a whole. Within the sector, it varied from 88% of the manufacturing average in agricultural machinery to 108% in armaments (Graph 2).



In individual Member States, labour productivity in the sector varied more widely in relation to that in the rest of manufacturing, in part reflecting differences in the division of employment between industries within the sector. In most countries, value-added per person employed was lower in machinery and equipment than in total manufacturing, the only exceptions being Germany, Italy and Portugal. In Finland, labour productivity in the sector was 23% below the average level in manufacturing (Table 2).

Table 2: Employment, value-added and value-added per person employed in manufacturing of machinery and equipment, 2000

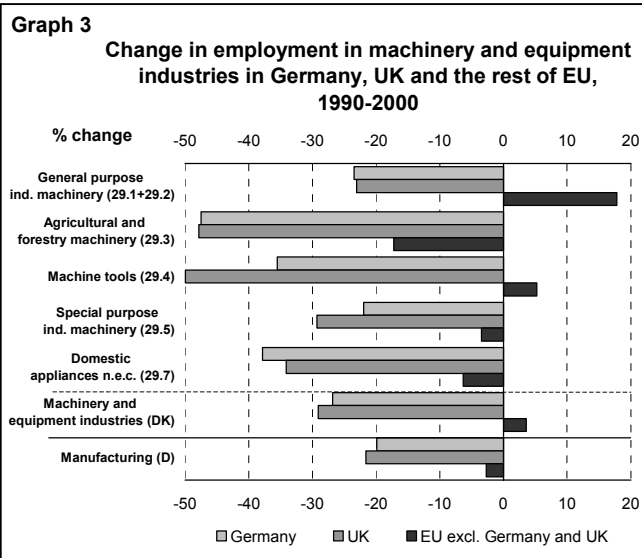
	B	DK	D	E	F	IRL	I	L	NL	A	P	FIN	S	UK	EU
Division of employment in manufacturing of machinery and equipment (%)															
General purpose ind. machinery (29.1+29.2)	49.5	59.6	48.3	41.8	53.7	56.6	49.4	16.2	57.8	39.0	32.8	43.8	47.3	56.3	49.6
Agricultural and forestry machinery (29.3)	8.4	8.6	4.0	5.7	9.2	5.4	5.9	0.3	8.2	9.5	6.8	7.1	3.9	3.9	5.6
Machine tools (29.4)	4.7	3.1	12.0	8.0	5.4	5.5	9.6	:	3.4	8.9	4.8	5.7	10.0	7.2	9.0
Special purpose ind. machinery (29.5)	31.2	22.3	28.2	29.7	21.3	13.9	24.3	51.3	27.4	34.3	44.2	39.1	26.2	19.8	26.2
Weapons and ammunition (29.6)	3.3	:	1.1	2.1	2.5	0.0	0.6	:	:	1.8	1.7	1.9	4.3	4.3	1.7
Domestic appliances n.e.c. (29.7)	2.9	:	6.4	12.7	7.9	18.6	10.2	:	3.3	6.4	9.6	2.3	8.2	8.6	7.7
Division of value-added in manufacturing of machinery and equipment (%)															
General purpose ind. machinery (29.1+29.2)	53.2	61.6	48.3	44.1	53.4	64.4	48.9	13.3	48.9	40.2	31.4	43.6	49.4	55.7	49.7
Agricultural and forestry machinery (29.3)	7.8	7.5	3.7	4.5	7.7	3.5	5.2	0.1	8.3	7.6	5.1	7.0	3.5	4.3	5.0
Machine tools (29.4)	3.8	3.1	12.2	8.1	5.5	4.6	10.3	:	3.3	9.0	3.9	5.3	12.2	8.2	9.6
Special purpose ind. machinery (29.5)	29.8	22.0	28.1	28.1	22.6	12.1	24.5	52.0	37.0	35.7	47.2	40.3	25.0	19.2	26.4
Weapons and ammunition (29.6)	3.3	:	1.1	2.2	3.0	0.0	0.8	:	0.4	1.6	1.0	1.9	3.8	4.8	1.9
Domestic appliances n.e.c. (29.7)	2.1	:	6.6	13.0	7.9	15.4	10.3	:	2.2	6.0	11.3	1.9	6.0	7.7	7.3
Value-added per person employed (in 1000 EUR)															
General purpose ind. machinery (29.1+29.2)	66.4	49.7	54.6	39.3	47.7	50.3	47.0	47.8	48.6	57.2	20.9	53.8	60.5	53.5	51.1
Agricultural and forestry machinery (29.3)	58.0	41.9	50.1	29.1	39.9	28.4	41.7	22.2	58.0	44.3	16.2	53.2	52.3	60.1	45.5
Machine tools (29.4)	50.9	48.0	55.5	38.1	49.6	36.9	51.3	:	56.1	55.7	18.1	50.9	70.5	62.0	54.1
Special purpose ind. machinery (29.5)	58.9	47.3	54.4	35.4	50.8	:	47.8	59.2	77.9	57.8	23.3	55.7	55.2	52.4	51.5
Weapons and ammunition (29.6)	60.8	:	55.7	39.4	57.6	0.0	59.6	:	48.2	12.5	52.8	51.0	60.2	55.6	55.6
Domestic appliances n.e.c. (29.7)	45.2	:	56.0	38.1	47.4	36.7	48.2	:	38.7	52.4	25.7	45.1	41.8	48.0	48.5
Machinery ind. equipment industries (DK)	61.8	48.0	54.6	37.3	47.9	44.2	47.5	58.5	57.5	55.6	21.8	54.1	57.8	53.9	51.0
Total manufacturing (D)	65.7	50.4	53.7	38.7	52.2	109.8	42.3	68.1	62.1	56.6	19.3	70.6	61.8	59.4	51.4

Notes: EL: n.a.; IRL: 1999. The data for value-added for Ireland are not comparable with those for other Member States. L: 29.2 only
EU aggregate is based on Member States for which data are available.

A source of job growth in most countries

After a period of employment growth of nearly 1% a year on average during the second half of the 1980s – significantly higher than in manufacturing as a whole – the machinery and equipment sector, along with most of manufacturing, experienced severe recession in the first part of the 1990s. Employment in the sector declined by over 3% a year between 1990 and 1995, more than in the rest of manufacturing (Table 3). The renewed growth of the Union's economy in the second half of the 1990s was accompanied by a marginal increase in employment in both manufacturing as a whole and in machinery and equipment.

These small increases at EU level, however, were mainly due to significant job losses in both Germany and the UK, where the number employed declined by just over 1% a year in manufacturing and by slightly more in both cases in machinery and equipment. These followed even larger job losses in the sector over the preceding five years (almost 5% a year in each case, more than in all other Member States apart from Greece). As a consequence, the number of persons employed in machinery and equipment in 2000 in Germany was some 27% less than 10 years earlier and in the UK, 29% less (Graph 3). The decline over the period was particularly strong in agricultural machinery



(47% in both countries) and machine tools (36% in Germany and almost 50% in the UK).

In the rest of the European Union, excluding Germany and the UK, employment in machinery and equipment rose by just under 2% a year between 1995 and 2000, well above the growth in total manufacturing (1% a year), and in a number of Member States, especially in Greece and Spain, the rise was even larger than this. The only other countries in which employment fell

Table 3: Growth of employment in machinery and equipment industries and manufacturing, 1985-2000

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	EU	EU excl. D+UK
annual average growth rate (%)																	
General purpose ind. machinery (29.1+29.2)																	
1985-1990	:	-2.0	2.6	3.3	1.9	-0.7	1.9	0.3	:	2.4	:	:	-0.7	:	-1.2	1.0	
1990-1995	:	2.7	-4.7	-7.4	-1.2	0.1	3.8	3.7	:	:	3.4	:	-1.5	-0.6	-3.8	-2.3	
1995-2000	-0.1	1.5	-0.5	:	4.8	2.4	4.5	2.9	:	:	0.9	-3.5	3.5	-1.5	-1.3	0.6	2.1
Agricultural and forestry machinery (29.3)																	
1985-1990	:	-1.7	-8.3	-15.1	-3.2	-6.9	-4.0	-1.1	:	5.0	:	:	-2.5	:	-6.3	-5.5	
1990-1995	:	-2.3	-8.1	-7.7	-4.9	-4.8	8.4	-7.5	:	:	-8.2	-2.3	-4.2	0.5	-6.9	-6.6	
1995-2000	-0.7	2.2	-4.3	:	2.0	4.4	2.5	0.2	:	:	3.0	-2.6	7.6	3.1	-5.7	-0.6	2.0
Machine tools (29.4)																	
1985-1990	:	0.5	3.7	:	4.0	-2.0	3.0	1.5	:	2.0	:	:	-2.4	:	-0.9	2.4	
1990-1995	:	-3.1	-8.0	:	-2.1	-5.0	3.9	1.3	:	:	:	-3.6	1.2	-6.8	-6.5	-6.0	
1995-2000	-4.4	-1.3	-0.4	:	5.3	1.3	0.9	3.9	:	:	1.0	1.1	-0.4	1.4	-6.9	0.1	2.6
Special purpose and machinery (29.5)																	
1985-1990	:	2.9	3.4	3.9	0.4	-1.2	2.4	0.5	:	4.9	:	:	0.2	:	-1.2	1.6	
1990-1995	:	1.8	-3.4	-4.7	-1.2	-2.8	1.6	-5.3	:	:	:	2.0	1.5	-5.2	-4.9	-3.5	
1995-2000	-1.5	2.1	-1.4	:	7.8	0.6	-3.4	2.3	:	:	1.3	6.8	0.9	2.1	-1.9	0.4	2.6
Domestic appliances n.e.c. (29.7)																	
1985-1990	:	0.9	4.2	-3.6	1.7	-4.7	3.4	-2.6	:	:	:	:	7.0	:	-0.4	0.5	
1990-1995	:	2.0	-4.9	-8.3	-2.6	-0.5	1.6	3.4	:	:	-5.5	-6.4	-7.2	-5.2	-6.3	-2.7	
1995-2000	-8.9	-7.8	-4.4	:	3.8	-3.7	-7.5	-0.7	:	:	-3.0	11.8	-7.5	-0.4	-1.9	-2.4	-1.3
Machinery and equipment industries (DK)																	
1985-1990	:	-0.9	2.5	-0.5	1.4	-1.9	2.2	0.0	-0.3	3.0	-1.2	:	-0.3	0.7	-1.2	0.9	
1990-1995	:	1.9	-4.9	-5.6	-1.9	-0.6	3.0	0.0	-1.2	1.0	-1.8	:	-0.6	-2.6	-4.8	-3.2	
1995-2000	-1.3	0.7	-1.2	5.2	5.3	0.6	0.2	2.0	-3.2	1.1	0.8	2.6	2.0	-0.2	-1.9	0.1	1.7
Manufacturing (D)																	
1985-1990	:	-1.2	1.4	-0.6	1.3	-1.7	0.7	-0.7	-0.5	1.8	-1.2	:	:	0.2	-0.1	0.7	
1990-1995	:	1.6	-3.3	-4.6	-3.2	-1.1	3.2	-1.3	-1.0	0.6	-1.7	-1.4	-1.9	-3.9	-3.6	-2.4	
1995-2000	-0.2	3.3	-1.1	-0.4	3.3	0.6	3.1	0.3	-0.5	-1.7	-0.7	-0.2	2.0	1.9	-1.2	0.1	1.1

Notes: EL, IRL: 1995-1999; FIN: 1986-1990; A: 1990 or 1991 and 1994 or 1995 depending on availability; 1985-1990: EU excludes B, L, A, P, S; 1990-1995 and 1995-2000: EU aggregate is based on Member States for which data are available.

significantly were Belgium and Luxembourg, and it declined slightly in Sweden. As a result, the number employed in machinery and equipment in the rest of the European Union apart from Germany and the UK, was around 4% higher in 2000 than in 1990 compared with a decline of almost 3% in manufacturing as a whole. Employment growth in the rest of the EU was especially high in general purpose industrial machinery (18%), which accounted for almost half of the total employed in machinery and equipment in 2000.

Leaving aside Belgium, Germany and the UK, growth of employment within machinery and equipment was particularly high and widespread over the period 1995 to 2000 in machine tools and special purpose industrial machinery (2.5 % a year in both cases), while in domestic appliances, the number employed fell in all Member States, except Spain and Portugal.

SMEs of varying importance in the sector

Small enterprises with less than 50 workers were responsible for 29% of total employment in machinery and equipment in the EU in 2000, less than in total manufacturing (35%). Medium-sized firms with between 50 and 249 employees, however, were responsible for a slightly larger share of employment in machinery and

equipment than in manufacturing as a whole (27% as against 23%), so that small and medium sized enterprises (SMEs) accounted for much the same share of employment in the sector as in manufacturing (57% as against 58%). Within the EU, only in Germany (close to 57%) and Sweden was a majority of the work force in machinery and equipment employed in large enterprises with 250 or more employees, in line with the relatively large share of employment in such enterprises in manufacturing as a whole (Table 4).

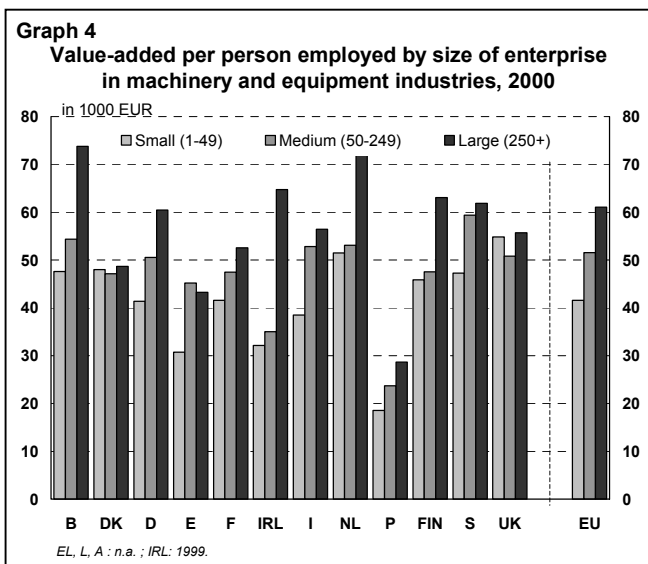
Elsewhere, SMEs were generally more important for employment in machinery and equipment than in the rest of manufacturing in Ireland, the Netherlands, Portugal, Finland and the UK and less important in Italy. In the other Member States, they accounted for a similar share of the total employed.

Within the machinery and equipment sector, large enterprises were responsible for a predominant share of employment only in the domestic appliances industry and in armaments (accounting for well over 70% of the total employed in the EU in both cases). In the other industries included in the sector, SME accounted for some 55% of employment in general purpose industrial machinery at EU level, for over 60% of employment in special purpose industrial machinery and machine tools and for almost 75% in agricultural machinery.

Table 4: Division of employment by size of enterprise in machinery and equipment industries, 2000

	B	DK	D	E	F	IRL	I	NL	A	P	FIN	S	UK	EU
<i>as % of total</i>														
General purpose industrial machinery (29.1+29.2)														
1-49	:	16.7	16.2	42.8	25.6	28.6	47.1	:	19.4	56.3	24.7	22.1	25.8	27.2
50-249	:	30.9	25.0	29.2	25.7	:	27.1	:	:	:	35.6	:	34.4	27.6
250+	:	52.4	58.9	28.0	48.7	:	25.9	:	:	:	39.7	:	39.8	45.2
Agricultural and forestry machinery (29.3)														
1-49	28.2	36.9	:	78.9	58.5	58.6	58.3	49.4	35.1	50.4	31.8	32.6	37.4	47.2
50-249	:	31.1	:	:	25.6	:	:	39.3	28.3	:	22.7	:	20.3	26.6
250+	:	32.0	:	:	15.9	0.0	:	11.3	36.6	:	45.5	:	42.3	26.2
Machine tools (29.4)														
1-49	:	60.1	13.9	54.2	34.5	45.0	42.2	40.8	15.6	58.5	34.9	29.8	50.6	28.0
50-249	:	:	33.5	29.3	36.4	:	35.7	:	41.9	41.5	:	:	23.8	33.2
250+	:	:	52.6	16.5	29.1	0.0	22.1	:	42.5	0.0	:	:	25.6	38.7
Special purpose industrial machinery (29.5)														
1-49	22.6	37.8	19.6	76.0	38.6	72.3	51.2	29.3	20.5	57.3	20.8	31.1	40.8	35.7
50-249	:	35.1	31.3	21.7	32.5	27.7	30.5	31.8	33.2	30.0	28.2	:	35.8	31.1
250+	:	27.1	49.1	2.3	28.9	0.0	18.3	38.9	46.3	12.7	51.0	:	23.4	33.2
Domestic appliances n.e.c. (29.7)														
1-49	32.7	:	3.1	13.3	4.9	5.5	10.5	:	:	:	25.0	:	11.6	9.5
50-249	67.3	:	:	:	13.0	23.1	16.9	45.3	:	43.6	:	:	16.6	16.1
250+	0.0	:	:	:	82.1	71.4	72.6	:	:	:	:	:	71.8	74.4
Machinery and equipment industries (DK)														
1-49	26.4	24.2	17.0	51.3	29.7	32.9	44.4	36.9	:	52.1	23.9	23.4	28.9	29.2
50-249	26.0	31.2	26.4	24.3	26.4	33.1	27.0	34.7	:	31.4	30.9	24.3	30.8	27.4
250+	47.7	44.6	56.6	24.5	43.9	34.0	28.5	28.4	:	16.5	45.3	52.3	40.3	43.3
Manufacturing (D)														
1-49	31.0	26.9	21.8	52.7	31.3	22.1	56.4	34.8	29.0	46.8	23.9	26.4	28.2	34.7
50-249	23.5	26.4	23.2	20.9	22.2	34.0	20.6	25.3	27.1	29.6	22.5	20.8	25.8	23.2
250+	45.5	46.7	55.0	26.4	46.5	43.9	23.0	39.9	44.0	23.7	53.6	52.9	46.0	42.1

Notes: EL, L: n.a.; IRL: 1999; EU aggregate is based on countries for which data are available.



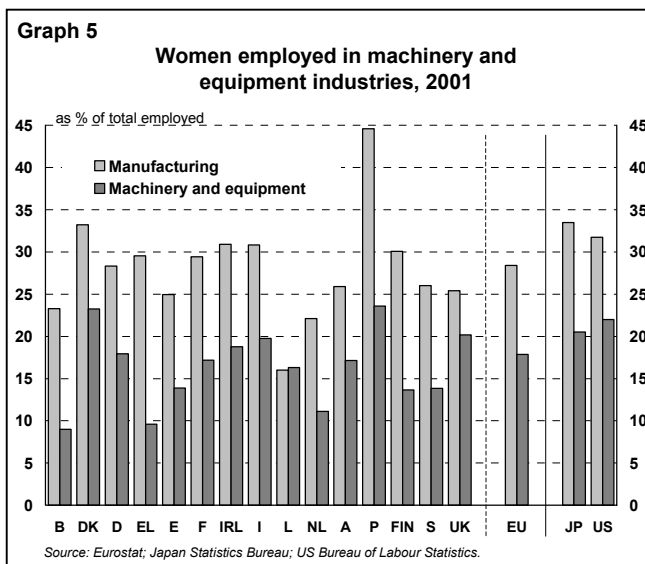
Value-added per person employed in the machinery and equipment sector was, on average, 15% higher in large enterprises than in medium-sized ones and 32% higher than in small firms. These differences were significantly smaller than in total manufacturing. The extent of the difference between different sized enterprises in machinery and equipment was similar to the average in the Union in most Member States, but much narrower in Denmark and the UK (Graph 4).

A sector with few women employed and slightly higher than average skill levels

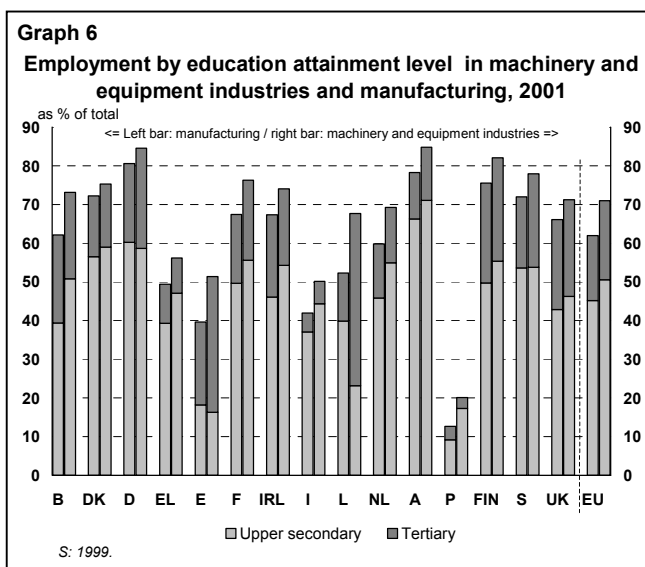
The machinery and equipment sector is predominantly a preserve of men rather than women. According to data from the EU Labour Force Survey (Structural Business Statistics data are not split by gender), the great majority of those employed in the sector are men, women accounting for only 18% of the total in 2001. This is much less than in total manufacturing (28%). Women account for a slightly larger share of the total work force in machinery and equipment in the US and Japan (just over 20%), but still much smaller than in total manufacturing (Graph 5).

Within the EU, only in Denmark and Portugal women made up more than 20% of the work force in machinery and equipment in 2001. In the Netherlands, the share of women was only just over 10% and in Belgium and Greece, below 10%.

The work force in machinery and equipment is slightly more skilled than in manufacturing as a whole, measuring skills in terms of educational attainment. Just over half of the total employed in machinery and equipment in 2001 in the EU had upper secondary level educational qualifications and a further 20% had tertiary



(or university degree) level qualifications, so that only 29% had not progressed beyond basic schooling. By contrast, in total manufacturing, 45% of those employed had upper secondary education and 17% tertiary level, leaving 38% with only basic schooling (Graph 6). This difference was observed in all Member States.



A major contributor to EU net exports

Exports of machinery and equipment are an important part of the production of the enterprises involved in this sector of activity, while imports from outside of the EU account for a relatively small share of the internal market. It is, however, difficult to relate data on exports and imports directly to the SBS data on production or turnover. This is largely because not all enterprises involved in the trading of machinery and equipment are classified to this sector of activity in the SBS, since classification depends on the main category of product manufactured.

Nevertheless, exports and imports of machinery and equipment can be related to total manufacturing trade flows to give an indication of their relative importance. In addition, comparing the share of machinery and equipment exports in total exports of manufactures with the share of the industry in total manufacturing value-added provides an insight into the importance of trade to machinery and equipment enterprises as compared with those in other parts of manufacturing.

This comparison shows that exports of machinery and equipment are an important part of EU trade with the rest of the world. In 2001, they accounted for 15% of total exports of manufactures of EU Member States to third countries, against under 11% for the share of the sector of total manufacturing value-added (Table 5).

Table 5: Share of exports, imports and value-added of machinery and equipment in total manufacturing in the EU, 2001

	Imports		Exports	Value-added
	EU intra	EU extra	EU extra	EU
<i>as % of manufacturing total</i>				
General purpose ind. machinery (29.1+29.2)	1.9	4.1	6.8	5.4
Agricultural and forestry machinery (29.3)	0.2	0.2	0.5	0.5
Machine tools (29.4)	0.4	1.2	1.4	1.0
Special purpose ind. machinery (29.5)	1.0	1.9	5.2	2.8
Weapons and ammunition (29.6)	0.0	0.0	0.1	0.2
Domestic appliances n.e.c. (29.7)	0.5	0.7	0.8	0.8
Machinery and equipment industries (DK)	3.9	8.3	14.9	10.8

Note: extra-EU exports and imports correspond to EU trade with the rest of the world; intra-EU imports represent imports by Member States from the other Member States. It is equivalent to intra-EU exports.

Within the sector, exports of both general purpose and special purpose industrial machinery were especially important, accounting between them for 12% of manufacturing exports as opposed to 8% of value-added.

Trade in machinery and equipment between Member States (i.e. inside the European Union) is proportionately much less important than external trade, amounting to only 4% of total internal trade in manufactures in 2001, significantly lower than the share of the sector in manufacturing value-added (11%).

Imports of machinery and equipment from outside the European Union are more significant. In 2001, machinery and equipment accounted for just over 8% of total manufactures imported by Member States from the rest of the world. In consequence, EU exports of machinery and equipment exceeded EU imports considerably and the trade surplus earned by this sector was substantial, amounting to some 34% of total trade with third countries in the products manufactured by the sector in 2001 (Table 6). All of the industries included in the sector recorded significant trade surpluses, though these were smaller for domestic appliances and machine tools than for other parts of the sector.

Most Member States also recorded a trade surplus in machinery and equipment in 2001, this being especially large and for all branches of the sector in Germany and Italy, which between them account for 55% of total employment and value-added in the sector in the Union. Greece, Spain, Ireland and Portugal, however, recorded large deficits in all areas (except Spain in armaments), while in the UK, trade was broadly in balance despite an important deficit in domestic appliances. A majority of Member States recorded trade deficits in Agricultural and forestry machinery, machine tools, armaments, and domestic appliances, the reverse being true in the other activities.

Table 6: Trade performance of machinery and equipment industries, 2001

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	EU
<i>Exports-imports as a % of exports+imports</i>																
General purpose ind. machinery (29.1+29.2)	2.2	22.8	37.2	-77.5	-25.0	2.5	-6.2	38.3	7.3	0.1	-1.2	-49.2	11.1	19.6	2.1	29.6
Agricultural and forestry machinery (29.3)	22.2	-10.9	45.9	-65.2	-48.6	-28.3	-55.2	65.8	-82.5	19.3	23.9	-86.6	34.2	-19.2	24.9	46.4
Machine tools (29.4)	-9.4	-26.9	36.0	-79.7	-24.5	-35.4	-49.0	36.7	-20.9	-1.6	0.8	-72.7	-7.2	18.6	-8.4	14.3
Special purpose ind. machinery (29.5)	12.1	24.4	54.1	-66.7	-31.3	8.2	-49.1	45.4	0.4	16.4	27.6	-33.7	44.0	31.9	10.3	50.4
Weapons and ammunition (29.6)	14.5	-44.1	26.5	-43.6	1.7	53.5	-70.6	61.2	-85.1	-55.5	-4.9	-11.0	-17.4	14.0	0.9	43.2
Domestic appliances n.e.c. (29.7)	-35.0	-7.8	19.6	-61.3	-1.0	-17.9	-21.4	67.9	-79.2	-20.0	-7.2	-23.1	-28.2	14.4	-51.4	11.3
Machinery and equipment industries (DK)	2.0	14.9	40.7	-70.9	-24.2	-2.6	-24.6	44.7	-4.1	2.9	8.6	-42.6	19.8	20.6	-0.5	33.8
Total manufacturing (D)	6.7	3.9	13.2	-45.9	-9.1	1.8	25.4	8.9	-5.3	6.1	-1.8	-17.2	22.2	13.2	-10.5	5.7

Notes: Member States: intra- and extra-EU trade, EU aggregate: extra-EU trade only

➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

Symbols “:” not available or confidential.

Definitions

Division of employment and value-added by sector of activity

Employment and value-added in the Structural of Business Statistics are divided into sectors of activity according to the NACE Rev.1 system of classification. This categories activity by section (1-letter codes), sub-section (2-letter codes), division (2-digit codes), groups (3-digit codes) and classes (4-digit codes). All manufacturing activities are included under Section D. The machinery and equipment industries analysed in this publication include the following sub-sections, divisions and groups:

DK	Machinery and equipment
29.1	Machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines
29.2	Other general purpose machinery
29.3	Agricultural and forestry machinery
29.4	Machine tools
29.5	Other special purpose machinery
29.6	Weapons and ammunitions
29.7	Domestic appliances n.e.c.

Number of persons employed: defined as the total number of persons who work in the observation unit (inclusive of working proprietors and partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams). It includes part-time workers, seasonal workers, apprentices and home workers who are on the pay roll. The observation unit for aggregating data is the enterprise, which is defined as *‘the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources’*.

Value-added: Value-added measured at factor cost, which is the gross income from operating activities after adjusting for operating subsidies and indirect taxes (including value-added tax).

Educational attainment levels

Educational attainment levels are based on the International Standard Classification of Education (ISCED), as revised in 1997. This divides education into 7 main levels. These have been grouped into three levels in the analysis here:

Basic schooling, defined as ISCED levels 0 to 2, pre-primary, primary and lower secondary education;

upper secondary, defined as ISCED levels 3 and 4, upper secondary and post-secondary, non-tertiary education;

tertiary, defined as ISCED levels 5 and 6, first stage of tertiary education and second stage of tertiary education.

Data for the UK are grouped in a similar way, despite the fact that agreement has yet to be reached over the appropriate classification of national qualifications. For this country, therefore, the absolute proportions of the work force with differing level of education are subject to change, though this ought not to affect too much the relative proportion in machinery and equipment industries as compared with total manufacturing.

The data are taken from the EU Labour Force Survey (LFS), which classifies those employed to NACE 2-digit industries.

Data sources

Structural Business Statistics (SBS): collected within the framework of Council regulation on structural business statistics (Regulation (EC, EURATOM) No. 58/97 of December 1996. The SBS Regulation governs the transmission of data to Eurostat from the reference year 1995 onwards and, in principle, covers all market activities in sections C to K and M to O of NACE Rev. 1, but, in practice, the data available are confined to NACE Rev. 1 sections C to K, excluding section J, financial services. For further information, visit:

http://forum.europa.eu.int/Public/irc/dsis/bmethods/info/data/new/main_en.html

The SBS data used in the analysis to describe the situation in 2000 are taken from the SBS\ENTER_MS series which covers all enterprises from 1995 onwards (though the data are less complete and less accurate for the years before 1999). The data available for Greece cover only enterprises with 20 persons or more employed and are, therefore, not included in the series.

The data used to describe changes in employment over time are taken from the SBS\ENTER_L_MS long time series which covers enterprises with 20 or more persons employed. This series is confined to industry and construction only.

The data used for employment and value-added by size of enterprise are taken from the SBS\INDUS_MS series, which covers enterprises whose main activity is in industry (NACE Rev 1 sections C to E) and which breaks data down by the employment-size of enterprise. In the analysis, these data are grouped into three size classes, small enterprises with 1-49 persons employed, medium-sized enterprises with 50-249 persons employed and large enterprises with 250 or more persons employed.

EU Labour Force Survey (LFS): a survey of private households which provides data on the population living in these by nationality and by work status as well as by sex and age. The main focus is on employment, unemployment and inactivity and the various aspects of these, including the sector of activity in which people are employed and the highest level of educational attainment reached.

COMEXT: Eurostat’s reference database on external trade statistics. Data for Member States on exports and imports include both intra-EU trade and extra-EU trade and are broken down by detailed product group, which in the analysis have been aggregated to correspond as closely as possible with machinery and equipment. Data included in the analysis for the EU as a whole relate only to extra-EU trade and do not include trade between Member States.

Further information:

➤ Databases

New Cronos : SBS/enterp and LFS
Comext

To obtain information or to order publications, databases and special sets of data, please contact the **Data Shop** network:

BELGIQUE/BELGIË	DANMARK	DEUTSCHLAND	ESPAÑA	FRANCE	ITALIA – Roma
Eurostat Data Shop Bruxelles/Brussel Planistat Belgique Rue du Commerce 124 Handelsstraat 124 B-1000 BRUXELLES / BRUSSEL Tel. (32-2) 234 67 50 Fax (32-2) 234 67 51 E-mail: datashop@planistat.be URL: http://www.datashop.org/	DANMARKS STATISTIK Bibliotek og Information Eurostat Data Shop Sejrogade 11 DK-2100 KØBENHAVN Ø Tlf. (45) 39 17 30 30 Fax (45) 39 17 30 03 E-mail: bjb@dst.dk URL: http://www.dst.dk/bibliotek	STATISTISCHES BUNDESAMT Eurostat Data Shop Berlin Otto-Braun-Straße 70-72 (Eingang: Karl-Marx-Allee) D-10178 BERLIN Tel. (49) 1888-644 94 27/28 (49) 611 75 94 27 Fax (49) 1888-644 94 30 E-Mail: datashop@destatis.de URL: http://www.eu-datashop.de/	INE Eurostat Data Shop Paseo de la Castellana, 183 Despacho 011B Entrada por Estébanez Calderón E-28046 MADRID Tel. (34) 915 839 167/ 915 839 500 Fax (34) 915 830 357 E-mail: datashop.eurostat@ine.es URL: http://www.ine.es/prodysen/datashop/index.html	INSEE Info Service Eurostat Data Shop 195, rue de Bercy Tour Gamma A F-75582 PARIS CEDEX 12 Tél. (33) 1 53 17 88 44 Fax (33) 1 53 17 88 22 E-mail: datashop@insee.fr	ISTAT Centro di Informazione Statistica Sede di Roma, Eurostat Data Shop Via Cesare Balbo, 11a I-00184 ROMA Tel. (39) 06 46 73 32 28 Fax (39) 06 46 73 31 01/07 E-mail: datashop@istat.it URL: http://www.istat.it/Prodotti-e/Allegati/Eurostatdatashop.html
ITALIA – Milano	LUXEMBOURG	NEDERLAND	NORGE	PORTUGAL	SCHWEIZ/SUISSE/SVIZZERA
ISTAT Ufficio Regionale per la Lombardia Eurostat Data Shop Via Fieno 3 I-20123 MILANO Tel. (39) 02 80 61 32 460 Fax (39) 02 80 61 32 304 E-mail: mileuro@tin.it URL: http://www.istat.it/Prodotti-e/Allegati/Eurostatdatashop.html	Eurostat Data Shop Luxembourg 46A, avenue J.F. Kennedy BP 1452 L-1014 LUXEMBOURG Tél. (352) 43 35-2251 Fax (352) 43 35-22221 E-mail: dslux@eurostat.datashop.lu URL: http://www.datashop.org/	Centraal Bureau voor de Statistiek Eurostat Data Shop-Voorburg Postbus 4000 2270 JM VOORBURG Nederland Tel. (31-70) 337 49 00 Fax (31-70) 337 59 84 E-mail: datashop@cbs.nl URL: www.cbs.nl/eurodatashop	Statistics Norway Library and Information Centre Eurostat Data Shop Kongens gate 6 Boks 8131 Dep. N-0033 OSLO Tel. (47) 21 09 46 42/43 Fax (47) 21 09 45 04 E-mail: Datashop@ssb.no URL: http://www.ssb.no/biblioteket/datashop/	Eurostat Data Shop Lisboa INE/Serviço de Difusão Av. António José de Almeida, 2 P-1000-043 LISBOA Tel. (351) 21 842 61 00 Fax (351) 21 842 63 64 E-mail: data.shop@ine.pt	Statistisches Amt des Kantons Zürich, Eurostat Data Shop Bleicherweg 5 CH-8090 Zürich Tel. (41) 1 225 12 12 Fax (41) 1 225 12 99 E-mail: datashop@statistik.zh.ch URL: http://www.statistik.zh.ch
SUOMI/FINLAND	SVERIGE	UNITED KINGDOM	UNITED STATES OF AMERICA		
STATISTICS FINLAND Eurostat Data Shop Helsinki Tilastokirjasto PL 2B FIN-00022 Tilastokeskus Työpajakatu 13 B, 2. kerros, Helsinki P. (358-9) 17 34 22 21 F. (358-9) 17 34 22 79 Sähköposti: datashop@stat.fi URL: http://tilastokeskus.fi/tk/kk/datashop/	STATISTICS SWEDEN Information service Eurostat Data Shop Karlavägen 100 - Box 24 300 S-104 51 STOCKHOLM Tfn (46-8) 50 69 48 01 Fax (46-8) 50 69 48 99 E-post: infoservice@scb.se URL: http://www.scb.se/tjanster/datashop/datashop.asp	Eurostat Data Shop Office for National Statistics Room 1.015 Cardiff Road Newport NP10 8XG South Wales United Kingdom Tel. (44-1633) 81 33 69 Fax (44-1633) 81 33 33 E-mail: eurostat.datashop@ons.gov.uk	HAVER ANALYTICS Eurostat Data Shop 60 East 42nd Street Suite 3310 NEW YORK, NY 10165 USA Tel. (1-212) 986 93 00 Fax (1-212) 986 69 81 E-mail: eurodata@haver.com URL: http://www.haver.com/		

Media Support Eurostat (for professional journalists only):

Bech Building Office A4/017 • L-2920 Luxembourg • Tel. (352) 4301 33408 • Fax (352) 4301 35349 • e-mail: eurostat-mediasupport@cec.eu.int

For information on methodology

Walter Sura, Eurostat/D2, L-2920 Luxembourg, Tel. (352) 4301 33 782, Fax (352) 4301 32 600,

E-mail: walter.sura@cec.eu.int

In collaboration with Manuel Hubert and Terry Ward.

ORIGINAL: English

Please visit our web site at www.europa.eu.int/comm/eurostat/ for further information!

A list of worldwide sales outlets is available at the **Office for Official Publications of the European Communities**.

2 rue Mercier – L-2985 Luxembourg
Tel. (352) 2929 42118 Fax (352) 2929 42709
URL: <http://publications.eu.int>
E-mail: info-info-opoce@cec.eu.int

BELGIQUE/BELGIË – DANMARK – DEUTSCHLAND – GREECE/ELLADA – ESPAÑA – FRANCE – IRELAND – ITALIA – LUXEMBOURG – NEDERLAND – ÖSTERREICH
PORTUGAL – SUOMI/FINLAND – SVERIGE – UNITED KINGDOM – ISLAND – NORGE – SCHWEIZ/SUISSE/SVIZZERA – BALGARJIA – ČESKÁ REPUBLIKA – CYPRUS
EESTI – HRVATSKA – MAGYARORSZÁG – MALTA – POLSKA – ROMÂNIA – RUSSIA – SLOVAKIA – SLOVENIA – TÜRKIYE – AUSTRALIA – CANADA – EGYPT – INDIA
ISRAËL – JAPAN – MALAYSIA – PHILIPPINES – SOUTH KOREA – THAILAND – UNITED STATES OF AMERICA

Order form

I would like to subscribe to Statistics in focus (from 1.1.2003 to 31.12.2003):

(for the Data Shop and sales office addresses see above)

All 9 themes (approximately 200 issues)

Paper: EUR 240

Language required: DE EN FR

Statistics in focus can be downloaded (pdf file) free of charge from the Eurostat web site. You only need to register. For other solutions, contact your Data Shop.

Please send me a free copy of 'Eurostat mini-guide' (catalogue containing a selection of Eurostat products and services)

Language required: DE EN FR

I would like a free subscription to 'Statistical References', the information letter on Eurostat products and services

Language required: DE EN FR

Mr Mrs Ms

(Please use block capitals)

Surname: _____ Forename: _____

Company: _____ Department: _____

Function: _____

Address: _____

Post code: _____ Town: _____

Country: _____

Tel.: _____ Fax: _____

E-mail: _____

Payment on receipt of invoice, preferably by:

Bank transfer

Visa Eurocard

Card No: _____ Expires on: ____/____/____

Please confirm your intra-Community VAT number:

If no number is entered, VAT will be automatically applied. Subsequent reimbursement will not be possible.